Message from the Chairman of the Board of Directors

Over the last years, Petrobras has made important changes that have overcome one of the biggest crises in its history. Significant advances in governance and control systems were fundamental to this overcoming, as well as the measures taken to reduce its indebtedness.

After the crisis, the company faces challenges related to the great technological transformations and consumption patterns of society, as well as the opening of new opportunities and the very development of the Brazilian market.

In this process, the Board of Directors will contribute with a vision of the economic environment and the energy industry in the country and globally, and will seek to guide and define strategic choices for the company, aiming at its sustainability in the long term.

I assumed the mission of chairing this Board with great enthusiasm, which has as its characteristics the diversity in its composition and the complementarity of the experiences of its members, and has as a commitment to act in the interests of the company and its shareholders.

We invite everyone to explore the Petrobras’ journey in 2018, and its perspectives for the future contained in this Integrated Report.

Eduardo Bacellar Leal Ferreira
Chairman of the Board of Directors
Message from the CEO

The execution of the agreements with the US Securities and Exchange Commission (SEC) and the US Department of Justice (DoJ) and the sale on January 30, 2019 of the Pasadena refinery – whose acquisition had become a symbol of corruption in Brazil – marked the end of a painful cycle for Petrobras, its shareholders, employees and the Brazilian society, in which the company was the victim of prolonged looting perpetrated by a criminal organization. Petrobras’ performance over the past year has undoubtedly been the best in many years, which includes breaking some historical records, involving free cash flow and adjusted EBITDA, and the interruption of four years of losses. An effective liability management process extended the average debt maturity from 7.14 years in 2015 to 9.14 years in 2018, which helps mitigate refinancing risks. In February 2019, our market capitalization surpassed the USD 100 billion, which puts us back in the position of the largest company in Latin America.

We are celebrating the good results of 2018, but cannot limit ourselves to the internal vision, the comparison with ourselves even in previous years. Broadening our horizon for the global oil industry, we humbly acknowledge that we are far short of what is desirable. We cannot be satisfied with this current situation as we have much to do and many challenges to overcome. Non-conformism forces us to focus on five strategic pillars.

We have to improve the capital allocation substantially, by focusing on the assets in which we are the natural owner and promoting healthy capital competition among our investment projects. A company operates at a loss until it manages to return the capital employed in its operations, which we have not yet been able to do. Our proven oil and gas reserves reached 9.6 billion barrels of oil equivalent (boe), according to the SEC criteria. This implies replacement of 125% of the volume produced in 2018 (excluding the effect of oilfield divestment) and a proven reserves/production ratio of 11.1 years. The important thing to note is that most of these reserves originate from world-class assets such as the pre-salt, the frontier of oil exploration in the world where Petrobras is the undisputed leader and natural owner. Focusing on these low-cost assets, high quality and productivity, and long life represents an enormous...
potential for value creation over time. In the industry, the exploitation of world-class assets is one of the keys to a company’s success.

The generation of economic profit requires greater agility in the decision-making process, which is being pursued in 2019 with the indispensable care to safeguard the high standards of corporate governance, and the strict compliance standards implemented in Petrobras in recent years. In this context, it is worth mentioning that, for example, delays in project implementation are generally the largest source of reduction of their rates of return. With the aid of innovations, we are developing initiatives to shorten the time interval between the beginning of the exploratory activity and the first oil and also the time of the ramp-up phase of the E&P projects, which will contribute to increase their return.

We must constantly seek the investment grade rating and the reduction of the capex through financial deleveraging and transparent relationship with the global financial markets. The exposure of cash flow to the cyclical volatility of oil prices requires its producers to have low leverage. Our gross indebtedness decreased significantly from USD 126.3 billion in 2015 to USD 84.4 billion at the end of 2018, but is still high compared to the current cash generation capacity: gross debt/operating cash flow of 3.2x and gross debt/Adjusted EBITDA of 2.7x. We will act simultaneously on the numerator and the denominator of these fractions: reduce the debt and work for the growth of the cash flow through an increase of production and a reduction in costs.

In the same way, we must permanently seek to have low costs, a basic condition in any company for the generation of value regardless of the economic cycle and, more importantly, the oil industry, typically with high exposure to the cycles of global economic activity. The digital transformation, with the massive use of digitization, data analytics and artificial intelligence, is essential for generating efficiency gains and lower costs.

Respecting people and the environment and preserving the safety of our operations should be a golden rule. The oil and gas exploration and production activity is exposed to a wide range of risks, including operational risks that, once materialized, have an enormous potential for destruction of value and even threaten the survival of a company. We work tirelessly to minimize them and, at the same time, to strengthen our ability to respond to the occurrence of any negative events. The recordable incident rate reached 1.01 accidents per million man-hours, with a decrease of 6.5% over 2017, but slightly above the warning threshold of 1.0 for 2018. Despite the progress in this indicator, the occurrence of six fatalities saddens and embarrasses us. The loss of human life, whatever its explanation, is unacceptable. Our permanent goal is zero fatality.

The goal of maximizing value for shareholders cannot, under any circumstances, dismiss the attention to the safety of people and operations and the preservation of the environment, nor result in underestimation of risks so that goals are achieved.

We believe that our transformational change agenda is capable of creating considerable value for shareholders and for Brazil in the future. We can say, then, that the best days of Petrobras are still ahead of us.

Finally, we would like to thank all those who participated in the reconstruction efforts of Petrobras and, above all, our collaborators. The company has a recognized technical expertise that will be crucial in this new era that began in 2019.

Roberto Castello Branco
CEO of Petrobras
About the report

The Integrated Reporting is a process that promotes a more cohesive and efficient approach to the development of corporate reports, aiming at improving the quality of information available to providers of financial capital, in order to explain how the organization generates value over time and providing subsidies to capital allocation in a more efficient and productive way. This publication (2018 Annual Report), along with the Sustainability 2018 and the Financial Statements, form the basis of our Integrated Reporting.

The Annual Report is also a Management Report and seeks not only to comply with current regulations – such as Law 6404/1976 and the guidelines of the Brazilian Securities and Exchange Commission (CVM) – as well as with principles and content elements recommended by the Integrated Reporting framework from the International Integrated Reporting Council (IIRC). In addition, the financial information in this report was prepared in compliance with the International Financial Reporting Standards (IFRS) and also with the accounting practices adopted in Brazil by the Accounting Pronouncements Committee, or CPC (Comitê de Pronunciamentos Contábeis).

In the last year, with the publication of our first Integrated Reporting, we advanced the reporting process, which aims at improving the transparency and connectivity of information provided and demonstrating how we generate value over time.

In the Annual Report 2018, we seek to improve this process and present, in addition to the main highlights of the year, the review of our materiality and our contributions to the Sustainable Development Goals.

This report was validated by our Executive Board and approved by our Board of Directors. In addition, the independent auditor (KPMG) read the information contained herein, in the context of the auditing standards related to the company’s financial statements for the fiscal year ended December 31, 2018, as included in its report on such financial statements issued on February 27, 2019.

Have a good journey!
Materiality

The material issues are the result of the process of identification, evaluation, and prioritization of the relevant themes that can impact our value generation in the short, medium, and long term. In 2018 we reviewed our materiality.

Elaboration of a list from the compilation of previous material themes, survey of the expectations of stakeholders, relevant issues to the Dow Jones Sustainability Index (DJSI) and Sustainability Accounting Standards Board (SASB), interactions with investors and themes of our Strategic Planning and Business and Management Plan.

The 28 relevant themes were evaluated internally by our senior management, as recommended by the International Integrated Reporting Council (IIRC) framework, and externally by a group of investors, by assigning importance in two dimensions: impact on our business and relevance to stakeholders.

The results of this consultation gave rise to our materiality matrix. Thus, material themes were defined based on objective prioritization criteria and were internally approved.

Our activities and operations contribute to several of the 17 Sustainable Development Goals (SDGs) from 2030 Agenda of the United Nations. Our material themes are mainly related to the following SDGs:

Throughout our Integrated Reporting, we can also find our contributions to reach the SDG:
Safety is a value acknowledged in our Strategic and Business and Management Plans.

In order to materialize this value into strategic objectives and, above all, to improve safety practices, we established a set of actions in order to involve all collaborators. Such actions will be detailed throughout this chapter, demonstrating the priority of safety at all levels, processes, and activities.

In our 2018–2022 Business and Management Plan, our goal was to reduce the Total Recordable Injury (TRI), one of the metrics monitored by senior management, by 53%, from a result of 2.15 in 2015 to 1.00 in 2018. We achieved a result of 1.01 in 2018.

TRI’s evolution is a direct consequence of the implementation of several initiatives for the promotion of our safety culture, among which we highlight the Commitment to Life Program; the safety trainings; and the Health, Safety and Environment (HSE) Management Assessment Program.

In the 2019–2023 Business and Management Plan, we established an alert threshold for TRI of 0.99 for the year 2019. This result will places us at the same level as the best oil and gas companies in the world in terms of safety. In order to maintain the conditions for the continuous reduction of safety metrics, the 2018–2019 cycle of the Commitment to Life Program was initiated in October 2018.

COMMITMENT TO LIFE PROGRAM

A set of initiatives focusing on accidents prevention and preserving life and the environment, the Commitment to Life Program was launched in October 2016 to strengthen the guidelines and standardize safety practices at all stages of the processes.

These initiatives have been structured based upon the results of our Health, Safety, and Environment (HSE) management assessments, the root causes identified in the accident investigation processes and the environmental scenarios in recent years.

SENIOR MANAGEMENT MONITORING OF ACTIONS

Senior management actively participates in the Commitment to Life Program. Executive managers, the Executive Board and the Board of Directors systematically follow-up the metrics in their meetings, and managers participate in training aimed at leadership, thus consolidating the HSE culture in Petrobras.

Through the Board Visits Program, members of our Board of Directors make technical visits to our operational units with the purpose of checking on the dissemination of the safety culture, such as the knowledge and practical use of the Golden Rules on daily tasks, through behavioral audits with our collaborators. During 2018 the Board of Directors made technical visits to the Paulínia Base (Petrobras Distribuidora unit), to the São Sebastião Terminal, the National Center of Control and Logistics, the National Ship Monitoring Center and the Ship Simulator (Transpetro units) and to UO-ES (Petrobras controller unit).

Five visits to the Petrobras facilities (such as refinery and production platforms), Transpetro and Petrobras Distribuidora are scheduled to take place in 2019.

Technical visits and behavioral audits are also conducted by our CEO and executive officers.
The main highlights of the Program for the 2018-2019 Cycle are:

- **IMPROVING THE SAFETY MANAGEMENT PROCESS**
  - Risk assessment review.
  - Training for employees.

- **STRENGTHENING THE APPROACH TO HUMAN FACTORS**
  - Implementation of the Atentamente and Amigo do Peito programs for all employees.

- **STRENGTHENING THE HSE CULTURE**
  - Actions resulting from the perception survey.

- **PROMOTE TRAINING WITH LANGUAGE MORE ACCESSIBLE TO T-HUET APPLICATION**

- **PRESERVING THE ENVIRONMENT**
  - Commitment to climate.
  - Water resources management.

- **IMPLEMENTING NEW TECHNOLOGIES**
  - Data analytics to direct actions, virtual reality, drones, leak identification.

Throughout 2018, we developed a series of campaigns to strengthen the HSE culture based on results of a diagnosis made at the beginning of the year. The topics covered in the campaigns were: safe positioning, cargo handling, hand care, use of personal protective equipment (PPE) and fire prevention. In addition to the campaigns, we launched the “Cuidar e Ser Cuidado” (be careful and be taken care of) concept, which began to permeate all communication actions for HSE, highlighting the importance of mutual care - care for each other and accept that someone takes care for you.

In 2018, we trained more than 18,500 people on HSE practices, strengthened awareness through campaigns, and defined the Golden Rules training, which aims to prevent harm to people and strengthen the safety culture as a must for new employees and hires. With this, since 2017, more than 198 thousand employees and Petrobras’ contractors and subsidiaries were trained in our ten Golden Rules. In addition, a supplier relationship plan foresees the deployment of the main messages to the leaders of contracted companies, who should work on the topics with their teams.

### HSE CULTURE PERCEPTION SURVEY

In 2018, we conducted a survey to learn about the collective perception of employees about the HSE culture. This was done by assessing the Leadership, Structure, and Processes dimensions, in order to highlight the main strengths and opportunities for improvement for each level of the organization. The survey involved 108,387 of Petrobras’ employees and contractors, representing 80% of respondents.

The safety culture within a company has four levels, determined according to the maturity of the organization. The first level is the reactive culture, where the company only deals with the safety issues in a responsive and instinctive way, usually delegating all actions to safety professionals. The second level is the dependent culture, characterized by clear rules and the need for supervision to be met. The third level is independent culture, in which employees understand that safety is important and followed even when their supervision is not present. The fourth level is the interdependence culture: at this stage, employees not only are aware and follow the rules, but also help each other.

The result of the survey revealed that Petrobras was in the stage of independent culture. Our goal now is to reach the interdependent stage and therefore, we are developing actions in this direction in the Commitment to Life Program.
EMERGENCY PREPAREDNESS AND RESPONSE

In 2018, we highlight, among other preparatory work and emergency response, the simulation conducted at the Santos Basin Exploration Operations unit, which involved a complex scenario and actions on the field. In addition to the Organizational Response Framework (ORF) and the Local Response Structure, the Business Support Team (BST), consisting of senior management, has been deployed.

HSE MANAGEMENT ASSESSMENT PROGRAM

In order to ensure compliance with the requirements established in the HSE Management System, we rely on the HSE Management Assessment Program. This is a proactive, independent and integrated assessment process, whose results are monitored at critical review meetings with senior management.

Findings identified during assessments are classified as critical, serious, moderate, and mild. Action plans are established, with treatment deadlines that take the degree of criticality into account.

In 2018, 84 assessments were conducted, comprising 306 facilities, 86% of which in the E&P area.

FATAL ACCIDENTS

Despite our efforts in the search for continuous improvement in safety management and culture, we recorded and regretted the occurrence of six fatalities in the year 2018.

In all fatal accidents, our first action was the personal support of the leaderships to the victims’ families. The occurrences were immediately reported to the senior management, initiating the analysis of the extent of the accident and the implementation of emergency actions to prevent any similar occurrence.

We conducted the investigation and analysis process, under the coordination of executive managers and a multidisciplinary team, in order to identify the causes of accidents. We consolidated and disclosed actions to avoid the recurrence of these accidents. The lessons learned are discussed in forums with managers and disseminated to our employees.
Who we are

We are a publicly traded corporation whose motivation is to provide the energy that moves society to fulfill its potential. We operate, through the unique technical capacity of our employees, in exploration and production, refining, natural gas, power, logistics, marketing, oil products distribution, petrochemicals, renewable and fertilizers.

AN INTEGRATED ENERGY COMPANY, THAT EVOLVES WITH SOCIETY, GENERATES HIGH VALUE AND HAS A UNIQUE TECHNICAL CAPABILITY.
Where we are

MAIN EXPLORATION, PRODUCTION, AND REFINING ASSETS

MAIN COUNTRIES WITH ACTIVITIES IN THE WORLD
How we generate value

In our business model, we demonstrate how we use resources and processes to generate value for our stakeholders.

The resources used in our production process, presented in our business model, were classified into six categories according to the International Integrated Reporting Council capital model. Therefore, our capitals represent the inputs and are affected by our activities within the value generating process.

To follow our value generation we have three main metrics, in addition to other indicators throughout the report:

<table>
<thead>
<tr>
<th>PERFORMANCE METRICS</th>
<th>GOAL 2018*</th>
<th>RESULT 2018</th>
<th>GOAL PNG 2019–2023**</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRI (x)</td>
<td>1.00</td>
<td>1.01</td>
<td>Below 1.0 from 2019</td>
</tr>
<tr>
<td>NET DEBT/ADJUSTED EBITDA (x)</td>
<td>2.5</td>
<td>2.34</td>
<td>Below 1.5 in 2020</td>
</tr>
<tr>
<td>ROCE*** (%)</td>
<td>-</td>
<td>8.5</td>
<td>Above 11% in 2020</td>
</tr>
</tbody>
</table>

* Target according to Business and Management Plan 2018–2022.
** Target according to Business and Management Plan 2019–2023.
*** ROCE calculated using Adjusted EBITDA.

For information on our Business Plan and Management, please refer to Strategy and Perspective.

Our human capital
is comprised by our employees working with safety, technical capacity, competence and experience, ethics, accountability and compliance.

Our intelectual capital
is comprised of our recognized technical capacity, development of new technologies, and intellectual property.

Our productive capital
consists of our industrial units and all the infrastructure we use in our productive activity, with emphasis to the platforms, refineries and logistical assets.

Our natural capital
is composed of renewable and non-renewable environmental resources used in or affected by our production process, especially our oil and gas reserves, in addition to water resources, ecosystems and biodiversity.

Our social and relationship capital
is formed by interactions with our stakeholders. These interactions are strengthened through our dialog channels, our social investments and our brand and reputation management initiatives, seeking to strengthen the bonds of trust with society.
Our capitals

Human 18
Intellectual 24
Social and Relationship 32
Natural 44
Productive 52
Financial 56
Human Capital

Our human capital is comprised by our employees working with safety, technical capacity, competence and experience, ethics, accountability and compliance.

Our employees' profile

TOTAL EMPLOYEES AT THE PETROBRAS

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>68,829</td>
<td>51,255</td>
</tr>
<tr>
<td>2017</td>
<td>62,703</td>
<td>46,979</td>
</tr>
<tr>
<td>2018</td>
<td>63,361</td>
<td>47,556</td>
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</table>

HOLDING

TOTAL EMPLOYEES

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>51,255</td>
<td>46,979</td>
</tr>
<tr>
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<td>46,979</td>
<td>47,556</td>
</tr>
<tr>
<td>2018</td>
<td>47,556</td>
<td>47,556</td>
</tr>
</tbody>
</table>

SUBSIDIARIES IN BRAZIL

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>3,638</td>
<td>1,810</td>
</tr>
<tr>
<td>2017</td>
<td>3,850</td>
<td>1,843</td>
</tr>
<tr>
<td>2018</td>
<td>13,935</td>
<td>1,843</td>
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SUBSIDIARIES ABROAD

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<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
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</thead>
<tbody>
<tr>
<td>2016</td>
<td>10,027</td>
<td>5,835</td>
</tr>
<tr>
<td>2017</td>
<td>10,521</td>
<td>5,835</td>
</tr>
<tr>
<td>2018</td>
<td>13,549</td>
<td>5,835</td>
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</table>

MANAGER

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
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<td>5,835</td>
</tr>
<tr>
<td>2018</td>
<td>13,549</td>
<td>5,835</td>
</tr>
</tbody>
</table>

SUPERVISOR

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<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
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<tr>
<td>2017</td>
<td>6,614</td>
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<td>2018</td>
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SPECIALIST

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<thead>
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</thead>
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<tr>
<td>2016</td>
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<td>5,835</td>
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<tr>
<td>2017</td>
<td>4,323</td>
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</tr>
<tr>
<td>2018</td>
<td>5,592</td>
<td>5,835</td>
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CORPORATE FUNCTION

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<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
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</thead>
<tbody>
<tr>
<td>2016</td>
<td>20,630</td>
<td>10,027</td>
</tr>
<tr>
<td>2017</td>
<td>21,155</td>
<td>10,521</td>
</tr>
<tr>
<td>2018</td>
<td>25,132</td>
<td>13,549</td>
</tr>
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</table>

EDUCATION LEVEL

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
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<td>25,132</td>
<td>13,549</td>
</tr>
</tbody>
</table>

POST-GRADUATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
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</thead>
<tbody>
<tr>
<td>2016</td>
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</tr>
<tr>
<td>2018</td>
<td>25,132</td>
<td>13,549</td>
</tr>
</tbody>
</table>

MASTER’S DEGREE

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
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<tr>
<td>2018</td>
<td>25,132</td>
<td>13,549</td>
</tr>
</tbody>
</table>

PHD

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employees</th>
<th>Petrobras Holding</th>
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</thead>
<tbody>
<tr>
<td>2016</td>
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<tr>
<td>2018</td>
<td>25,132</td>
<td>13,549</td>
</tr>
</tbody>
</table>
The focus of our human capital management is to work on strategic topics for the sustainability of the organization, providing the necessary skills for the business continuity and developing managers and employees to leverage our results. We do this by providing people management services and solutions that add value to the company’s results in a proactive and integrated way, aligned with our strategy and best practices in the market.

Therefore, in 2018, we implemented a new management and performance model, restructuring the Human Resources area, which now is called People Management. The main focuses of transformation, besides the workforce adequacy, were career and meritocracy, new work arrangements, optimized work processes and modern technologies, making our human capital more agile and flexible and delivering greater value to the company.

**WORKFORCE ADEQUACY**

The workforce adequacy process is part of a broad analysis of the company’s structure, which is in line with our Business and Management Plan and enables the identification of needs and efficient allocation of our human capital, making the professional profile compatible with the opportunities available. Thus, after planning our personnel needs, we perform the effective adjustment through actions such as promoting programs for voluntary severance (PIDV 2014 and 2016), new hires (Public Selection Processes), and the internal personnel movement program (Mobiliza).

### New hires and dismissals

**TURNOVER PETROBRAS HOLDING**

<table>
<thead>
<tr>
<th>Year</th>
<th>New Hires</th>
<th>Dismissals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>902</td>
<td>300 PIDV 85</td>
</tr>
<tr>
<td>2017</td>
<td>158</td>
<td>4,395 PIDV 4,272</td>
</tr>
<tr>
<td>2016</td>
<td>876</td>
<td>6,444 PIDV 6,262</td>
</tr>
<tr>
<td>2015</td>
<td>244</td>
<td>2,013 PIDV 1,605</td>
</tr>
<tr>
<td>2014</td>
<td>726</td>
<td>4,820 PIDV 4,276</td>
</tr>
</tbody>
</table>

The total amount of employees at Petrobras Holding that have already left the company due to the 2014 and 2016 PIDVs was 16,500 until 31 December 2018. The total severance paid due to the PIDVs was BRL 5.5 billion, with financial return of BRL 19.5 billion in avoided costs until December 2018.

The dismissals through the PIDVs changed the distribution of ranges by time in the company, as well as the age pyramid, thus creating a more balanced professional profile. This new profile is important for our growth in terms of human resources and knowledge management.

**TIME IN THE COMPANY PETROBRAS HOLDING (%)**

<table>
<thead>
<tr>
<th>Year</th>
<th>0 TO 9 YEARS</th>
<th>10 TO 19 YEARS</th>
<th>20 YEARS OR MORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>28</td>
<td>50</td>
<td>22</td>
</tr>
<tr>
<td>2017</td>
<td>37</td>
<td>40</td>
<td>23</td>
</tr>
<tr>
<td>2016</td>
<td>39</td>
<td>33</td>
<td>28</td>
</tr>
<tr>
<td>2015</td>
<td>48</td>
<td>18</td>
<td>34</td>
</tr>
<tr>
<td>2014</td>
<td>50</td>
<td>14</td>
<td>36</td>
</tr>
</tbody>
</table>

After the adjustments to our staff made in recent years, we are conducting occasional adjustments. In 2018, we published a public selection process for secondary education and higher education positions, totaling 108 positions disclosed, in order to adapt our staff to fulfill our goals.
**Mobiliza**

Mobiliza is a continuous program of internal movement of employees, created to adapt the workforce of the units to the company’s needs, seeking to reconcile the interests of the employees. The Mobiliza is exclusively for employees with no managerial duties and generates career development opportunities for employees through mobility.

**OTHER HUMAN CAPITAL MANAGEMENT INITIATIVES**

Based on internal inputs, such as the ambience survey and strategic drivers of the Business and Management Plan, and external inputs (benchmarks, studies, and market survey), we structured our human resources initiatives.

In 2018, we made major strides in the following initiatives:

**Telework**: Our pilot project for remote work (teleworking) was implemented with the target audience being employees in a flexible administrative regime. The adherence is voluntary, provided it is negotiated with the immediate manager of the employee concerned, as well as the definition of the working day schedule, limited to up to three days per week.

Identified as an initiative that provides greater flexibility and quality of life, positively impacting the commitment and satisfaction of employees, we have approximately 800 employees teleworking in the pilot project, on 31 December 2018.

**Working hours’ reduction**: the optional work shift reduction from eight to six hours a day, with proportional reduction of remuneration, brings together company’s and employees’ interests, starting in 2017. This option was provided to employees of the administrative regime, linked to flexible hours and without bonus payment.

In 2018, we implemented the possibility of reducing the weekly workload from five to four days, also with a proportional reduction of remuneration and for employees without bonus payment. This option was also provided to employees with fixed working hours and social workers.

The work shift reduction is not definitive. It is valid for one year and can be renewed automatically for an equal period, if there is no manifestation, to the contrary, from the employee or the immediate manager.

On 31 December 2018, we had 783 employees working under the optional reduced workday regime.

**Career and Remuneration Plan**: we modernized our career plan, with the implementation of the new Career and Remuneration Plan (PCR).

PCR provides a series of criteria to improve the management of people through the enhancement of skills and performance, as well as to stimulate the professional development of employees, enabling them to achieve higher levels of responsibility and, consequently, career development and remuneration.

One of the biggest gains of the PCR is the broad mobility, allowing the company a better management of its needs and staff allocation.

For information on such initiatives, please refer to Intellectual Capital.
Management Succession: The management succession process is done through selection and development of our “talent bank.” We plan the expansion of the scope of the management succession program, proposing solutions that allow the identification of high potentials at different levels of the organization.

In 2018, we implemented the processes to identify and select professionals for management positions, promoting meritocracy and the continuous provision of leadership, encouraging career self-management and valuing the professional career. Selection processes were conducted to fill 267 management positions, covering all areas of the company.

Cultural Transformation: The Culture Management Project aims to promote the cultural changes required to achieve organizational results. This project aims at adapting our organizational culture, starting with the leaderships, in order to align the behaviors of the employees to the strategic, business and management challenges, reinforcing values such as safety, results, efficiency, meritocracy, simplicity and compliance.

The project considers three steps in its strategy: Turning Point Culture, Prosperity Culture, and Sustainability Culture. In its first phase, Turning Point Culture, started in 2017, the effort was directed to leadership.

Throughout 2018, the Cultural Diagnostic Report was developed, an integral part of the second stage of the project, with the main findings of the company’s current culture. The analysis of the findings recorded in the report will allow the development of our Culture Plan, which is an essential content for project continuity.
MAIN BENEFITS GRANTED TO EMPLOYEES

We offer benefits compatible with the size of the company and that seek the valuation of employees. All employees are entitled to the same benefits, regardless of positions or duties. Among the main ones, we highlight the complementary pension plans, the medical assistance and the pharmacy benefit.

Social Security Plans

Until March 2018, we sponsored two complementary pension plans, the Plano Petros do Sistema Petrobras (PPSP), a defined-benefit plan closed to new members, and the Petros-2 Plan, a variable contribution plan, in force and opened since 2007.

From April 2018, the PPSP was split up into two plans: one made up of employees and assistants who adhered to the new rules of the plan in 2006, 2007 and 2012 (PPSP-Renegotiated) and those that did not adhere (PPSP-Not Renegotiated). Together, those plans cover 95% of our employees.

Due to the effects of the PPSP plans on the sponsor and participants, Petrobras, together with Petros, structured a new defined-benefit plan, called the Petros-3 Plan. Such plan shall be open for voluntary migration of participants and beneficiaries as soon as it is approved by competent bodies.

REORGANIZATION OF PETROS PLANS

In 2017, the Plano Petros do Sistema Petrobras underwent an equation plan due to a total deficit of R$ 27.3 billion and is being considered based on the rules established in the deficit adjustment plan (PED). The remaining term for this plan is 17 years and, as of March 2018, has been made through the contribution of extraordinary contributions with the participation of all participants – active, retired and pensioners – and also of the sponsors, in a similar way – Petrobras, Petrobras Distribuidora, and Petros –, according to provisions of law.

At this moment, there are judicial discussions regarding the subject, and there has been suspension of extraordinary contributions for participants benefiting from injunctions, whose merits will still be evaluated and judged. These processes are being handled by the Fundação Petros de Seguridade Social and monitored by Petrobras.

In the year ended December 31, 2018, the company disbursed R$ 607 million (R$ 562 million in the Holding) in contributions referring to the PED.

Health and Pharmacy Benefit Plan

We maintain a supplementary health-care plan, Assistência Multidisciplinar de Saúde (AMS), which provides medical and hospital and dental care services to all active and inactive employees and their dependents, through the participation of employees.

The AMS benefit also offers coverage of complementary programs, such as the Benefício Farmácia program.

The Benefício Farmácia program was reformulated in 2018, and only covered drugs from a predefined list of chronic or psychiatric diseases. By choosing to use the Benefício Farmácia, the beneficiary will be co-participating in the cost, according to the table defined in the Collective-Bargaining Agreement, which takes into account the income of the beneficial owner and the classification of the drug purchased according to its maximum price consumer or disease.

In 2018, the number of beneficiaries was 287,676 between active employees, retired employees, and dependents, with a disbursement of R$ 2.71 billion, being R$ 2.59 billion with AMS and R$ 121.74 million with the Benefício Farmácia. With respect to collection, the total was R$ 699.92 million, of which R$ 677.07 million was collected with co-participations and AMS monthly payments, and R$ 22.86 million collected from Benefício Farmácia beneficiaries.
SAFETY AND HEALTH

Safety

In our Strategic Plan, we stress the value of "respect for life" and due to its importance, this issue is being dealt with in the Safety section.

Health

Our health management is also conducted through the Commitment to Life program, together with the Occupational Risk Prevention program, and the Occupational Health Medical Control and Health Promotion program, in an integrated approach to health, safety, environment, and occupational hygiene.

The planning of actions aimed at health prevention, and promotion is guided by the results obtained from data collected annually in occupational examinations, associated with the characteristics and risks identified in the epidemiological profile of the employees. Also considered in planning, are the emerging problems in the country and in the world, as well as successful practices identified in the market to promote wellness at work. In 2018, about 3% of absences due to health reasons had some relation to work.

LABOR LITIGATION

Despite our efforts on the management of our human capital, we have labor contingencies provisioned in our financial statements.

LABOR LITIGATIONS PROVISIONED

<table>
<thead>
<tr>
<th>Year</th>
<th>Provisioned (R$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>3,995</td>
</tr>
<tr>
<td>2017</td>
<td>4,513</td>
</tr>
<tr>
<td>2018</td>
<td>4,236</td>
</tr>
</tbody>
</table>

LABOR LITIGATIONS NOT PROVISIONED

<table>
<thead>
<tr>
<th>Year</th>
<th>Not Provisioned (R$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>23,547</td>
</tr>
<tr>
<td>2017</td>
<td>23,825</td>
</tr>
<tr>
<td>2018</td>
<td>33,396</td>
</tr>
</tbody>
</table>

Main contingencies provisioned:
(i) individual actions related to a review of the methodology by which the minimum compensation based on an employee’s position and work schedule (Remuneração Mínima por Nível e Regime - RMNR) is calculated;
(ii) lawsuits relating to overtime pay; and
(iii) actions of outsourced employees

RMNR AND ITS DEVELOPMENTS

The Minimum Compensation by Level and Regime (in Portuguese, Remuneração Mínima por Nível e Regime – RMNR) corresponds to minimum compensation values established in specific schedules, based upon the level in salary schedule, work regime, and condition and position’s geographical area. This remuneration policy was created and implemented in 2007, through collective bargaining with the trade union representatives and approved in meetings by employees and was questioned only three years after its implementation. The dispute is around whether or not to include additional work regimens and special conditions of work in the RMNR Complement calculation. In June 2018, the company received an adverse decision in the Superior Labor Court, and the subject is suspended in court by preliminary determination of the Federal Supreme Court until final examination of this matter.

We understand the RMNR respects the remuneration differences of each regime and working condition, and contemplates additional ones provided by law and those provided in Collective Agreement.
Intellectual Capital

Our intellectual capital is comprised of our recognized technical capacity, development of new technologies, and intellectual property.

The expansion of our boundaries, with the production achieved in the pre-salt, is a great milestone, which in 2018 has reached 10 years. It was a conquest achieved by expanding our technical capacity over the years, and that has allowed to overcome challenges and develop technologies that reflect this capital's value.

Knowledge is not only found in documents, books, databases and information systems, but in business processes as well, group practices, and experience accumulated by people. And it is precisely here that the practices of knowledge management enter, a way of mobilizing knowledge through the sharing of practices and experiences.

As part of our knowledge management, we enhance our intellectual capital through the development of people, processes and technologies.

PEOPLE DEVELOPMENT

Training and Development

We have a corporate university, Petrobras University, as part of our structure to implement the development of our human capital through corporate education. The corporate education program seeks the adherence of the training programs to the new strategic positions of the company, and from this, we define the investments destined to the development of people, aiming at maintaining our unique technical capacity. The investments in training conducted by Petrobras University, in other institutions in Brazil and institutions abroad, are below.

INVESTMENTS IN TRAINING

(R$ MILLION)

<table>
<thead>
<tr>
<th>Year</th>
<th>Petrobras University</th>
<th>Brazil</th>
<th>Abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>22</td>
<td>47</td>
<td>7</td>
</tr>
<tr>
<td>2017</td>
<td>11</td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>2018</td>
<td>22</td>
<td>61</td>
<td>29</td>
</tr>
</tbody>
</table>

In 2018, we have invested R$ 112.4 million in the training of our employees, totaling 266.7 thousand participations in training courses for new employees and continuing education in Brazil and abroad, with an average of 53 hours of training per employee in the year, number compatible with market metrics.
In this way, we improve our capacity for critical analysis and innovation, focusing on improving the skills required for our activities, prioritizing critical business knowledge.

**CRITICAL COMPETENCES MAPPED IN PNG 2019 - 2023 AND PE 2040**

**E&P**
- Partnership and shared operations agreements management
- Active portfolio management
- Technological challenges
- Assets’ Decommissioning

**RGN**
- Expansion of trading activities
- Active portfolio management
- Business Development
- Competence Development to Global Gas Market

**DP&T**
- Technological Innovation Prospecting
- Large projects’ management
- Decommissioning of wells and subsea systems

**CORPORATE AREAS**
- Service culture
- People service
- Development of leaders and experts
- Relationship with stakeholders

**TRANSVERSAL CRITICAL CAPABILITIES**
- Management and leadership
- Technology and digital transformation
- International performance development
- Negotiation

In order to reach the critical competencies, we have structured 45 development paths, which are guides so that managers can assertively identify the training actions to be applied to their teams. Based on them, each employee must track their individual development plan. Thus, we map out the real needs of each area, in a way that is aligned with the long-term corporate strategy and with a focus on self-development.

In addition, other initiatives to ensure the developments of our human capital have been implemented:

- **Knowledge Certification**: we implemented the knowledge certification process, creating mechanisms to verify which employees have critical knowledge for our business, allowing us to assess the employees’ level of readiness for the challenges that our company faces.

- **Technical-Educational Service**: an initiative that brings Petrobras University closer to the operational areas, reinforcing its role in generating value for the company’s units. During this process, Petrobras University technicians work together with the units in the resolution of technical and management issues, with the objective of applying the knowledge generated in the elaboration or updating of development actions.

- **Corporate Education Innovation and Digital Transformation Workshop and Exhibition**: the workshop was aimed at discussing the potential of advances in digital technologies, such as virtual and augmented reality; remote presence, and adaptive learning, in improving the efficiency and effectiveness of corporate education. As a result, 12 pilot projects were detailed for the deployment of selected technologies throughout 2019. The event was attended by external exhibitors of educational technologies, in addition to our professionals.

In order to implement knowledge trails, we rely on the project of innovation and digital transformation in corporate education. Therefore, we have increased the use of new educational technologies, expanding the offers in new modes of development and knowledge sharing, such as distance learning courses; video conferencing; virtual and augmented reality; adaptive learning; and telepresence robots, as well as on-the-job training, mentoring, coaching, practice communities, and more.

For more information about our employees, please refer to Human Capital and Sustainability 2018.
KNOWLEDGE AND INFORMATION SHARING

CONCECTE
It is our collaborative network with the objective of stimulating the sharing of information and knowledge through the creation of communities that allow the work organization in teams or the structuring of projects.

COMMUNITIES OF PRACTICES
An organizational approach that consists of formation groups from the same area of knowledge, so that those groups may meet in person or virtually to share experiences, ideas, practices and lessons learned for solving problems.

PETROBRAS MENTORING PROGRAM
Mentoring is a structured relationship of development between an employee with more experience within the company and a less experienced one, focusing on the sharing the “Petrobras knowledge,” that is, technical skills, culture, values and relationship networks.

COACHING
Knowledge management practice that aims to welcome, integrate and accompany the newly arrived employee to the management or that identified for requalification, providing the formation of safe behavior (Commitment to Life), adaptation to culture and organizational values, the work environment and training for professional activity.

INTEGRATED PROCESSING AND STANDARDIZATION SYSTEM (SINPEP)
The purpose of SINPEP is to disclose our policies, guidelines and procedures, providing employees with a standard management and query mechanism in a single system that presents all the standards associated with deployed processes of the value chain.

> 63,000
ACTIVE PROFILES
AND MORE THAN

> 3.5 million
OF ACCESSES IN 2018.

> 24
ACTIVE COMMUNITIES OF PRACTICES
WITH PARTICIPATION APPROXIMATELY

> 19,000
MEMBERS

> 152
EMPLOYEES INVOLVED

> 904
COACHING SESSIONS CONDUCTED IN 2018

> 40
MACROPROCESSES
AND APPROXIMATELY

> 1,900
MAPPED PROCESSES
APPROXIMATELY

> 36,000
ACTIVE PATTERNS
**PROCESSES**

**“Simplifica Petrobras” Program**

The “Simplifica Petrobras” Program, created in 2016, aimed at reducing bureaucratic processes and providing agility in decision making without compromising compliance and safety. Its expected gain was the increase of productivity through the simplification of processes. During its term, it was formed by projects from different areas, resulting in over 200 revised processes, achieving benefits such as: man-hour reduction in process execution, shorter delivery of service solutions, reduction of procedural deadlines, reduction of operating costs, anticipation of revenues, scanning and automation of reports and improvements in the decision-making process.

Beginning in October 2018, the Simplifica Petrobras ceased to be a program, becoming an organizational structure with the main objective of perpetuating the culture of simplification through the implementation of a permanent system for capturing and implementing ideas to the entire company.

**RESEARCH, DEVELOPMENT, AND INNOVATION**

Innovation and technological development are the pillars of our activities. The year 2018 was marked by the construction of a technological management process increasingly focused on disruptive content and digital transformation in Research, Development and Innovation (RD&I) projects, without neglecting the short-term activities that generate value to the company and contribute to the sustainable development of the company.

**DIGITAL TRANSFORMATION**

The strategic digital transformation initiative of our Business and Management Plan aims to prepare for a competitive environment that is increasingly being influenced by digital technologies and a new way of working, based on collaboration. The possibilities of transforming operational and business models bring opportunities to increase the efficiency and safety of operations, reduce charges and bring more robustness and agility to decisions. The efforts go beyond the implementation of technological solutions, seeking to implement as well, a culture of innovation that promotes experimentation, multifunctional collaboration, and shared information.

Considering the importance we give to this transformation and aligned with the trends of the big world companies, in 2018, we created an organizational structure dedicated to the process of digital transformation, which has the necessary strategic characteristics so that the unfolding of the initiative permeates every point of our company. In addition to preparing guidelines, this structure will work in partnership with the other areas and will be responsible for the realization of high-return digital projects with wide internal diffusion, and for the acceleration of enabling the activities in all processes that make this journey feasible.

For more information about digital transformation please refer to Risks and Opportunities and Sustainability 2018
The projects and investments in RD&I add value to our intellectual capital, contributing to the profitability of our businesses and to the technological advancement of the oil and gas sector.

**RD&I INVESTMENT**

(R$ Million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Investment (R$ Million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>2,349</td>
</tr>
<tr>
<td>2017</td>
<td>1,831</td>
</tr>
<tr>
<td>2016</td>
<td>1,826</td>
</tr>
</tbody>
</table>

- In 2018, investments 28% higher than 2017, mainly due to the greater investment to fulfill the legal obligations of research and development (ANP and ANEEL).
- Today, approximately 27% of our RD&I portfolio incorporates digital technologies, such as Big Data, High-Performance Computing and Artificial Intelligence, in the search for technological solutions to support business development.

Our RD&I activities are coordinated by our Research and Development Center Leopoldo Américo Miguez de Mello (Cenpes), whose objective is to develop technologies to enable our Business and Management Plan, as well as to anticipate trends and invest in technological routes aligned with our Strategic Planning. For this, Cenpes has 1,300 employees, of whom 90% are dedicated exclusively to the RD&I area.

For more information on our partnerships with academic institutions, please refer to Sustainability 2018.

For more information about our technology partnerships, please refer to Social and Relationship Capital.

We maintain several partnerships focused on the development of technologies to meet the challenges of our operations.

**TECHNOLOGIES AND GAINS**

The RD&I project portfolio is based on our technological focus, which consists of our strategic choices in technology.

**Technology Focus 2018**

- Process safety, integrity, and reliability of plant and equipment
- Protection of company’s value in matters involving environment and society
- Opening new exploratory frontiers
- Reducing the investment decisions risks related to reservoir uncertainty
- Increased reservoir recovery factor
- Reduced equilibrium oil price and operating cost
- Decommissioning assets
- Flexibility of downstream productive chain
- Adding value to downstream products
- Optimization of productive processes and efficient energy use
- Integration and optimization of the logistics chain
- Transition to low carbon matrix
Some of the main technological solutions and results in 2018, the result of our investments in people, processes and technology, were:

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>IMPACT</th>
<th>ADDED VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pioneering operation of fouling inhibitor injection in the Santos Basin pre-salt pole</td>
<td>Prevention of production losses in the pre-salt of approximately 15,000 bpd.</td>
<td>Earnings of US$ 1 million a day, per well, to avoid business interruption.</td>
</tr>
<tr>
<td>Computational methodology for obtaining values of properties of reservoir rocks (Digital Rock Technology)</td>
<td>Anticipation of development of oil fields.</td>
<td>Reservoir rocks properties result 12 months earlier</td>
</tr>
<tr>
<td>Helical-Axial Submarine Pump (BMSHA) of Barracuda</td>
<td>The pump operation, without fail for 6 years, allowed cumulative production of more than four million barrels of oil equivalent in the period</td>
<td>Study shows margin gains between US$ 0.5 and US$ 2.0/bbl, without subsidies, in one of our refining processes</td>
</tr>
<tr>
<td>Bio-oil co-processing technology in refining</td>
<td>70% reduction in CO₂ emissions in fuels produced with bio-oil</td>
<td>Guarantee of service to a market whose turnover is approximately R$ 4.7 billion/year.</td>
</tr>
<tr>
<td>Computational tool (SimCAP)</td>
<td>Evaluation of pre-salt oils to be used for the production of petroleum asphalt cement</td>
<td>Estimated savings of R$ 83 million over the next 2 years</td>
</tr>
<tr>
<td>Qualification of metal tubes coated with composite materials, for use in water and gas injector wells, as an alternative to superduplex steel.</td>
<td>Reduction of acquisition costs and delivery time, as well as greater local content</td>
<td>Estimated savings of R$ 33 thousand per well</td>
</tr>
<tr>
<td>New test procedure for Blow Out Preventer (BOP), equipment that prevents spills in oil wells.</td>
<td>Reduction of BOP test duration by 12 hours per event</td>
<td>Reduction of cost of approximately R$ 350 thousand per FPSO each year</td>
</tr>
<tr>
<td>Qualification of bentonite pellets as an alternative barrier to cement</td>
<td>Reduction of costs in abandonment operations of 11,500 wells</td>
<td>It will avoid losses of approximately US$ 37 million/year</td>
</tr>
<tr>
<td>Prototype Robot for application to painting on large flat and vertical surfaces on the sea</td>
<td>80% reduction in cost, 84% in painting service duration and 88% reduction in human exposure to risk</td>
<td>Avoided losses of approximately US$ 2.85 million/day</td>
</tr>
<tr>
<td>Discovery of the acid formation mechanism in pre-salt oils</td>
<td>Reduction of corrosion on top of distillation towers</td>
<td></td>
</tr>
<tr>
<td>Use of drones to inspect P-62’s flare</td>
<td>Prevents unplanned platform shutdown</td>
<td></td>
</tr>
</tbody>
</table>
By the end of 2018, we held a total of 443 active patents in Brazil and 1,047 active patents abroad.
AWARDS AND RECOGNITION

In 2018, the constant search for overcoming challenges led to recognition in several areas of activity. As a result of the recognition of our intellectual capital, we highlight some awards received:

Transparency Trophy 2018, granted by the National Association of Executives of Finance, Management and Accounting (Anefac). We were recognized for the second consecutive year by the quality of our financial statements.

Abrasca Annual Report Award, granted by the Brazilian Association of Public Companies (Abrasca), for the quality of content and clarity of information in our Integrated Report.

IG-SEST, a governance indicator prepared by the State Enterprises Coordination and Governance Secretariat (Sest). We obtained the maximum grade in the 2nd and 3rd cycles of evaluation.

Recognition for the quality of internal audit processes granted by the Institute of Internal Auditors of Brazil (IIA Brasil), through an international certificate attesting the quality of our internal audit processes.

Compliance On Top, where our Chief Executive Officer for Governance and Compliance was appointed as one of the top 20 compliance leaders in companies most admired for his work.

Top of Mind Award, granted by the Folha de São Paulo newspaper. Petrobras and lubricant Lubrax won in three categories: Petrobras won as “Brand representing Brazil”; our fuel was nominated for the 15th time as the best in the Brazilian market; and Lubrax won as “Best Lubricant.”

Institutional Investor Award which recognized our performance in investor relations in four of the seven categories: CEO, CFO, Best RI Staff and professional. In addition, the company was recognized by the Environment, Social & Governance metrics (ESG).

Deals of the Year Award, awarded by the Latin American magazine LatinFinance, acknowledging the financial institutions and operations conducted in Latin American and Caribbean markets in 2018. We won in three categories: “Best Corporate Debt Management Operation of the Year,” “Issuing Company of the Year,” and “Syndicated Loan of the Year.”

Golden Tombstone Award, by the Brazilian Institute of Finance Executives. We were awarded in the “Best Financial Operation of the Year” and “Debt” categories for the same operation.

Value Innovation Brazil 2018, organized by Valor Econômico newspaper. We were awarded, for the third consecutive time, the third place as the most innovative company throughout the country, among 150 participants, and first in the Oil & Gas category, in recognition to the development of innovative technologies for the offshore segment.

Olympus Challenge Award for Production Optimization, granted by the Dutch Center for Technology and Applied Research and the European Association of Geoscientists and Engineers, to the ICARO (Intensive Computer-Aided Reservoir Optimization) system developed by Petrobras.

Human Rights Award 2018, granted by the Ministry of Human Rights, received by our relevant action for the promotion and defense of human rights.

Certified Citizen Company granted by the Regional Accounting Council of the State of Rio de Janeiro, for the social, environmental and accounting information presented in the tax year report 2017.

Os Melhores (The Best) Award, by the O Estado de São Paulo (Estadão) newspaper. Our subsidiary Petrobras Distribuidora won in the category “Best Fuel Oil” for the Lubrax lubricant. In addition, it was awarded by Exame Magazine with the “Best and Biggest” award, in the “Wholesale” category.

Empresas Mais 2018 Award, granted by the newspaper O Estado de São Paulo. Petrobras Distribuidora won the general category of Corporate Governance and had its Board of Directors also recognized.

Época Reclame Aqui Award – The Best Companies for the Consumer. Petrobras Distribuidora was the winner in the category “Distributor/Service Stations,” with the recognition of excellence service provided to the consumer.
Social and Relationship Capital

Our social and relationship capital is formed by interactions with our stakeholders. These interactions are strengthened through our dialog channels, our social investments and our brand and reputation management initiatives, seeking to strengthen the bonds of trust with society.

Our relationship network is organized in 13 stakeholders.

Featured stakeholders were addressed in this report. For other stakeholders, please refer to Sustainability 2018.
INVESTORS

We are present on the stock exchanges of São Paulo, New York, Madrid and Buenos Aires, where we relate to over 600 thousand investors. Of these, around 300 thousand trade their shares in Brazil and 100 thousand abroad. The other investors participate through stock funds.

In 2018, we interacted with investors and market analysts, mainly through meetings (530 one-on-one or group meetings at conferences and roadshows) and Executive Board Officers' presentations for investors (Petrobras Day) in São Paulo, London, and New York. We disclosed our annual reports (Integrated Report, Form 20-F and Formulário de Referência) and about 250 notices, material facts and clarifications of news, in addition to the other information available on our investor relations website, which obtained a monthly average of 81 thousand hits. We also held eight teleconferences/webcasts and three shareholders' meetings during the year. In addition, we liaised with risk rating agencies through periodic meetings.

We also maintain relationships with national and international commercial banks, multilateral agencies, export credit agencies and national development banks, such as the BNDES, which, on December 31, 2018, accounted for 49% of our gross debt.

In addition, we also deal with fixed income investors in Brazil and abroad who hold our debt securities, which on December 31, 2018 represented 51% of our gross debt.

For more information on the profile of our shareholders and our debt, please refer to Financial Capital.

For information on lawsuits filed by our shareholders, please refer to Governance and Compliance and Financial Statements (explanatory note 31.4).
Petrobras’ main clients are buyers of crude oil, natural gas, energy, liquid oil products and fertilizers.

Crude oil is sold mainly through long-term contracts and also in the spot market. Our portfolio overseas includes approximately 60 clients: refiners which have already processed or process Brazilian oils regularly, distributed throughout the Americas, Europe, China, and Asia.

Natural gas is marketed to 21 clients, 19 of which are distributors, and two are free consumers (two thermoelectric plants). The total demand for natural gas includes the non-thermoelectric, thermoelectric, diesel and fertilizer segments of Petrobras, as well as the consumption by natural-gas carriers contracted by Petrobras for the provision of transportation services.

With regard to liquid oil products and fertilizers, in Brazil, we relate with around 500 clients, seven of which account for about 73% of the total volume sold.

We operate in the energy segment in the regulated market (energy distributors) and free (marketers and free consumers/large consumers). We have 142 clients, 41 of which are distributors, 48 are marketing companies, and 53 are free consumers. All contracts are registered at the Electricity Trading Chamber (CCEE), a sector agent responsible for the settlement and accounting of these contracts.

For more information on natural gas demand, please refer to Business Performance.
The sale of oil products and biofuels to the distribution companies is done by contracts executed in accordance with ANP regulations.

We offer a virtual commercial platform, called “Canal Cliente,” to domestic market companies. The channel works 24 hours a day, seven days a week. In this online environment, clients can place product orders, schedule withdrawals, and track the entire business process up to payment.

In the oil products’ market, through our subsidiary Petrobras Distribuidora, we relate, among others, to 16,000 consumer clients, of which 6,200 are large consumers and 46 airlines, as well as retailers in the retail market, through 7,665 service and 313 Transporters-Retailers (TRRs), which provide a basis for the distribution of fuels, and which, in turn, serve final consumers.

**LINES OF CUSTOMIZED FUELS**

We are constantly improving product quality, aligned to the demands of our clients. We supply to the national market a line of customized fuels to meet specific needs, such as calibration of new engines; application in the first tank filling; compliance with the official engine type approval tests; and formulation directed to competition engines, items with great strategic value for Petrobras and with high economic return. The development and production of these fuels allow the company to know closely where the future of the automotive market is going and how it can affect our business, besides contributing to the strengthening of the national automotive engineering.

**SUPPLIERS**

In 2018, we signed agreements with approximately 12,700 suppliers through Petrobras Holding.

In line with best practices in compliance and with national and international anti-corruption laws, we have improved our contractor management process with the objective of mitigating potential risks of corruption in contracting goods and services. Since 2015, companies interested in doing business with us are subjected to the Integrity Due Diligence (IDD) process. In 2018, 4,651 companies were evaluated within the scope of IDD (19,792 since the beginning of the process) and received the classification of their Integrity Risk Level, which can vary between high, medium and low.

Our contractors must comply with our Social Responsibility Policy, safety, environmental and health standards and guidelines on policies and procedures to prevent corruption, through our Code of Ethics and Conduct.

**SUPPLIER CHANNELS**

**SUPPLY CHANNEL**

canalfornecedor.petrobras.com.br

**PETROBRAS E-PURCHASE PORTFOLIO (PETRONECT)**

www.petronect.com.br

**REGISTRATION CALL CENTER**

4020-9876 (opção 4): Capitais, regiões metropolitanas e ligações originadas de telefone celular  0800 282 8484 (opção 4): Demais regiões  1 866 791 9432: Estados Unidos  1 713 808 2599: Outros países

Contact Us (for registration system users): Technical Support through Petronect Portal contractor registration internal area. Video Remote Support: it must be scheduled through Contact Us or via the phones above.

For more information on Integrity Due Diligence and Integrity Risk Level, please refer to Compliance and Internal Controls.

For more information about our suppliers, please refer to Sustainability 2018.
Our undisputed knowledge in exploration and production in deep and ultra-deep waters, as well as the pioneering introduction of new technologies, allow the execution of several partnerships.

We believe that working in partnership brings benefits by sharing risks, increasing investment capacity, technical and/or technological exchange, strengthening corporate governance and improving our financial capability.

In 2018, we highlight the following partnerships*:

**EQUINOR**
- Technical agreement to increase the recoverable volume of oil in the Roncador field;
- Agreement for sharing gas export infrastructure;
- Assignment of rights in the Roncador field; and
- Heads of Agreement in the offshore wind energy segment in Brazil.

**TOTAL**
- Collaboration agreement in the upstream and downstream segments and technological cooperation in the areas of operation, research and technology;
- Assignment of rights in the Iara and Lapa field concession area, with an option to sell the remaining of our participation (10%), already exercised;
- Heads of Agreement and Investment Agreement in onshore solar and wind energy.

**MURPHY**
- Partnership to operate in the Gulf of Mexico with the formation of a joint venture.

**CNPC**
- Letter of Intent and Integrated Agreement for Business Model, for investments in the Comperj refinery and in the Marlim cluster.

*Partnerships with CNPC, Equinor (renewable segment) and Total Group (renewable segment) are in progress, and completion of these operations is subject to internal and external approvals.*
Additionally, in the first half of 2018, we launched competitive processes to form partnerships in the refineries of the Northeast and South of Brazil. In July 2018, those processes were suspended by judicial decision until January 2019. Additional studies are in progress to enable those partnerships.

In the activities of natural gas, petrochemicals and electric power we operate with interests in companies and assets, such as gas carriers and distributors Braskem petrochemicals and some thermolectric plants. We also hold interests in companies in the sector of biofuels through our wholly-owned subsidiary Petrobras Biofuel.

We also signed with McLaren, a sponsorship agreement for our return to Formula 1, including a technical partnership for product development.

We also maintain partnerships with academic institutions in Brazil and abroad and with the main contractors of the oil and gas chain, who support us in the development and delivery of technological solutions and technical-scientific support.

As we operate in several segments of the oil and natural-gas sectors in Brazil, we face different types of competition.

In the exploration and production segment, we deal with several competitors when we participate in bidding procedures conducted by the National Petroleum, Natural Gas and Biofuels Agency.

In the trading of oil products in the domestic market, we face competition from importers, formulators, other domestic producers and petrochemical plants. In 2018, our participation in the diesel and gasoline markets increased, after the strong performance of the importers in 2017. It is worth mentioning that for gasoline, demand also suffers competition from substitute product, ethanol, which showed significant sales growth in 2018.

In the commercialization of natural gas, we have as competitors, importers and domestic producers, who can directly sell their product to the distributors or thermolectric plants. We expect an increase in competition due to the new regulation under discussion, which aims to improve the regulatory framework of the natural-gas sector and seek to establish the guidelines for a new market design that allows the entry of new agents in the sector, promoting competition.

The natural-gas distribution segment consists of a monopoly, as provided for in the Brazilian Federal Constitution, which can only be exercised through the concession of the public power of each state. We operate through indirect participation in state companies, where each distributor has the monopoly of its concession area, and there is no competition in this segment.

The transportation of natural gas also consists of a monopoly from the government with no competition since the area of activity of the carriers is divided in the national territory by region.

In the energy segment, we operate in generation and sale. In generation, we have as competitors, third-party thermolectric plants, as well as other generators with other energy sources (hydro, wind, solar). In the case of commercialization, we have as competitors, other energy marketers.

All our activities are conducted in compliance with our Code of Conduct for Competitions, which guides our commitment to strict compliance with Brazilian antitrust or antitrust laws and the foreign jurisdictions in which we conduct business.
The relationship with public authorities entities must be conducted in an ethical, transparent and impersonal manner, and involve more than one member of the employees during the in-person interactions with political agents.

The Federal Government is our controlling shareholder, which means we have a specific relationship with it, including being monitored by control bodies, such as the Federal Court of Accounts (TCU) and the Federal Comptroller’s Office (CGU) and interaction with government agencies, such as the Secretariat of Coordination and Governance of State Enterprises (Sest), Ministry of Mines and Energy, National Treasury, among others.

As a mixed capital company, we can have our activities guided by the Federal Government, with the purpose of contributing to the public interest that justified our creation. However, the contribution to this public interest must be compatible with our corporate purpose and market conditions and cannot jeopardize our profitability and financial sustainability. Therefore, if the public interest service is provided under conditions different from those of any other private sector company operating in the same market, as explained in our bylaws, the obligations or liabilities assumed should be defined as a standard or regulation and be foreseen in specific document, such as a contract or agreement, observing the wide publicity of these instruments, as well as the disclosure of their detailed costs and revenues, including the accounting plan. In this case, for the commitments entered after the definition of public interest in the Bylaws, the Union will compensate us, in each fiscal year, for the difference between market conditions and the operating result or economic return of the assumed obligation.

In addition, we also liaise with agencies and regulators related to our activities, such as the National Oil, Natural Gas and Biofuels Agency (ANP), the National Electric Energy Agency (Aneel), the Brazilian Institute of Environment and Natural Resources (Ibama), the National Environment Council (Conama) and the Securities and Exchange Commission (CVM), with the commitment to provide information, in a transparent and reliable way, that allows the correct assessment of the issues inherent to our business.

For more information on changes to our Bylaws for governance improvements, please refer to Governance and Compliance. For more information on public interest, please refer to Reference Form (item 7.1.a), available on our website: www.petrobras.com.br/ri.
**TAX STRATEGY**

We exercise the tax duties with adherence to national and international tax regulations and laws, evaluating the management of tax risks and contributing to increase the development of Brazil, within the context of a corporate society modifying the socioeconomic environment in which we are inserted.

We also seek to maintain an ethical and transparent relationship with the society, promoting development within the regions we operate, considering we are the largest contributors in the country, and our activities have a significant impact on the collection of taxes managed by federal, state and municipal tax authorities, as well as in the collection of governmental participations related to the oil industry, handled by the ANP.

**TAX PAYMENTS** (R$ BILLION)

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICMS</td>
<td>37.3</td>
<td>35.0</td>
<td>45.3</td>
</tr>
<tr>
<td>PIS/Cofins</td>
<td>20.9</td>
<td>27.4</td>
<td>38.1</td>
</tr>
<tr>
<td>Royalties</td>
<td>9.7</td>
<td>12.4</td>
<td>17.8</td>
</tr>
<tr>
<td>Special participation</td>
<td>4.5</td>
<td>11.0</td>
<td>20.4</td>
</tr>
<tr>
<td>IRPJ/CSSLL</td>
<td>-</td>
<td>0.4</td>
<td>8.2</td>
</tr>
<tr>
<td>Cide</td>
<td>5.1</td>
<td>4.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Social security contributions</td>
<td>4.6</td>
<td>4.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Other taxes and contributions</td>
<td>3.8</td>
<td>6.4</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>85.9</td>
<td>101.4</td>
<td>145.3</td>
</tr>
</tbody>
</table>

**THIRD-PARTY TAXES WITHHELD**

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICMS tax substitution</td>
<td>28.2</td>
<td>28.4</td>
<td>27.1</td>
</tr>
<tr>
<td>Withholding Act no. 10.833</td>
<td>5.9</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>Other taxes and contributions</td>
<td>5.6</td>
<td>4.9</td>
<td>4.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>39.7</td>
<td>38.7</td>
<td>37.1</td>
</tr>
</tbody>
</table>

**TOTAL TAXES PAID DOMESTICALLY**

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Federal Government (including Government Participation)</strong></td>
<td>R$ 109.0 bilhões</td>
<td>R$ 72.4 bilhões</td>
<td>R$ 1.0 bilhão</td>
</tr>
<tr>
<td><strong>States</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Municipalities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TAX LITIGATION**

Despite our efforts and diligence in the determination and payment of taxes, there are judicial disputes relating to our tax liabilities, partially provisioned, when it is possible to estimate the losses considered probable, or not accrued, but disclosed in the notes to the financial statements when the expectation of loss is considered possible.

**PROVISIONED TAX CONTINGENCIES (R$ MILLION)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Provisioned Contingencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>4,981</td>
</tr>
<tr>
<td>2017</td>
<td>4,065</td>
</tr>
<tr>
<td>2018</td>
<td>1,901</td>
</tr>
</tbody>
</table>

**TAX CONTINGENCIES NOT PROVISIONED (R$ MILLION)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Tax Contingencies Not Provisioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>155,882</td>
</tr>
<tr>
<td>2017</td>
<td>129,466</td>
</tr>
<tr>
<td>2018</td>
<td>144,211</td>
</tr>
</tbody>
</table>

In 2018, following the current process of governance and cost-benefit analysis, we joined state amnesty and referral programs (Tocantins, Rio Grande do Norte, Sergipe and Mato Grosso) for cash payment of ICMS debits, which represented 32% of debts involved, especially by reducing interest and fines. Consequently, we recognize as tax expenses the total of R$ 1,120 million.

* Taxes paid by Petrobras parent company, on a cash basis. The added value distributed to the State and society, of R$ 154.5 billion, presented in our Business Model, considers the annual tax obligations Petrobras on the accrual basis.

For more information on state amnesty and remission programs and tax contingencies, please refer to Financial Statements (explanatory notes 21.2 and 31).

For more information on relationships with other stakeholders, please refer to Sustainability 2018.
MAIN COMMUNICATION CHANNELS

We relate in a digital or personal manner with our stakeholders, seeking constant improvement of our communication to enable a constructive and transparent dialogue. In addition to the channels already mentioned, we highlight the following:

**www.petrobras.com.br**

**www.petrobras.com.br/anticorrupcao**

**facebook.com/petrobras**

**twitter.com/petrobras**

**instagram.com/petrobras**

**linkedin.com/company/petrobras**

**petrobras.com.br/fatos-e-dados**

**youtube.com/petrobras**

**medium.com/petrobras**

**SAC Petrobras 0800 728 9001**

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**OMBUDSMAN CHANNEL**

- Independent Reporting Channel: https://www.contatoseguro.com.br/petrobras
- Contact the Ombudsman: https://ouvidoria.petrobras.com.br/portal/ouvidoria/pt_br/faile-com-a-ouvidoria/faile-com-a-ouvidoria-1.htm
- Service counters distributed in our units: http://transparencia.petrobras.com.br/servico-informacao-cidadao/balcao-atendimento
- **0800 282 8280**

**REPORTS RECEIVED**

<table>
<thead>
<tr>
<th>Year</th>
<th>Report - Fraud and Corruption</th>
<th>Report - Other Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>1,295</td>
<td>1,225</td>
</tr>
<tr>
<td>2017</td>
<td>995</td>
<td>1,428</td>
</tr>
<tr>
<td>2018</td>
<td>782</td>
<td>1,614</td>
</tr>
</tbody>
</table>

In 2018, we received a total of 19,370 lawsuits, of which 2,396 were reports. Of these, 33% were about fraud and corruption.

We also provide a Citizen Information Service, to comply with the Access to Information Law, which guarantees access to our non-confidential information to any citizen.

For information on the Ombudsperson and Citizen Information Service, please refer to Sustainability 2018.
CULTURAL, SPORTS, AND SOCIO-ENVIRONMENTAL INVESTMENT

Our sponsorship management aligns our portfolio of projects with Petrobras’ strategic objectives. Through the Petrobras Cultural Program, the Petrobras Sports Program and the Business, Science and Technology Sponsorship Program, we generate a positive association with our brand and approach our audiences. These sponsors focus upon the areas in which we identify the best possibilities of brand return and image and reputation strengthening.

We strengthen our work with communities, third sector institutions, government and universities through the Petrobras Socio-Environmental Program. This initiative contributes to the preservation of the environment and to the improvement of living conditions in the places where we operate and, in an extended way, to the society. The program is in line with our Social Responsibility Policy, which advocates a commitment to provide energy, respecting human rights and the environment, liaising responsibly with communities and overcoming sustainability challenges.

CULTURAL, SPORTS, AND SOCIO-ENVIRONMENTAL INVESTMENT
(R$ MILLION)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cultural and Sports Sponsorships and Business, Science and Technology Events</th>
<th>Sponsorships and Socio-Environmental Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>82</td>
<td>60</td>
</tr>
<tr>
<td>2018</td>
<td>133</td>
<td>87</td>
</tr>
</tbody>
</table>

* Starting in 2018, we began publishing the values of sponsorships for business, science and technology events.

For more information on our social and environmental investments, please refer to Sustainability 2018.
ADVERTISING

In 2018, two main advertising campaigns were conducted with the aim of contributing to the recovery of the company’s reliability, image, and reputation indicators: the “Confiança” campaign, which had the role of reporting to Brazilians, presenting the anti-corruption measures implemented, and the “Vamos Inventar? “A Journey through Knowledge” campaign, begun at the end of 2017, which aimed at contributing to the repositioning process of the brand.

In addition to these two campaigns, we highlight the effort to clarify the alignment of our prices with international prices.

ADVERTISING EXPENDITURES ***
(R$ MILLION)

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>143</td>
</tr>
<tr>
<td>2017</td>
<td>170</td>
</tr>
<tr>
<td>2018</td>
<td>121</td>
</tr>
</tbody>
</table>

*Data referring to advertising values published in each of the years, including the purchase of media spaces and the production of advertising materials.

**Values corresponding to 2018 may vary after the end of the relevant period. Because of this verification, amounts from former years may differ from those previously disclosed.
Since we are an integrated energy company focusing on oil and gas, we use natural resources and we impact the ecosystem during our activities.

Our natural capital is composed of renewable and non-renewable environmental resources used in or affected by our production process, especially our oil and gas reserves, in addition to water resources, ecosystems and biodiversity.

- **Natural Capital**
  - **Main Natural Resources Used/To Be Used**
    - Oil, Condensate, and Natural-Gas Reserves: 2017: 947,645 TJ, 2018: 852,600 TJ
    - Water: 2017: 177.7 MILLIONS M³, 2018: 182.3 MILLIONS M³
  - **Main Impacts**
    - Biodiversity and Ecosystems: 2017: 20, 2018: 31
    - Effluents: 2017: 293.2 MILLIONS M³, 2018: 289.1 MILLIONS M³
    - Spills: 2017: 35.8 M³, 2018: 18.5 M³

* According to SEC criteria.
RESOURCES USED/TO BE USED

Oil and Natural Gas

Brazil is the focus of our oil exploration and production operation. Our portfolio is concentrated in the Southeast region, with most of the oil reserves located in deep and ultra-deep water fields, in the Campos, Santos, and Espírito Santo basins. We also operate in onshore and shallow water fields.

Considering Petrobras' exclusively rights, we can explore and produce oil and gas in Brazil in an area of 72,852 km².

Pre-salt Polygon

The pre-salt polygon, region in which new exploratory areas can only be granted in the production sharing regime, occupies an area of approximately 146.7 thousand km² (36.26 million acres), of which we have exploration and production rights on approximately 18% of the total area (approximately 26.5 thousand km² or 6.55 million acres).
In Brazil, the Government is the owner of the oil, but it can be extracted by companies or consortiums upon several payment forms, such as royalties, that vary due to the applied regulatory model. Biddings rounds held by ANP are the main process for the acquisition of rights over the exploratory blocks.

The concession model fully governed the oil and natural gas exploration and production until 2010, when laws instituting the Transfer of Rights Agreement and Production Sharing Regime in the Pre-salt Polygon were enacted.

Currently, our main production fields follow the concession regime. On the other hand, those under the Transfer of Rights Agreement and Production Sharing Regime will represent a large part of our production in the medium and long term.

**NEGOITIATING THE TRANSFER OF RIGHTS AGREEMENT**

The Transfer of Rights Agreement signed between Petrobras and the Federal Government is governed by Law No. 12.276, of June 30, 2010. It regulates the transfer of the oil and natural gas exploration and production rights in specific pre-salt areas to Petrobras and establishes provisions such as:

- Volume that can be extracted in these areas, up to 5 billion barrels of oil equivalent;
- Price paid for the Transfer of Rights Agreement;
- Term of the agreement and percentage of local content;
- Provisions that define a later revision on the following items: value, maximum volume, term and percentage of local content.

As a counterpart to the right of exploration and production, Petrobras paid the Federal Government the amount of R$ 74.808 billion, which in 2018 is recorded in its property, plant and equipment.

The Transfer of Rights Agreement defined that the revision of its clauses of value, maximum volume to be produced, the term of validity and minimum percentages of local content could occur after the first declaration of area's commercial feasibility. Petrobras has already declared commercial feasibility in fields of all six blocks provided for in the contract: Franco (Búzios), Florim (Itapu), Nordeste de Tupi (Sépia), Entorno de Iara (Norte de Berbigião, Sul de Berbigião, Norte de Sururu, Sul de Sururu, Atapu), Sul de Guará (Sul de Sapinhoá) and Sul de Tupi (Sul de Lula),

With the volume of information acquired through the drilling of more than 50 wells and long-term production tests, and with the extensive knowledge of the Santos Basin pre-salt layer, it was possible to characterize the existence of volumes exceeding 5 billion equivalent oil barrels originally contracted.

In November 2017, we formed an internal committee, which is responsible for negotiating the review of the Transfer of Rights Agreement with Federal Government’s representatives. In January 2018, the government instituted an Interministerial Commission with representatives of the Ministries of Mines and Energy (MME), Finance and Planning, Development and Management, in order to complete the terms of the contract review. The discussions between the parties evolved, and the National Council for Energy Policy (CNPE) published Resolution no. 12/2018, on September 14, 2018, recommending to the MME the previous draft of the addendum to the contract to the Federal Audit Office (TCU) for analysis, and the MME followed the orientation. Such draft consolidates a scenario that results in compensation to Petrobras. After the manifestation of the TCU, the negotiations should be continued to close the review process.

The review process is monitored by our Minority Committee.
Reserves

The oil reserves are measured according to criteria defined by the Securities and Exchange Commission (SEC), which take into account technical and economic aspects for the measurement of existing volumes and the possibility of producing them in the future.

Through the exploratory activity, we discovered new areas that, after being declared commercial, started to constitute oil fields. For each field, a production development plan is proposed. As the projects included in this plan acquire adequate technical and economic maturity, the field is then considered to have proven reserves. Throughout the field’s life, its proven reserves can be increased from drilling wells, operational optimizations, implementation of additional recovery methods, such as water injection, among others.

When we begin producing, this volume of oil, condensate and natural gas is no longer a reserve. In addition, other factors, such as the purchase and sale of assets, oil prices and reservoir characteristics, also influence the variation in the volume of our reserves.

VARIATION IN PROVEN RESERVES (BILLION BOE)

<table>
<thead>
<tr>
<th>COMPOSITION OF PROVEN RESERVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Proven Reserves in December 2017</td>
</tr>
<tr>
<td>b) Appropriations in 2018</td>
</tr>
<tr>
<td>c) Purchase and Sale in 2018</td>
</tr>
<tr>
<td>d) Production for the year 2018 *</td>
</tr>
<tr>
<td>e) Annual variation (b + c + d)</td>
</tr>
<tr>
<td>e) Proven Reserves in December 2018 (a + e)</td>
</tr>
</tbody>
</table>

*This volume includes the volume produced by the shale and does not consider the production of the TLDs in exploratory blocks in Brazil, since they refer to exploratory areas, without declaration of commercial feasibility, therefore, still without associated reserves. The production also does not consider the volume of gas injected. In addition, this volume does not include Bolivia’s production, since, according to Article 357 of the Bolivian Constitution (promulgated on February 7, 2009), reserves in this country cannot be registered by the concessionaire.

In 2018, we could replenish 125% of the volume produced, disregarding the effects of the acquisitions and divestments conducted in 2018, mainly due to the drilling of new wells, the positive responses to water injection and the good performance of the reservoirs in the pre-salt of the Santos and Campos basins.
Water

We have captured a volume of 182.3 million cubic meters of fresh water for our operational and administrative activities in 2018. We have used 209 capture sources, of which 177 were located in Brazil (accounting for around 95% of the total volume of fresh water we collected) and 32 in the other countries where we operate. We continuously invest in assessing the impacts of our activities, observing protected areas and identifying sensitive areas located in the regions of influence of our units.

We reused 84 million m³ of water in 2018, sufficient volume to supply a city of two million inhabitants for one year. The resulting economy of rationalization and reusing actions contributed to ensure the security of supplies necessary to our operations.

From these reusing actions, we estimate an annual saving of approximately R$ 28.6 million in the costs of water abstraction and effluent disposal.

Energy

In 2018, we recorded a total consumption of 853 thousand terajoules (TJ), or 397 thousand boed, a quantity 10% lower than that of the previous year due to the reduction of electricity generation to market. Although production and processing were similar between 2017 and 2018, there was a significant reduction in Petrobras’ distribution of electrical power, which reduced consumption.

Steps taken to improve energy performance have enabled us to save 2,300 terajoules a year (TJ/y), or 1,100 BOED, equivalent to power consumption in a city with 92,000 inhabitants for one year. We had initiatives that generated energy savings, such as: equipment adequacy projects; increased load at REGAP refinery, with improved recovery in preheating battery; and reduction of losses in refining flares.
**MAIN IMPACTS**

We are always seeking to reduce the impacts of our activities to the environment. In 2018, Petrobras holding invested resources in initiatives to improve our safety, environmental and health performance, comply with the specific legislation and contribute to the safe, profitable and environmentally responsible operational practices of our units.

The relationship with our suppliers also includes aspects related to the environmental dimension. Environmental criteria were used in the new commitments formalized by Petrobras Holding in 2018. The contracted companies must present evidence and certifications related to compliance with safety, environmental and health standards, and declare that they comply with all the requirements, laws and regulations of this topic.

Over the last year, we made progress toward the goals of contributing to climate-change reduction by adhering to the following initiatives:

**Oil & Gas Climate Initiative (OGCI),** which brings together 13 of the world’s largest oil and gas companies, responsible for more than 30% of O&G’s worldwide production, with the objective of jointly investing at least US$ 1 billion over the next 10 years to develop technologies and initiatives, that contribute to the reduction of GHG emissions;

**Zero Routine Flaring by 2030 of the World Bank,** an initiative that seeks to incorporate the sustainable use or conservation of associated gas from oil exploration fields without routine flaring.

In the Strategic Planning 2040, we established an initiative to develop and implement processes within the company to meet requirements related to a low-carbon economy with actions and goals until 2025.

**HSE INVESTMENTS**

(R$ BILLION)

<table>
<thead>
<tr>
<th>Year</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.9</td>
<td>5.2</td>
<td>5.6</td>
</tr>
</tbody>
</table>

These investments are directed to our operations, reduction of emissions and waste from industrial processes, management of water and effluent use, repair of impacted areas, implementation of new environmental technologies, modernization of our pipelines and improvement of our capacity to respond to emergencies. In addition, we support several socio-environmental projects.

<table>
<thead>
<tr>
<th>GHG EMISSION*</th>
<th>MILLION TONNES OF CO₂E</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>66.5</td>
</tr>
<tr>
<td>2017</td>
<td>67.1</td>
</tr>
<tr>
<td>2018</td>
<td>61.7</td>
</tr>
</tbody>
</table>

* Our emissions are verified annually by third party, with data verification to be completed as of 2018 to July 2019. After 2017 data verification by third party, the result went from 67.0 to 67.1.

For more information on socio-environmental projects, please refer to Sustainability 2018 and for our relationship with suppliers, please refer to Social, Relationship Capital and Sustainability 2018.
Biodiversity and Ecosystems

In 2018, we recorded 31 events with a confirmed or probable impact on fauna, flora or habitat, such as suppression of vegetation, erosion and accidental death of animals in units. For all of these events we have adopted mitigation measures, treatment or recovery of environmental impact, such as the replacement of protected species and revegetation, treatment and recovery of degraded areas, adaptation of facilities and other measures. In order to prevent and mitigate risks and impacts to fauna, as well as human health, safety of our employees and operational safety, we have developed and started implementing, in 2018, corporate guidelines for fauna management in our operational units.

Waste

We have oily currents reuse and recycling actions for hydrocarbons' recovery in the production processes of green oil coke and other fuels in SIX and Refap. In these two units, in 2018, we surpassed a total reprocessing of 124 thousand tonnes of oily streams, an increase of approximately 44% over the year 2017, when the reprocessed load was approximately 86 thousand tonnes.

We also seek to reduce the waste destiny generated in our activities for landfills by recycling:

<table>
<thead>
<tr>
<th>Material</th>
<th>Recycling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAPERS</td>
<td>93%</td>
</tr>
<tr>
<td>WOODS</td>
<td>78%</td>
</tr>
<tr>
<td>SCRAP</td>
<td>100%</td>
</tr>
<tr>
<td>GLASS</td>
<td>90%</td>
</tr>
<tr>
<td>PLASTICS</td>
<td>92%</td>
</tr>
</tbody>
</table>

Effluents

As a result of our operations, we discounted 289.1 million cubic meters of water effluents by 2018, including industrial effluents and water produced from the oil extraction process. Our effluent disposal processes meet the release standards established by law. We use 53 surface water bodies, 11 underground disposal points and 33 supply/treatment concessionaires or outsourced companies to assimilate our effluents.

Specifically, in relation to the discard of produced water, we executed a Letter of Commitment with IBAMA to discipline the alteration of the methodology of analysis in the measurement of the Oils and Greases content of Produced Water, starting to adopt a more restrictive method in gravimetric analyzes, adding an improvement in the management of platforms. All the actions are being fulfilled by Petrobras in accordance with the established schedule, which ends in 2020.

We are analyzing the possibility of setting some goals and ambitions for other environmental issues, such as: water reuse and waste disposal.

* The amount of hazardous solid waste from industrial processes sent for treatment in 2018 (119 thousand tonnes) was less than the amount generated in the same year (120 thousand tonnes).
Spills

Oil and oil products spills totaled 18.5 m³ in 2018, 48% less than the volume registered in 2017, and 63% below the alert threshold set by the company. We are constantly improving our standards, procedures and leakage response plans, which are structured at the local, regional and corporate levels.

As part of our environmental procedures and efforts, we have detailed response and contingency remediation plans in place to be implemented in case of oil spill or leakage in our offshore and onshore operations.

In order to effectively operate in these types of emergencies, we have resources such as vessels specializing in oil containment and fire fighting, and containment barriers, disseminated in our Environmental Defense Centers, on advanced bases and in Emergency Response Centers of our subsidiary Transpetro, located at several points of the national territory.

Our units are certified by our own Equipment Inspection Service, a system that seeks to guarantee the integrity of our facilities through analyzes, inspections and test techniques employed in equipment and pipelines. We also train our operational area leaders on process safety management, including relevant information about the layers of protection so as to avoid loss of containment and leaks.

We are associated with Oil Spill Response Limited, a global-scale organization specializing in providing and complementing resources for an effective oil spill response. In 2018, we conducted 21 regional simulation exercises, including training in response to leaks.

For more information, please refer to Sustainability 2018.
The main tangible assets, the majority located in Brazil, are in the following table:

### PRODUCIVE CAPITAL

Our productive capital consists of our industrial units and all the infrastructure we use in our productive activity, with emphasis to the platforms, refineries and logistical assets.

#### EXPLORATION AND PRODUCTION

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production wells (oil and natural gas)</td>
<td>10,045</td>
<td>7,888</td>
<td>7,256</td>
</tr>
<tr>
<td>Floating rigs</td>
<td>34</td>
<td>30</td>
<td>16</td>
</tr>
<tr>
<td>Operated platforms in production</td>
<td>115</td>
<td>114</td>
<td>113</td>
</tr>
</tbody>
</table>

#### TRANSPORT AND STORAGE

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipelines (km)</td>
<td>7,719</td>
<td>7,719</td>
<td>7,719</td>
</tr>
<tr>
<td>Gas pipelines in Brazil (km)</td>
<td>9,190</td>
<td>9,190</td>
<td>9,190</td>
</tr>
<tr>
<td>Vessel fleet (owned and chartered)</td>
<td>131</td>
<td>128</td>
<td>123</td>
</tr>
<tr>
<td>Own</td>
<td>38</td>
<td>39</td>
<td>43</td>
</tr>
<tr>
<td>Chartered</td>
<td>93</td>
<td>89</td>
<td>80</td>
</tr>
<tr>
<td>Terminals</td>
<td>52</td>
<td>55</td>
<td>56</td>
</tr>
<tr>
<td>Own</td>
<td>47</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Third party’s</td>
<td>5</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

#### REFINING

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refineries</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Brazil</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Abroad</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Nominal installed capacity (thousand barrels per day-bpd)</td>
<td>2,276</td>
<td>2,276</td>
<td>2,286</td>
</tr>
<tr>
<td>Brazil</td>
<td>2,176</td>
<td>2,176</td>
<td>2,176</td>
</tr>
<tr>
<td>Abroad</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

#### DISTRIBUTION IN BRAZIL

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of service stations</td>
<td>8,176</td>
<td>8,277</td>
<td>7,665</td>
</tr>
<tr>
<td>Number of distribution bases</td>
<td>85</td>
<td>83</td>
<td>84</td>
</tr>
</tbody>
</table>

### NATURAL GAS

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processing Units</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Bolivia</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Processing capacity <em>(million m³/day)</em></td>
<td>146</td>
<td>149</td>
<td>149</td>
</tr>
<tr>
<td>Brazil</td>
<td>105</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>Bolivia</td>
<td>41</td>
<td>44</td>
<td>44</td>
</tr>
<tr>
<td>Regasification terminals</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Regasification capacity <em>(million m³/day)</em></td>
<td>41</td>
<td>41</td>
<td>47</td>
</tr>
</tbody>
</table>

### POWER

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of thermal power plants</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Installed capacity (thousand MW)</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
</tr>
</tbody>
</table>

### PETROCHEMICAL

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest in companies</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

### FERTILIZERS

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer plants</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Urea production capacity (thousand ton/year)</td>
<td>1,852</td>
<td>1,852</td>
<td>1,852</td>
</tr>
<tr>
<td>Ammonia production capacity (thousand ton/year)</td>
<td>1,406</td>
<td>1,406</td>
<td>1,406</td>
</tr>
</tbody>
</table>

### BIOFUELS

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiesel production units</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Biodiesel production capacity <em>(thousand m³/year)</em></td>
<td>902.8</td>
<td>1,054</td>
<td>1,054</td>
</tr>
</tbody>
</table>

1 Includes information from abroad, corresponding to the share of Petrobras in affiliated companies.
2 Includes only definitive production systems, EWT (Extended Well Test) and EPS (Early Production System) units. Values of 2016 and 2017 revised to reflect this criterion.
3 Third party terminals that have existing contracts for the use of the storage service.
4 Non-material adjustment to capacity values in the years 2016 and 2017.
5 As of July 2017, in the face of the redelivery of the Golar Spirit vessel, the regasification was conducted using two vessels.
6 Includes the capacity of Quixadá, which is hibernated.
We own 93 platforms, plus 20 leased and 11 operated by third parties, which allowed us to produce offshore 1.96 million barrels of oil per day and 61.6 million cubic meters of natural gas per day in 2018, less the liquefied volume.

Part of the volume of oil is exported, and the other portion is transferred through terminals and pipelines to our 13 refineries with processing capacity of 2,176 thousand bpd.

These oil products are sold to fuel distributors, including our subsidiary Petrobras Distribuidora, which has a network of 686 own stations and 6,979 third-party stations, as well as bases and terminals. The distributors are responsible for the sale to final consumers.

These operations rely on Transpetro’s logistical support in the operation of 57 vessels, of which 43 are owned and 14 chartered by our subsidiary, in addition to the 66 chartered by Petrobras.

The volume of natural gas produced is transferred to the processing plants with nominal processing capacity of 149 million m³/day.

In order to complement the total natural-gas supply, we have three liquefied natural gas (LNG) regasification terminals. Currently, the total delivery capacity is 47 million m³/d.

The processed natural-gas chain transfer system for the distributors in Brazil, with Petrobras shareholding, consists of gas pipelines with total extension of 9,190 km.

We also own and operate an electricity generating plant composed of 20 thermoelectric plants, with an installed capacity of 6.1 thousand MW.

In addition, we operate in Petrochemicals through interests in five operating companies.

Our three fertilizer units have an annual production capacity of 1,852 thousand tonnes of urea and 1,406 thousand tonnes of ammonia, and our biofuel plants have a capacity of 945 thousand m³ of biodiesel, without considering the unit of Quixadá that is hibernated, and 211 thousand m³ of ethanol.

The total of our property, plant and equipment had a book value of R$ 609.8 billion at the end of 2018.

For more information about our performance and the entry of new production systems, please refer to Business Performance and Strategy and Outlooks, respectively.

For more information, please refer to Financial Statements (explanatory note 12) and Reference Form (item 9.1), available on our website: www.petrobras.com.br/ri.
INVESTMENTS

Our investments totaled R$ 49.37 billion in 2018, 2.4% higher than the previous year.

For more information on investments by segment, please refer to Business Performance.

EXPLORATION AND PRODUCTION INVESTMENTS

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production development of new oil fields, primarily in the pre-salt area of Santos basin</td>
<td>R$ 42.53 billion</td>
<td>82%</td>
<td>+2.4%</td>
</tr>
<tr>
<td>Production maintenance in mature fields</td>
<td>R$ 5.71 billion</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Exploratory Activities</td>
<td>-</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Improvement of operational efficiency</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

REFINING AND NATURAL GAS INVESTMENTS

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance of refining units</td>
<td>-</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Conceptual design to enable Replan to produce 100% of S-10 diesel oil and increase its production of aviation fuel</td>
<td>-</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Construction and expansion of the capacity of gas pipelines and natural gas processing units to supply the production of the pre-salt pole of Santos basin</td>
<td>R$ 49.37 billion</td>
<td>-</td>
<td>+2.4%</td>
</tr>
</tbody>
</table>

COMPARATIVES OF TOTAL INVESTMENTS (R$ BILLION)

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2017</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploration and Production</td>
<td>82%</td>
<td>86%</td>
<td>+2.4%</td>
</tr>
<tr>
<td>Refining and Natural Gas</td>
<td>16%</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Other Areas</td>
<td>2%</td>
<td>2%</td>
<td></td>
</tr>
</tbody>
</table>
Transpetro, our subsidiary, invested R$ 1.454 billion in 2018. Most of the investment was directed to the construction of ships, with the delivery of four new vessels during the year (three aframax class and one gasser), and projects related to the maintenance of the company’s logistics infrastructure.

Our subsidiary Petrobras Distribuidora invested R$ 448 million in 2018, mainly for the maintenance and expansion of the logistics infrastructure, the development and modernization of the network of stations, aviation segment, gas distribution, and energy sale.

Our investment budget, as well as the investment and budget of our subsidiaries, is approved on an annual basis by the National Congress, pursuant to budgeting legislation in force in Brazil for companies controlled either directly or indirectly by the Federal Government. The 2018 budget in force was approved by Law 13,587/2018 (2018 Annual Budgetary Law) and supplements thereof.

In compliance with the constitutional rule prohibiting investments that exceed the budget and additional credits approved, we made our investments within the limits approved by the competent authorities.

In parallel to our investments in expanding our productive capacity, our divestments and partnerships also contribute to the adequacy of our portfolio, as well as the disposal of non-strategic assets, as well as our partnerships, in addition to the benefits of divestments, sharing and development new technologies, strengthening corporate governance and sharing of future risks and investments.

**IMPAIRMENT**

The recoverability assessment of our assets takes place annually as of December 31, or when there is evidence of devaluation over the course of the year. In 2018, losses and reversals in the impairment of assets were recognized in the net amount of R$ 7,689 million, mainly in the fourth quarter, resulting from portfolio management and the updating of our medium and long-term economic assumptions, within the scope of the 2019-2023 Business and Management Plan, as approved in the fourth quarter of 2018.

We highlight the increased estimated decommissioning expenditures for exploration and production areas in Brazil, which have significantly contributed to the recognition of impairment losses, mainly in such assets in the Sergipe-Alagoas Basin and Campos Basin. However, such losses were partially offset by the project review effects with consequent lengthening in the expected production curve in such fields located in the Santos and Espirito Santo Basins, which generated reversals of previously recognized impairments. Regarding exploration and production areas in fields located abroad, we highlight such ascertained losses for assets within the scope of the divestment and partnerships plan, especially the oil and natural gas production fields in the Gulf of Mexico.

In the Refining, Transportation and Commercialization segment, we recognized impairment losses due to the deterioration in the scenario of future freight prices impacting Transpetró’s ship fleet, as well as the need to discontinue equipment operations, besides strategic decisions on such projects in the fertilizer business and gas pipelines.
Our financial capital is composed of the available financial resources, whether our own or from third parties, allocated to our productive activity.

The controlling block, consisting of the Federal Government, BNDES, BNDESPar, Caixa Economica Federal and the Social Participation Fund hold 63.52% of our shares with voting rights.
Stock performance

In 2018 we had an expressive appreciation of our shares. The upward movement, observed at the beginning of the year, was partially interrupted by the truck drivers’ strike, which occurred in May 2018, but after the strike until the end of 2018, we again observed a recovery in our market value. This movement is part of the recovery process of credibility and appreciation of the company that has been observed since 2016.

In January 2018, the value of our shares exceeded our book value, a milestone not reached since January 2012.
The indebtedness level is part of our main financial metric. Since 2015, we have been working to reduce our debt and improve its profile, redistributing the amortizations over time and reducing its cost. One of the main goals of our Strategic Plan is to reach the Net Debt/Adjusted Ebitda ratio below 1.5x by the end of 2020. In calculating Adjusted EBITDA, we adjusted our EBITDA for the periods of 2018 by adding foreign exchange gains and losses resulting from provisions for legal proceedings denominated in foreign currencies.

**INDEBTEDNESS**

We achieved US$ 69.4 billion net debt at the end of 2018.

**NET DEBT/ADJUSTED EBITDA RATIO (X)**

- **2016:** 3.54
- **2017:** 3.67
- **2018:** 2.34
Debt Management

According to the 2019-2023 Business and Management Plan, there is no need for new net funding in the horizon of the plan. However, we will continue to evaluate funding opportunities aimed at managing liabilities, aiming at improving the amortization profile and reducing the cost of debt, and maintaining a debt profile that is adequate to the maturity of our investments.

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average interest rate (% p.a.)</td>
<td>6.2</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>Weighted average maturity (in years)</td>
<td>7.5</td>
<td>8.6</td>
<td>9.1</td>
</tr>
<tr>
<td>Leverage (%)</td>
<td>55</td>
<td>51</td>
<td>49</td>
</tr>
</tbody>
</table>

In 2018, we raised R$ 38,023 million. We highlight:

(i) funding in the national and international banking market, maturing between 4.5 years and 6.5 years, in the total amount of R$ 26,227 million;
(ii) offer of securities in the international capital market (Global Notes) maturing in 2029, in the amount of R$ 6,359 million, (US$ 1,962 million); and
(iii) funding of R$ 3,774 million, in financing with export credit agencies.

We prepaid several loans and financing in the total amount of R$ 141,483 millions. We highlight:

(i) the repurchase and / or redemption of R$ 49,719 million, (US$ 13,943 million) of securities in the international capital market, with the payment of a net premium in the amount of R$ 1,015 million;
(ii) the prepayment of R$ 55,116 million of loans in the domestic and international banking market; and
(iii) prepayment of R$ 4,932 million of financing from the BNDES.

We performed debt swap transactions that did not involve financial settlements. We highlight:

(i) debt extension in the international banking market with maturities in 2020 and 2023, in the total amount of R $ 5,794 million (US $ 1,500 million), for new debts with maturities in 2023 and 2024 and more competitive financial costs.

After these operations, our amortization profile was extended, rebalancing the volume of payments, especially in the short term, for the years 2019 to 2022.
Risk rating

Our credit rating is determined by our operational and financial perspectives and is influenced by Brazil’s sovereign credit rating. Since 2016, rating agencies Moody’s and Standard & Poor’s (S&P) have been acknowledging our efforts to improve governance, debt management, divestments and reduce leverage, by raising our ratings. Fitch reduced our rating in 2018, as a result of the downgrading of Brazil’s credit rating.
Currently the cash generated in our operating activities is sufficient to finance our investments. Since 2015, we have recorded positive free cash flow, reflecting efforts to optimize investments and reduce costs, as well as the practice of prices aligned with international prices.

Our active portfolio management combined with our partnership strategy results in another important source of company resources through the establishment of partnerships and divestments.

The active management of the portfolio is in line with 2019-2023 Business and Management Plan and seeks to maximize our value, through the optimization of the business portfolio, leaving in full the participation and production of biodiesel and ethanol, distribution of liquefied petroleum gas (LPG) and production of fertilizers, preserving technological skills in areas with potential for development. In addition, the active management of the portfolio contributes to the reduction of our leverage and the availability of resources for future investments.

In line with TCU guidelines and current legislation, our Disinvestment Systematics comprises the following stages, which are disclosed to the public:

- **OPPORTUNITY DISCLOSURE (TEASER)**
  - This is when the intention of divestment is made public, and potential interested parties are invited to take part in the bidding process.

- **BEGINNING OF THE NONBINDING PHASE (WHEN APPLICABLE)**
  - Optional step, held to identify and select the participants who are really interested in the acquisition and that see greater value in the assets/companies.

- **BEGINNING OF THE BINDING PHASE**
  - Step where the selection of the best offer made by the potential interested parties takes place, in order to maximize the value of sales.

- **GRANTING EXCLUSIVITY IN THE NEGOTIATION (WHEN APPLICABLE)**
  - Optional step, which occurs when exclusivity is formally granted to a potential buyer, after the binding phase.

- **TRANSACTION APPROVAL BY SENIOR MANAGEMENT (EXECUTIVE BOARD AND BOARD OF DIRECTORS) AND SIGNING OF AGREEMENTS**
  - Step containing the signing of purchase and sale (or assignment of rights) agreements containing the conditions of the transaction, including the conditions precedent for the closing.

- **CLOSING OF THE OPERATION**
  - Step where the transaction is concluded with the fulfillment of the conditions precedent set forth in the agreement.
In 2018 and early 2019 we received a total of US$ 6.1 billion* from our partnerships and divestments, and we have completed the following transactions:

<table>
<thead>
<tr>
<th>SIGNATURE DATE</th>
<th>CLOSING DATE</th>
<th>TRANSACTION</th>
<th>NOMINAL VALUE1 (US$ BILLION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/18/2017</td>
<td>6/15/2018</td>
<td>Strategic partnership with Statoil (current Equinor): technical agreement to increase the recoverable volume of oil in the Roncador field; agreement to share gas export infrastructure, and assignment of 25% participation in the Roncador field</td>
<td>2.9</td>
</tr>
<tr>
<td>12/28/2016</td>
<td>1/15/2018</td>
<td>Strategic alliance with Total, including the assignment of 22.5% of the rights in the Iara concession area, and the assignment of 35% rights, as well as the operation, in the concession area of the Lapa field, in Block BM-S-9</td>
<td>2.2</td>
</tr>
<tr>
<td>10/10/2018</td>
<td>11/30/2018</td>
<td>A joint venture constituting assets in oil and gas production in the Gulf of Mexico between the subsidiary Petrobras America Inc. (20%) and Murphy Exploration &amp; Production Company (80%).</td>
<td>1.1</td>
</tr>
<tr>
<td>12/28/2016</td>
<td>4/30/2018</td>
<td>Sale of the Petrochemical Company of Pernambuco (PetroquímicaSuape) and Companhia Integrada Têxtil de Pernambuco (Citepe) in Petrobras Paraguay Distribución Limited (PPDL UK), Petrobras Paraguay Operaciones y Logística SRL (PPOL) and Petrobras Paraguay Gas SRL (PPG)</td>
<td>0.44</td>
</tr>
<tr>
<td>2/21/2018</td>
<td></td>
<td>Sale of Total shares of São Martinho S.A. (6,593%)</td>
<td>0.14</td>
</tr>
<tr>
<td>11/22/2017</td>
<td>4/30/2018</td>
<td>Total assignment of Petrobras’ stake in the Azulão Field</td>
<td>0.06</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>6.8</strong></td>
</tr>
</tbody>
</table>

1Values received or to be received on closing transactions and subsequent payments

In addition, we have two ongoing partnerships in renewable energy. One with Total, in the solar and wind energy segment onshore, and the other with Equinor, in the offshore wind energy segment in Brazil.

<table>
<thead>
<tr>
<th>SIGNATURE DATE</th>
<th>TRANSACTION</th>
<th>NOMINAL VALUE1 (US$ BILLION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/28/2017</td>
<td>Sale of 50% of Termobahia S.A., as part of the strategic partnership with Total</td>
<td>— ²</td>
</tr>
<tr>
<td>6/28/2018</td>
<td>Sale of Petrobras’ equity interest in Petrobras Paraguay Distribución Limited (PPDL UK), Petrobras Paraguay Operaciones y Logística SRL (PPOL) and Petrobras Paraguay Gas SRL (PPG)</td>
<td>0.38</td>
</tr>
<tr>
<td>10/31/2018</td>
<td>Disposal of the ownership interest held by Petrobras (50%) in the company Petrobras Oil &amp; Gas B.V. (PO&amp;GBV)</td>
<td>1.53</td>
</tr>
<tr>
<td>11/28/2018</td>
<td>Total assignment of Petrobras’ participation in the Pargo, Carapeba and Vermelho fields, northeast pole of the Campos Basin.</td>
<td>0.37</td>
</tr>
<tr>
<td>12/21/2018</td>
<td>Assignment of 10% rights from the Lapa field to Total, in Block BM-S-9. Exercise of the option to sell the remainder of our interest, as provided for in the agreement signed in January 2018, when Total acquired a 35% stake in Petrobras, within the scope of the strategic partnership, resulting in the operation of the field.</td>
<td>0.05</td>
</tr>
<tr>
<td>1/30/2019</td>
<td>Complete sale of the shares held by Petrobras America Inc. in the companies that make up the Pasadena refining system in the United States.</td>
<td>0.56</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>2.9</strong></td>
</tr>
</tbody>
</table>

1Amounts received or to be received at the close of transactions and subsequent payments;
2Transaction was executed in 2017 but has not yet been concluded. Transaction value not disclosed yet.
*Amount includes US$ 250 million of dividends distribution from PDG&G by to Petrobras.
Regarding to the competitive processes in progress, we have the following announcements to the market related to divestments:

**ANNOUNCEMENTS TO THE MARKET**

<table>
<thead>
<tr>
<th>PHASE</th>
<th>TRANSACTION SCOPE SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TEASER</strong></td>
<td>Sale of 60% in refining and logistics in the Northeast and South **</td>
</tr>
<tr>
<td><strong>NONBINDING</strong></td>
<td>Total assignment of the participation in three onshore fields in production, located in Espirito Santo, jointly known as Lagoa Parda</td>
</tr>
<tr>
<td></td>
<td>Disposal of 100% of the shares held by Petrobras Biocombustíveis in the company BS BIOS</td>
</tr>
<tr>
<td></td>
<td>Total assignment of rights to shallow-water fields in Rio Grande do Norte</td>
</tr>
<tr>
<td><strong>BINDING</strong></td>
<td>Assignment of the total participation in the Maromba field, in the Campos Basin</td>
</tr>
<tr>
<td></td>
<td>Total assignment of rights over the poles of Pampo and Enchova, in shallow waters, in Rio de Janeiro</td>
</tr>
<tr>
<td></td>
<td>Total assignment of rights over the Sergipe and Mergusa poles, in the shallow waters of Sergipe and São Paulo respectively</td>
</tr>
<tr>
<td></td>
<td>Total assignment of the rights over the Ceará pole, located in shallow waters in the Ceará basin</td>
</tr>
<tr>
<td></td>
<td>Total assignment of onshore rights in Bahia **</td>
</tr>
<tr>
<td></td>
<td>Sale of 90% of the shareholding interest in the Transportadora Associada de Gás S.A. (TAG), a wholly owned subsidiary of Petrobras **</td>
</tr>
<tr>
<td></td>
<td>Disposal of the interest in Araucária Nitrogenados S.A. (ANSA) and in the Nitrogen Fertilizer Unit III (UFN-III)**</td>
</tr>
<tr>
<td></td>
<td>Total assignment of rights in five sets of onshore fields (totaling 19 concessions), in Ceará, Rio Grande do Norte and Sergipe</td>
</tr>
<tr>
<td></td>
<td>Assignment of rights to the Piranema and Piranema Sul fields</td>
</tr>
<tr>
<td></td>
<td>Total assignment of rights to the Baúna field in the Santos Basin</td>
</tr>
<tr>
<td></td>
<td>Assignment of 50%, without transfer of the operation, of the rights over the fields of Tartaruga Verde and Module III of Espadarte</td>
</tr>
<tr>
<td></td>
<td>Partial transfer, without transfer of the operation, of rights in four concessions, located in deep waters in the Sergipe-Alagoas Basin</td>
</tr>
<tr>
<td></td>
<td>Assignment of the total participation of Petrobras in 34 onshore production fields located in the Potiguara Basin, in the state of Rio Grande do Norte</td>
</tr>
</tbody>
</table>

*Information updated until February 1, 2019.

**Processes impacted as described in “Main judicial and administrative decisions that affected our transactions”.

**MAIN JUDICIAL AND ADMINISTRATIVE DECISIONS THAT AFFECTED OUR TRANSACTIONS**

The sale of Liquigás Distribuidora S.A. to Ultragaz was judged and disapproved by Cade. The purchase and sale agreement, signed in 2016, was terminated, applying to Ultragaz fines, in our favor, in the amount of R$ 286.2 million. Alternatives are being analyzed for the divestment of Liquigás.

The assignment of rights of oil fields located in the state of Bahia (Buracica and Miranga groups and related facilities) has been suspended due to a preliminary injunction since October 2018.

In July 2018, we decided to suspend three of our divestment processes due to a non-collegiate injunction issued by the Federal Supreme Court (STF). These are: (i) formation of partnerships in the Northeast and Southern refineries of Brazil; (ii) total sale of our stake in Araucária Nitrogenados S.A. (ANSA) and the Nitrogen Fertilizer Unit III (UFN-III); and (iii) sale of 90% of the shareholding interest in Transportadora Associada de Gás S.A. (TAG), our wholly-owned subsidiary. In January 2019, after the Brazilian Federal Attorney-General’s Office (AGU) stated that Petrobras meets the requirements, we resumed all the divestment processes related above. Regarding the partnerships in the in the Northeast and Southern refineries of Brazil, additional studies are underway to make it viable.
Liquidity and Capital Resources

With prudence in managing our liquidity, we adopted a methodology to establish the minimum cash level and access to revolving credit lines.

* Includes changes in the balance of Government bonds and time deposits with maturities of more than 90 days at the beginning of period, investments in marketable securities, dividends paid to non-controlling interest, acquisition of non-controlling interest and effect of exchange rate changes on cash and cash equivalents.
We are subject to external variables that can impact the performance of our business and the way we plan the future. In 2018, the following variables stood out:

- **Regulation**
- **Oil and Gas International Market**
- **Competitiveness of Alternative Energy Sources**
- **Domestic Market and Economy**
OIL AND GAS INTERNATIONAL MARKET

WHAT HAPPENED

In 2018, oil geopolitics drove prices to high levels. The Brent average for the year was US$ 71/bbl. The USA has created significant uncertainty in the international market with threats of breaking the nuclear deal with Iran, a fact made in the second half. The Brent price hit its peak in October 2018, when it hit the US$ 86/bbl mark.

In the early months of 2018, the Organization of Petroleum Exporting Countries (OPEC) cut-offs were more than 100% due to production problems in several of the Organization's member countries. Therefore, in July 2018, concerned with the possibility of production shortages, OPEC and Russia agreed to increase their oil supply to compensate mainly for declines in oil production in Venezuela and instability in other countries, such as Angola, Libya and Nigeria, as well as the impact of the new sanctions on Iran. It was not immediate, but after a few months, the production growth of the world's largest producers (Russia and Saudi Arabia) brought the market back into balance and led to a high inventory increase during the last months of the year. Although it contributed to this move, US production growth in 2018 was limited by logistical bottlenecks in the flow of oil from the Permian producing region.

In early November, the United States confirmed the temporary waivers of sanctions in some countries that claimed they were not prepared to stop importing Iranian oil. Eight countries have benefited from waivers for six months (China, India, Turkey, Taiwan, South Korea, Italy, Japan and Greece), allowing greater availability of oil in the international market. The combination of an increase in inventories and waivers granted produced expectations of oversupply in the international oil market. In this context, oil prices fell from their peak of the year in October (US$ 86/bbl) to US$ 55/bbl in December 2018.

EVOLUTION OF BRENT PER QUARTER IN 2018

(US$/bbl)

1Q18 2Q18 3Q18 4Q18

67 75 75 68

OUR PROSPECTS

From the supply side, investments in logistics in the Gulf of Mexico will unlock the bottlenecks of unconventional oil from the Permian Basin to US export terminals. This dynamic will sustain an upward trend for the share of tight oil in the international market, and to a large extent in Asia. Despite a significant increase in supply in North America, there is a prospect of shrinking the oil production of major world producers, such as Venezuela and Iran.

From a demand point of view, the growth rate will remain positive in the coming years in response to the dynamics of fossil fuel consumption in the emerging Asian countries, notably China and India. In this context, the fundamentals of supply and demand justify the rebalancing of the market around US $ 70 / bbl.
DOMESTIC MARKET AND ECONOMY

WHAT HAPPENED

The trade disputes between the US and China, and the US interest rate normalization have increased international uncertainty and lowered investor risk appetite.

Domestically, the level of activity recorded another year of slow recovery and strong exchange rate volatility. The Brazilian economy grew around 1.0%, driven by investment and household consumption. Cumulative inflation in the year, as measured by the Extended Consumer Price Index (IPCA), ended the year with a 3.75% increase, lower than the Central Bank’s target, due to the still weak domestic demand.

In relation to the BRL/USD exchange rate, the year 2018 was very unstable, especially when compared to the previous year. The exchange rate ranged from a monthly average of BRL/USD 3.21 to BRL/USD 4.11, ending the year with an average of BRL/USD 3.66.

In spite of economic growth, the domestic market for oil products fell by 6% in 2018 compared to 2017, close to 2.2 million bpd. This movement mainly reflects the improvement over the competitiveness conditions of ethanol against gasoline in 2018. While gasoline lost nearly a sixth of its market, growth in sales of hydrated ethanol surpassed 40%. The increase in the biodiesel mandate from 8% to 10% in February 2018 also contributed to the negative performance of the derivatives market.

Despite the advancements in negotiations for a US-China trade agreement, the world scenario remains uncertain. On the positive side, the indications of the Federal Reserve Board (Fed) chairman, considering the 2.5% level of the interest rate near the neutral level, may be signaling that the upward cycle is reaching its end.

With regard to the Brazilian economy, the outlook is for growth to accelerate again in 2019. There is room to increase production by only occupying idle installed capacity, which facilitates the recovery process. There is an expectation that the pension reform will be approved in 2019, contributing to fiscal adjustment and lower exchange rate volatility.

In 2019, the domestic oil products’ market is expected to show a modest reaction, rising by approximately 1% against the level of 2018. Although there is still some shrinkage in the gasoline market, this should be more than offset by the positive movement in demand for the other oil products.
COMPETITIVENESS OF ALTERNATIVE ENERGY SOURCES

WHAT HAPPENED

Renewable energies have shown increased competitiveness in many markets and conditions, bringing increasing economic opportunities for governments and investors. According to the International Renewable Energy Agency (IRENA), the costs of onshore wind power generation have already fallen almost a quarter since 2010. By 2020, the trend is for renewable-energy generation technologies to allow average costs to be in the lower range of fossil-fuel cost range due to factors such as technological improvements, competitive acquisitions and growth of the project developer base.

Renewable sources accounted for 85% of the Brazilian electricity matrix. Wind power, in the last ten years, has reached the 7% share, with an installed capacity of 13 GW. This source has presented a competitive level of generation cost with that of traditional sources, such as gas-fired power plants. In 2018, photovoltaic solar energy represented 1% of the electrical matrix, with approximately 2 GW of installed power (1.5 GW of centralized generation and 0.5 GW of distributed micro and mini generation). The number of photovoltaic distributed generation systems surpassed 48 thousand, more than double that of 2017.

COST BENEFIT INDEX (ICB)
ENERGY AUCTIONS - 2014 TO 2018* (RS/MWh)

Brazil is one of the countries which most expands the generation of energy from renewable sources, ranking 9th and 26th among the nations with the highest installed capacity of wind and solar energy, respectively. The expectation is of strong growth of these sources due to the Brazilian potential, with high solar radiation and winds, mainly in the Northeast, with speeds, predominantly unidirectional and constant.

Brazil’s onshore wind potential was estimated at 140 GW in 2001 when the Brazilian Wind Atlas was drawn up (a document currently under review, which should demonstrate a much higher potential, given the source’s technological evolution). As for offshore wind, the expectation is that Brazil will advance in investments. Although it shows a low degree of maturity in terms of development, there is a strong expectation of reducing costs of this source in the world. The flat cost of commissioned plants in 2017 was US$ 0.14/kWh and is expected to reach $ 0.10/kWh in projects to be commissioned in 2020, according to IRENA.

Technological improvements in turbines and solar panels, whether in more advanced or efficient components or materials, it is expected to apply digital technologies that allow the use of real-time data and big data gains in maintenance, reduction of costs of O&M and energy lost in downtime, thus contributing to a greater competitiveness of renewable energies.

In addition, digital solutions can be used as a link for integrating renewable sources and distributed generation systems into the transmission network, enabling advances in productivity, integration and reliability, and providing a conducive environment for the development of more resilient and intelligent equipment.

Note:
LEN - New Energy Auction;
LER - Reserve Power Auction;
LFA - Auction of Alternative Sources
* Values updated for November 2018.
REGULATION

WHAT HAPPENED

Gas Act: in 2017, several measures to change the Gas Act (Act No. 11,909 / 2009) were under discussion, through the substitution of Bill 6,407/2013, which has as its objective the establishment of a new regulatory framework for the natural gas. The bill was expected to be passed in 2018, which did not happen.

By contrast, in December 2018, Decree No. 9,616/2018 was published, which amends Decree No. 7,382/2010, which regulated the Gas Act. The referred decree had, among other objectives, to enable ANP to: implement the Entry and Exit model, with system forecast for the transport network (and no more duct to duct treatment); develop guidelines for the common access code for essential facilities and articulate, together with the Ministry of Mines and Energy, the states for free consumer regulation.

Repetro: the change in the tax regime for the exploration and development activities of oil and gas production occurred with the publication of Act No. 13,586 in December 2017, led to the issuance of a Normative Instruction that regulated the newly created Repetro-Sped. This regime allows the incorporation of the permanent asset, such as an FPSO, to fixed assets, and there is no longer a need to return the asset abroad at the end of the contract, eliminating its future cost of removal. Therefore, this normative instruction enabled the migration of all the goods acquired in the old Repetro to the Repetro-Sped.

Local content: the publication of ANP Resolution No. 726/2018 regulated the addition of the Concession, Assignment of Assignment and Production Sharing contracts with new rules for the local content clause and exemption of the local content obligations (waiver) provided for in these same contracts.

The option for the amendment of such a clause can be made for all contracts in force, in effect, for the non-closed phases. The new local content rules set the following percentages: 50% for onshore exploration and development projects; 18% for offshore exploration projects and for the development of production at sea:

(i) 25% for well construction; (ii) 40% for collection and disposal; and (iii) 40% for the stationary production unit (divided among three groups – engineering, machinery and equipment, and construction, integration and assembly).

The option for the addition has as a counterpart the extinction of the right to the waiver and adjustment of the local content. In addition, companies must expressly waive any litigation they may have against the ANP due to fines already paid for failure to comply with the local content obligation.

Assignment Agreement: Assignment agreement, executed in 2010 between Petrobras and the Federal Government, is under negotiation process.

For more information on assignment agreement negotiation, please refer to Natural Capital.
**RenovaBio**: in 2017, a new regulatory framework for biofuels was established, named RenovaBio (Law 13.576/2017). This new program aims to recognize the strategic role of biofuels in reducing greenhouse-gas emissions with the establishment of decarbonization targets for a period of 10 years, to be met by fuel distributors by proving the acquisition of decarbonization (CBIOs).

In 2018, two important resolutions were published by the National Energy Policy Council (CNPE). Resolution No. 5, which addresses the decarbonization targets, setting a goal to reduce the carbon intensity of the transportation sector by 10.1% by 2028. In effect, distributors are obliged to purchase decarbonization credits in proportion to their sales of fossil fuels. No. 16, set the schedule for lifting the mandatory blend of biodiesel to mineral diesel, pointing to an increase of one percentage point per year, starting in 2019, reaching 15% in 2023. This schedule is conditioned upon the completion of the engine tests.

**Gas Act**: for the year 2019, it is expected that the ANP will regulate Decree No. 9.616/2018 and that discussions will be resumed for the approval of the substitute to Bill 6.407/2013, providing the legal changes necessary for the development of the natural-gas market in Brazil.

**RenovaBio**: at the PNG 2019–2023 horizon, our projections for fuel consumption within the transportation sector are in line with the carbon reduction target set in the CNPE resolution.
Oil & Gas Exploration and Production

Manage the E&P project portfolio in an integrated manner

Prioritize development of deep-water production, with a focus on strategic partnerships, combining technical competencies and technologies

Manage the exploratory portfolio in order to maximize economic viability thereby ensuring the sustainability of oil and gas production

Strengthen reservoir management to maximize the value of E&P contracts in all the regulatory regimes, seeking opportunities to continuously incorporate reserves

Continually improve upon productivity and cost reduction while following best international practices

Facilitate the design and implementation of projects with lower breakeven price, with safety and compliance with environmental requirements.

Startup of four new production systems, three of them in the pre-salt. In February 2019, an additional system went into production.

Approval by the ANP of the extension until 2052 of the concession contracts for Marlim Leste, Marlim Sul, Canto do Amaro and Fazenda Alegre fields.

Seven new blocks were contracted in Brazil under the concession regime and four new blocks under the production sharing regime in the Campos and Santos basins, three within the Pre-salt Polygon.

Partnerships to increase the recovery factor in Marlim and Roncador.

Formation of a joint venture with assets in oil and natural gas production in the US Gulf of Mexico to share risks and investments.

Providing integrated logistic services to all deepwater and ultra deepwater partnerships through PB-LOG.


For information on partnerships and divestments, please refer to Social and Relationship Capital and Financial Capital.
### PERFORMANCE INDICATORS

<table>
<thead>
<tr>
<th>RESERVES* (BILLION BOE)</th>
<th>INVESTMENT – E&amp;P (R$ MILLION)</th>
<th>LIFTING COST (USD/BOE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>9.672</td>
<td>2016</td>
</tr>
<tr>
<td>2017</td>
<td>9.752</td>
<td>2017</td>
</tr>
<tr>
<td>2018</td>
<td>9.606</td>
<td>2018</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRODUCTION (MILLIONS BOED)</th>
<th>ADJUSTED EBITDA – E&amp;P (R$ MILLION)</th>
<th>GHG EMISSIONS – E&amp;P** (MILLION TON CO₂ E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>2.79</td>
<td>2016</td>
</tr>
<tr>
<td>2017</td>
<td>2.77</td>
<td>2017</td>
</tr>
<tr>
<td>2018</td>
<td>2.63</td>
<td>2018</td>
</tr>
</tbody>
</table>

**Note:**
- The information by operating segment considers the scope of each segment, as defined in our Financial Statements.
- According to SEC criterion

**Our emissions are verified annually by third party, with prediction of completion of verification of data from 2018 until July 2019. After the 2017, data were verified by third party, the result became 21.60.**
Exploração

The oil and gas industry value chain starts in the exploratory phase, with the contracting of exploratory blocks, either through bid rounds conducted by governments or by purchases from other companies. From the acquisition, processing, interpretation of geological and geophysical data and drilling of wells, we may come upon the discovery of a reservoir containing oil, gas, or both. After the discovery, the reservoir goes through an evaluation process, where the volumes of hydrocarbons that are technically recoverable from that area are estimated.

On December 31, 2018, we had 137 exploration blocks, in which 24 oil and/or gas discoveries were under an evaluation process. In addition, five other discoveries were being evaluated in production areas. In the following table, we detail our exploratory assets:

<table>
<thead>
<tr>
<th>EXPLORATORY AREA* (KM²)</th>
<th>EXPLORATION BLOCKS</th>
<th>EVALUATION PLANS</th>
<th>DRILLED WELLS</th>
<th>SUCCESS RATE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAZIL</td>
<td>82,382</td>
<td>133</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>ABROAD</td>
<td>14,615</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>South America</td>
<td>14,615</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>North America</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Africa</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>96,997</td>
<td>137</td>
<td>29</td>
<td>8</td>
</tr>
</tbody>
</table>

*Regarding the total area (Petrobras’ and partners’ share), on which we have the right to explore.

BUSINESS PERFORMANCE

Our oil and gas exploration and production activities are the major components of our investment portfolio and are focused on oil, gas, offshore and onshore exploration, discovery, identification, production and incorporation of oil and gas reservoirs, producing hydrocarbons in a safe and profitable way.

We are world leaders in deepwater and ultra-deepwater production. Our activities are focused on deep and ultra deep-water oil reservoirs in Brazil, which accounted for 85% of our total production in 2018 and accounted for 92% of our proven reserves as of December 31, 2018. We also work in mature fields in shallow waters and onshore. Outside Brazil, we operate in South America, the US Gulf of Mexico and West Africa.
We also acquired Blocks M-762, M-859 and M-952 in the Potiguar Basin during the 15th Concession Round.

### NATIONAL AGENCY OF PETROLEUM, NATURAL GAS AND BIOFUELS (ANP) BID ROUNDS

In 2018, ANP held three bidding rounds for exploratory blocks in Brazil (4th and 5th round under the Production Sharing Regime and 15th round under the concession regime).

We act selectively in these auctions, reflecting our strategic vision and marking the strengthening of our exploration portfolio’s recovery, while at the same time seeking to recover the relationship between reserve and production and ensure the sustainability of our future production of oil and gas. In alignment with the objective of strengthening partnerships, sharing risks, combining technical and technological capabilities and capturing synergies, we followed our strategy of acting in competitive consortia.

The map and the table summarize the areas acquired by Petrobras.

### EXPLORATORY BLOCK

<table>
<thead>
<tr>
<th>EXPLORATORY BLOCK</th>
<th>CONSORTIUM</th>
<th>BONUS R$ MILLION</th>
<th>OIL PROFIT (%)</th>
<th>AREA ACQUIRED (thousand Km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15th ROUND CONCESSION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-M-657</td>
<td>Petrobras* (30%), Equinor (30%), and ExxonMobil (40%)</td>
<td>2,210.25</td>
<td>5.07</td>
<td>C-M-657 Petrobras* (30%), Equinor (30%), and ExxonMobil (40%)</td>
</tr>
<tr>
<td>C-M-709</td>
<td>Petrobras* (40%), Equinor (20%), and ExxonMobil (40%)</td>
<td>638.55</td>
<td>N/A</td>
<td>0.45</td>
</tr>
<tr>
<td>C-M-753</td>
<td>ExxonMobil* (40%), QPI (30%) and Petrobras (30%)</td>
<td>600.00</td>
<td>N/A</td>
<td>0.87</td>
</tr>
<tr>
<td>C-M-789</td>
<td>ExxonMobil* (40%), QPI (30%) and Petrobras (30%)</td>
<td>99.00</td>
<td>N/A</td>
<td>0.67</td>
</tr>
<tr>
<td>POT-M-762</td>
<td>Petrobras* (100%)</td>
<td>847.44</td>
<td>N/A</td>
<td>0.66</td>
</tr>
<tr>
<td>POT-M-859</td>
<td>Petrobras* (60%) and Shell (40%)</td>
<td>12.03</td>
<td>N/A</td>
<td>0.77</td>
</tr>
<tr>
<td>POT-M-952</td>
<td>Petrobras* (60%) and Shell (40%)</td>
<td>5.13</td>
<td>N/A</td>
<td>0.77</td>
</tr>
<tr>
<td>4th ROUND PRODUCTION SHARING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uirapuru</td>
<td>Petrobras* (30%), Petrogal (14%), ExxonMobil (28%) and Equinor (28%)</td>
<td>1,005.00</td>
<td>5.13</td>
<td>0.77</td>
</tr>
<tr>
<td>Dois Irmãos</td>
<td>Petrobras* (45%), Equinor (25%) and BP (30%)</td>
<td>795.00</td>
<td>75.49</td>
<td>1.28</td>
</tr>
<tr>
<td>Três Marias</td>
<td>Petrobras* (30%), Chevron (30%) Shell (40%)</td>
<td>180.00</td>
<td>16.43</td>
<td>1.40</td>
</tr>
<tr>
<td>5th ROUND PRODUCTION SHARING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southwest of Tartaruga Verde</td>
<td>Petrobras* (100%)</td>
<td>70.00</td>
<td>49.95</td>
<td>0.82</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Southwest of Tartaruga Verde</td>
<td>Petrobras* (100%)</td>
<td>3,285.25</td>
<td>8.70</td>
<td></td>
</tr>
</tbody>
</table>

* Operator company.

Regarding the 6th Bidding Round of exploratory blocks under the production sharing regime, scheduled to be held in the second half of 2019, we informed the Ministry of Mines and Energy, in January 2019, a manifestation of interest in exercising the preemptive rights in three blocks: Aram, Norte de Brava and Sudoeste de Sagitário.

For information about our oil and natural gas reserves, please refer to Natural Capital.
Our investments in exploration totaled R$ 5.15 billion, in 2018, being 97% in Brazil. These investments mainly cover the costs of drilling, seismic surveys and acquisition of blocks, which contributed to the following discoveries and declarations of commercial feasibility:

MAIN DISCOVERIES IN 2018

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>BASIN</th>
<th>BLOCK</th>
<th>AREA</th>
<th>WATER DEPTH (M)</th>
<th>PETROBRAS PARTICIPATION (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Campos</td>
<td>Marlim East Field</td>
<td>2.92</td>
<td>1692</td>
<td>100</td>
</tr>
<tr>
<td>Brazil</td>
<td>Potiguar</td>
<td>Estreito Field</td>
<td>1.38</td>
<td>–</td>
<td>100</td>
</tr>
</tbody>
</table>

DECLARATIONS OF COMMERCIALITY IN 2018

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>FIELD</th>
<th>BASIN</th>
<th>RECOVERABLE VOLUME (MILLION BOE)</th>
<th>OIL QUALITY (° API)</th>
<th>PETROBRAS PARTICIPATION (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>Cancã East</td>
<td>Espírito Santo Terra</td>
<td>0.3</td>
<td>11</td>
<td>100</td>
</tr>
<tr>
<td>Brazil</td>
<td>Noroeste de Sapinhoá Santos</td>
<td>9.51</td>
<td>26</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Sudoeste de Sapinhoá Santos</td>
<td>16.36</td>
<td>26</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Nordeste de Sapinhoá Santos</td>
<td>1.98</td>
<td>26</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>Tartaruga Verde Sudoeste Campos</td>
<td>35.92</td>
<td>27</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

LIBRA AREA AND MERO FIELD

Libra is one of the largest offshore exploration and production projects in the world and is developed by a consortium (Libra Consortium), led by Petrobras (40%), in partnership with Shell (20%), Total (20%), CNPC (10%) and CNOOC Limited (10%). The consortium also counts on the participation of the state-owned company Pré-Sal Petróleo S.A. (PPSA) as contract manager.

Since the signing of the production sharing agreement in 2013, 17 wells have been drilled in the Libra area, 14 of which are in the Mero field.

In 2017, on behalf of the consortium, we announced the declaration of commerciality in the northwestern portion of Libra block, which became the Mero field. In 2018, we completed the Extended Well Test (EWT), a stage that precedes the beginning of the definitive production and aims to better understand the reservoir, through the FPSO Pioneiro de Libra, which has the capacity to process 50 thousand barrels per day of oil and 4 million m³/day of associated gas, being able to reinject in the reservoir all the produced gas, thus reducing CO₂ emissions.

The first definitive production systems are scheduled to start operating in 2021 (Mero 1) and 2022 (Mero 2) with capacity to process 180,000 bpd of oil and 12 million m³/day of gas. The development plan consists of four production systems in this field.
After the declaration of commerciality of a field, the process of production development is begun. The investments made in this phase are mainly focused on designing and contracting production systems, which includes platforms and subsea systems and drilling and completion of the wells.

In 2018, we put onstream three owned platforms: FPSOs P-74 and P-75, located in the Búzios field; and FPSO P-69, located in the Lula field; and a leased unit, FPSO Campos dos Goytacazes, located in the field of Tartaruga Verde. In addition, we also completed the first stage of production testing in the Mero field, the first field of the sharing regime to be put into production in Brazil. The development of these systems will allow the significant growth of our production, which should reach an average growth of 5% a year in the period between 2019 and 2023. In February 2019, two more platforms came onstream: FPSO P-67, in the Lula field, and FPSO P-76, in the Búzios field.

Our investments in production development in 2018 were R$ 32.4 billion, an increase of 9% in relation to the previous year, mainly due to the entry into operation of the five new systems mentioned.

In 2018, our total oil and gas production, including natural-gas liquids (NGL), was 2.63 million barrels of oil equivalent per day (boed), 2.53 million boed produced in Brazil and 101 thousand boed outside, 5% less than 2017, due to the divestments in Lapa and Roncador’s fields, at the end of the Early Production Systems (in portuguese, Sistemas de Produção Antecipada – SPAs) of Tartaruga Verde and Itapu and the natural decline of production.

The annual daily average of the company’s total production (including Petrobras’ and partners’ share) in 2018 was 3.29 million boed, of which 3.16 million boed in Brazil.

Our average lifting cost (Brazil and abroad) in 2018 was US$ 10.7 per boe, excluding government take, which represents a 3.2% reduction compared to the average cost of US$ 11.0 per boe registered in 2017, even considering the start-up of new units.
**EVOLUTION OF PETROBRAS’ OPERATED PRODUCTION**

ANNUAL AVERAGE OF THOUSANDS BARRELS OF OIL PRODUCED PER DAY (KBPD)

- Cumulative production of more than **2 BILLION** barrels of oil equivalent
- **3X FASTER**
- Reduction of over 50% in lifting costs

**JUBARTE FIELD, Campos Basin**
- 1st oil in the Pre-salt extracted in 2008
- 10 YEARS after the first oil, pre-salt accounts for 55% of the oil produced in Brazil

**STATIONARY PRODUCTION UNITS**
- **21 PLATFORMS** in the fields operated by Petrobras
- **14 PLATFORMS** producing exclusively from the pre-salt
- **6 PLATFORMS** producing from post- and pre-salt
- **1 EARLY PRODUCTION System (SPAs)**
- Start of production in more than 11 platforms and investments of R$ 27 billion by 2023.
- Three out of four production projects planned for the coming years are in the pre-salt area.

**WELLS**
- **56 most productive wells** of the country are in the pre-salt area
- Each producing, on average, **26 kbpd**, above the offshore industry average.

**BENEFITS FOR SOCIETY**
- (Government take, including royalties and special participations)
- **2008-2018** R$70 BILLION
- **2019-2023** R$150 BILLION

**REDUCTION OF CONSTRUCTION TIME OF WELLS IN SANTOS BASIN**
- Days/Well
- **UP TO 2010**
- **2012**
- **2014**
- **2016**
- **2018**
- **3X FASTER**

**REDUCTION OF LIFTING COST**
- US$/BOE
- **2010**
- **2018**
Refining and Natural Gas

Promote the alignment of our prices with international market prices and maximize margins in the value chain.

Reducing Petrobras’ risk, adding value in E&P, refining, transportation, logistics, distribution and commercialization through active portfolio management through partnerships, acquisitions and divestments.

Optimize business portfolio, by fully abandoning biofuel production activities, liquefied petroleum gas (LPG) distribution, fertilizer production, and petrochemical interests, preserving technological skills in areas with development potential;

Maximize the generation of value of the gas chain as transition fuel for the long term.

Restructure the electric power business, seeking the alternative that maximizes the value for the company.

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Optimization of the global margin and recovery of market share with alignment to international prices.

Implantation of hedge strategy for the pricings of diesel and gasoline, maintaining the financial result equivalent to daily adjustments.

Advances in partnerships: CNPC for the Comperj and Marlim cluster; Equinor, in the offshore wind energy segment; and the Total group, in the solar and onshore wind energy segments.

Optimization of operations and conclusion of contracts with partners for the purchase of pre-salt natural gas.

Signing of contract for construction of the natural gas processing unit in Comperj.

---


For information on partnerships and divestments, please refer to Social and Relationship Capital and Financial Capital.
### PERFORMANCE INDICATORS

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOMESTIC SALES AND OIL PRODUCTS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PRODUCTION (THOUSAND BBL/DAY)</strong></td>
<td>2,064</td>
<td>1,940</td>
<td>1,887</td>
</tr>
<tr>
<td><strong>SALES</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INVESTMENT – RTC</strong> (R$ MILLION)</td>
<td>4,032</td>
<td>4,093</td>
<td>4,103</td>
</tr>
<tr>
<td><strong>REFINING COSTS (R$/BBL)</strong></td>
<td>8.89</td>
<td>9.26</td>
<td>9.12</td>
</tr>
<tr>
<td><strong>ADJUSTED EBITDA – RTC</strong> (R$ MILLION)</td>
<td>47,475</td>
<td>28,592</td>
<td>20,331</td>
</tr>
<tr>
<td><strong>GHG EMISSIONS – RTC</strong> (MILLION TON CO₂E)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>27.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>26.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>26.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
The information by operating segment considers the scope of each segment, as defined in our Financial Statements.

*RTC - Refining, Transportation and Commercialization

**Our emissions are verified annually by third party, with prediction of completion of verification of data from 2018 until July 2019. After the 2017 data were verified by a third party, the result became 26.79.
Nota:

As informações por segmento operacional consideram a abrangência de cada segmento, conforme definido em nossas Demonstrações Financeiras.

Note:

The information by operating segment considers the scope of each segment, as defined in our Financial Statements.

* Our emissions are verified annually by third party, with data verification to be completed as of 2018 to July 2019. After the 2017 data were verified by third party, the result became 18.06.
Business Performance

21% of our oil production was exported, and the remainder destined to our refineries.

In 2018, our national production of oil products, equivalent to 1,765 million barrels per day, was obtained from the processing of 91.3% of national oil, complemented by imported oil. Those oil products were traded both in Brazil and abroad.

Regarding natural gas, our processing units (UPGN) have the capacity to treat 104.85 million m³/day in Brazil. This natural gas, along with imported from Bolivia and liquefied natural gas (LNG) acquired in the international market, is marketed to several consumers, in addition to the thermoelectric plants where we have participation and our units of fertilizer production.

Additionally, we operate in the petrochemical sector with interests in companies and subsidiaries and in the production of biofuels, through our wholly-owned subsidiary, Petrobras Biocombustível.

OIL PRODUCTS

LIQUID OIL PRODUCTS CHAIN

We serve our oil products clients in Brazil through a planned combination of oil processing, import and export that seeks to optimize our margins, taking into account the different opportunity costs of domestic and imported oil, oil products in the several markets, as well as the costs for transport, storage and processing involved.
We own 99% of all refining capacity in Brazil*. Six of our thirteen refineries are located in the southeast of the country, close to the most populous and industrialized markets, and the source of most of our crude oil in the Campos and Santos Basins.

Petrobras is repositioning itself in refining through the process of partnerships and divestment, allowing the sharing of business risks and the establishment of a dynamic, competitive, efficient sector, in addition to generating liquidity for the company.

* According to ANP’s Statistical Yearbook 2018.

In the United States, the Pasadena Refining System (PRSI) operates with a processing capacity of 110 thousand bbl/day of oil and processed 100 thousand bbl/day of oil and natural gas (NGL) in 2018, producing 107 thousand bbl/day of oil products. In January 2019, we signed a purchase and sale agreement with Chevron U.S.A. Inc. (Chevron), relating to the entire disposal of Pasadena. The completion of the transaction is subject to compliance with the usual prevailing conditions.

For more information on partnerships, please refer to Social and Relationship Capital and Financial Capital.

**ON-GOING UNDERTAKINGS**

**Abreu e Lima Refinery**

Located in Ipojuca, Pernambuco, it is expected to operate two sets of processing units, known as refining trains. The first train went into operation in 2015, and since 2016 is authorized to process up to 100 thousand bbl/day of oil. In 2017, we resumed the works of the Sulfur Emission Abatement Unit (SNOX), whose start is under evaluation due to the notification of a contractual suspension issued by the contractor in December 2018. To conclude the second train, we will prioritize the establishment of partnership according to our 2019-2023 Business and Management Plan.

**Petrochemical Complex of Rio de Janeiro (Comperj)**

It is formed by the Comperj refinery, Natural-gas processing Units (UPGN) and other underlying utilities. In 2018 we started the UPGN operations that will process pre-salt gas from the Santos Basin. As for the Comperj refinery, we began a technical and economic feasibility study of train 1, which will be carried out through the partnership with China National Petroleum Corporation (CNPC), which is in the non-binding phase.
Oil and oil products logistics connect the oil production systems to refineries and markets, seeking to minimize the costs involved with transportation and storage and optimizing the result of oil refining operations and the commercialization of oil and oil products in Brazil and abroad.

Some assets of this system are directly managed by Petrobras controlling company and others are contracted with our wholly owned subsidiary Petrobras Transporte (Transpetro).

VOLUME MOVED AT TERMINALS AND PIPELINES (MILLION M³)

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>603</td>
</tr>
<tr>
<td>2017</td>
<td>572</td>
</tr>
<tr>
<td>2018</td>
<td>564</td>
</tr>
</tbody>
</table>

The 1.4% drop in the handling of products at terminals and pipelines operated by Transpetro in 2018 reflected lower cargoes processed at our refineries, mainly as a result of the operational occurrence at Replan in August 2018.

Despite the partial recovery of its participation in the oil products market, this was not sufficient to compensate for the loss of oil movement resulting from the occurrence.

OPERATIONAL HIGHLIGHTS IN 2018

Increased efficiency in the scheduling and use of ships led to a 1.1% decrease of the size of the fleet of vessels (in tonnage), even with an increase of 7.9% in the tonne-mile produced by maritime transport.

In comparison to 2017, there was an increase in the use of the fleet by 10.8%, especially oil offloading operations, which generated savings of US$ 202,000 per day. Such economy was allowed by the implementation of a joint initiative of our Refining and Natural Gas and Exploration & Production areas, aiming at the integration of people, planning and systems, providing greater reliability in scheduling data and speed in work processes.

The expansion of direct ship-to-ship operations allowed for better use of the maritime fleet, reducing the number of ships at terminals. Additionally, at the Suape and Rio Grande terminals, the expansion of these operations guaranteed compliance with our distribution targets and reduction of transportation costs.
### Main Sources

**From the Total Supply of Oil Products**

- **1.77 Million BBL/day** come from the production of our refineries.

- **195 Thousand BBL/day** were imported.

### Consumption

**We Sold**

- An average of **1.89 Million BBL/day** of oil product for the domestic market.

**Import of Oil Products**

- **239 Thousand BBL/day** in 2016.
- **181 Thousand BBL/day** in 2017.
- **195 Thousand BBL/day** in 2018.

### Export of Oil Products

- **155 Thousand BBL/day** in 2016.
- **157 Thousand BBL/day** in 2017.
- **178 Thousand BBL/day** in 2018.

### OIL PRODUCTS PRODUCTION

- **1,887 Thousand BBL/day** in 2016.
- **1,800 Thousand BBL/day** in 2017.
- **1,765 Thousand BBL/day** in 2018.

### Domestic Market Sales

- **2,064 Thousand BBL/day** in 2016.
- **1,940 Thousand BBL/day** in 2017.
- **1,887 Thousand BBL/day** in 2018.
Demand for 2018 was higher than in the previous year, which can be explained by the resumption of growth within the sector that has been taking place since May 2017.

The increase in sales in 2018 compared to 2017 is related to the increase in GDP and, mainly, to the reduction of third-party product placement via imports. The strike of the truck drivers in 2018 had negative impacts on consumption and product deliveries, even with the recovery of part of the market loss in June 2018.

Sales in 2018 were down from the previous year. In May 2018, the truck drivers’ strike had a negative impact on the demand for the oil product, which affected not only the sales, which was not fully offset in the following month, and the consumption, since the product did not reach the end consumer.

Sales in 2018 were down from the previous year. In May 2018, the truck drivers’ strike had a negative impact on the demand for the oil product, which affected not only the sales, which was not fully offset in the following month, and the consumption, since the product did not reach the end consumer.

The drop of sales in 2018 versus 2017 was due to the reduction in sales to Braskem which, since September 2017, increased its own import share.

Demand for 2018 was higher than in the previous year, which can be explained by the resumption of growth within the sector that has been taking place since May 2017.

There was a strong reduction in consumption in 2018 compared to 2017. The greater supply of energy through wind farms and large hydroelectric plants led to the smaller dispatch of complementary thermals in 2018. In addition, there were operational/environmental problems with a large consumer and the availability of product during the truck drivers’ strike.
OIL PRODUCT PRICES

DIESEL AND GASOLINE

Diesel and gasoline prices are defined taking into account the international parity price, margins to remunerate the risks inherent in the operation and the level of market share. Price adjustments can be made at any time, including daily.

For gasoline, in September 2018 we approved a derivative mechanism, aiming to give additional flexibility to the management of prices of this product, reconciling our business interests with the demands of our clients and other agents of the market. In December 2018, we approved a similar derivative mechanism for diesel. The derivative mechanism may be applied in times of high market volatility, in order to give a result equivalent to that obtained by the practice of daily adjustments, which also remains the Company’s option.

Thus, in 2018, we announced adjustments to selling prices at refineries, resulting in reductions of -10.9% for gasoline and -4.5% for diesel, comparing prices in force on December 31, 2018 with those that were effective as of December 31, 2017.

DIESEL SUBSIDY PROGRAM

On May 31, 2018, the Federal Government established the Economic Subsidy Program for the Diesel Oil Commercialization, with the purpose of encouraging the agents who act in the commercialization of the product to reduce their prices and to maintain them stabilized during predetermined periods of up to 30 days. Those who opted to join the Program, extended to all producers and importers, obtained reimbursement through evidence.

We joined the three phases of the Grant Program, receiving R$ 6,02 billion until February 15, 2019.

LIQUEFIED PETROLEUM GAS (LPG)

In June 2017, the price for the sale to Liquefied Petroleum Gas to distributors marketed in cylinders of up to 13 kg and residential use (GLP-P13) began to be formed by the average monthly prices of butane and propane in the European market, translated into Brazilian reals by the daily average of the dollar’s selling prices, as disclosed by the Central Bank, plus a margin of 5%.

In January 2018, we revised the LPG price policy for residential use, with the aim of smoothing the transfer of price volatility in the international market to the domestic price, changing the frequency of adjustments, which changed to quarterly rather than monthly.
Exports X Imports

Our oil exports reached 428 thousand bbl/day, a reduction of 16%, mainly due to the reduction of domestic oil production. Our exports of oil products totaled 178 thousand bbl/day, an increase of 13% compared to 2017.

Our oil imports totaled 154 thousand bbl/day, an increase of 21%, and oil products imports totaled 195 thousand bpd, an increase of 8%. The increase in the volume of imported oil products was mainly due to the increase in diesel demand due to the increase in market share. In addition, there was a need for imports due to the Replan accident.

In 2018, we maintained the position of net exporters of oil and oil products. The financial balance of our trade balance, based on oil and oil products’ exports and imports, disregarding natural gas, liquefied natural gas (LNG) and nitrogenous, featured US$ 7.2 billion in surplus.

### NET TRADE BALANCE RESULTS

(THOUSAND BBL/DAY)

<table>
<thead>
<tr>
<th>Year</th>
<th>Oil</th>
<th>Oil Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>251</td>
<td>-84</td>
</tr>
<tr>
<td>2017</td>
<td>385</td>
<td>-24</td>
</tr>
<tr>
<td>2018</td>
<td>274</td>
<td>-17</td>
</tr>
</tbody>
</table>
In the distribution of fuels and lubricants, we operate through our subsidiary Petrobras Distribuidora, which in 2017 opened its capital, ceasing to be a wholly owned subsidiary.

Petrobras Distribuidora is Brazil’s largest distributor in sales volume* and operates in the commercialization and distribution of oil products and biofuels throughout Brazil, through a network of 7,665 service stations and 16,000 consuming clients. It also operates in the chemical, aviation, asphalt, energy business and locally in the state of Espírito Santo, in the distribution of piped natural gas.

Our total participation in the domestic oil products’ market in 2018 was 28.7%*, being the leader in the network of service stations, consumer market (former large consumers) and aviation market, with 23.9%, 39.6%, and 54.2% of market share, respectively.

In 2018, Petrobras Distribuidora’s sales volume was 3.5% lower than 2017. It is worth noting that the lower dispatch to the thermals, the greater representativeness of ethanol in the Otto cycle mix in detriment to gasolines, as well as the operational restriction of a large fuel oil customer, as of March 2018, were relevant factors for the lowest sales volume in the period.
In the foreign market, we worked in the distribution segment in Colombia, Paraguay and Uruguay with 116, 196 and 88 service stations and 4%, 16.7% and 24.4% market share, respectively. With regard to Paraguay, the operation is in the process of divesting, with a contract of sale already signed, depending on the approval of the local authorities.

We also operate in the bottling, distribution and sale of liquefied petroleum gas (LPG) through the subsidiary Liquigás Distribuidora. The company has operations in 24 Brazilian states and in the Federal District, and its activities are segmented into two business areas: bottled, to serve residential consumption through approximately five thousand direct resellers; and bulk, in about 21 thousand customers of commerce, industry, condominium, agribusiness and services.

We are analyzing alternatives to Liquigás’ divestment, in line with our Business and Management Plan, which aims to optimize the business portfolio, fully exiting LPG distribution activities.

For more information on the liquidation process of Liquigás, please refer to Financial Capital.

### Natural Gas

#### Natural Gas Chain

One of our main strategic objectives in this segment is to maximize the value generation of the gas chain, based on the adequacy of our participation in each link in the production chain. In implementing this strategy, we will remain in a relevant position in the natural gas value chain, serving the market based on our supply portfolio.

#### Processing of Natural Gas

Natural gas from our exploration and production process needs to be processed in processing units, to be transformed into marketable products, which will serve as fuel and raw material for different uses, such as vehicular, industrial, residential, in the fertilizer industry and thermoelectric power generation.

Our natural-gas processing units are located in Amazonas, Ceará, Rio Grande do Norte, Alagoas, Sergipe, Bahia, Espírito Santo, Rio de Janeiro, São Paulo, and Bolivia, and have the capacity to process natural gas in its gaseous form and condensed.

In addition to the consumer market, a portion of the volume of processed gas is destined for reinjection in isolated areas and consumption in the processing units themselves.

2018

| 2018 | 65 MILLION M³/DAY AVERAGE TOTAL VOLUME OF NATURAL GAS processed in our units 9.3% lower than 2017 | After processing the natural gas the main products were: | In addition to the natural gas produced in Brazil, we also received natural gas from Bolivia through pipeline and liquefied natural gas, imported from other countries on special ships and regasified at terminals in Brazil.

| 65 MILLION M³/DAY PROCESSED NATURAL GAS ____________________________________________________________ 3,5 THOUSAND TON/DAY LPG |

| 53,1 MILLION M³/DAY PROCESSED NATURAL GAS | 3,5 THOUSAND TON/DAY LPG | 17 MILLION M³/DAY 13% lower than 2017 |

*In addition to the consumer market, a portion of the volume of processed gas is destined for reinjection in isolated areas and consumption in the processing units themselves.
We use a pipeline network that transports natural gas from processing plants, regasification terminals and the border with Bolivia, and takes the product to the local distributors and own units. We have the following shareholdings in gas transportation companies in Brazil:

**OUR PARTICIPATION IN THE NATURAL-GAS TRANSPORT SYSTEM IN BRAZIL**

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>GAS PIPELINE EXTENSION (KM)</th>
<th>OUR SHAREHOLDING (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportadora Brasileira Gasoduto Bolivia Brasil S.A. (TBG)</td>
<td>2,593</td>
<td>51% (via Logigás)</td>
</tr>
<tr>
<td>Transportadora Associada de Gás S.A. (TAG)</td>
<td>4,504</td>
<td>100%</td>
</tr>
<tr>
<td>Nova Transportadora do Sudeste S.A. (NTS)</td>
<td>2,043</td>
<td>10%</td>
</tr>
<tr>
<td>Transportadora Sulbrasileira de Gás S.A. (TSB)</td>
<td>50</td>
<td>25% (via Logigás)</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9,190</strong></td>
<td></td>
</tr>
</tbody>
</table>

In addition, abroad, we indirectly hold, via Logigás, an 11% stake in Gás Transboliviano S.A. (GTB), responsible for the Bolivian side of the Bolivia-Brazil gas pipeline, totaling 557 km.
In order to leach natural gas from our production of the Santos Basin pre-salt pole, in addition to using part of the existing infrastructure, we invest in the construction of flow routes integrated to the processing units, which seek to optimize the use of natural gas.

**Route 1**: 359 km pipeline consists of two stretches: the Lula-Plataforma stretch of Mexilhão and the stretch connecting the Mexilhão platform to the Monteiro Lobato Gas Treatment Unit, in the city of Caraguatatuba (SP), with capacity to flow up to 10 million m³/day of gas produced in the Santos Basin pre-salt.

**Route 2**: pipeline linking the Santos Basin pre-salt to the Cabiúnas Processing Asset, in the city of Macaé (RJ), with 401 km and initial capacity to flow 13 million m³/day, later increased to 16 million m³/day, with the implementation of a complementary treatment unit in the Cabiúnas Processing Asset. This complementary unit will also allow the disposal of this additional for processing in the units of Route 3 in the Comperj, when completed.

**Route 3**: gas pipeline that will connect the pre-salt to the Natural-gas processing Unit located at the Rio de Janeiro Petrochemical Complex (Comperj), in Itaboraí (RJ), for the disposal of up to 18 million m³/day. This gas pipeline will be 355 km long, of which 307 km will be offshore and 48 km onshore. The Natural-gas processing Unit will have two units with a total capacity of processing 21 million m³/day of natural gas, which will increase the supply of natural gas, LPG and natural gasoline (C5+) to the market. The start of operation of Route 3, which was scheduled for 2020, was rescheduled to 2021.
### SOURCES

**TOTAL OFFER NATURAL GAS**

48.9 million m³/day originated from national production

22.1 million m³/day were imported from Bolivia

6.8 million m³/day liquefied natural gas (LNG) were subject to regasification at the LNG terminals in Pecém (CE), at Baía de Guanabara (Rio de Janeiro) and in Bahia (BA)

### CONSUMPTION

**WE SUPPLY**

The average of 76.6 million m³/day natural gas

15 million m³/day for the internal consumption of our units

61.6 million m³/day to the market

**WE SELL**

Through 41 agreements with 19 distribution companies both for the thermoelectric segment, as for the non-thermal segment, including cogeneration units. Additionally, we serve two free consumers

**TOTAL VOLUME DELIVERED**

We delivered 23 million m³/day to the thermoelectric market

15 million m³/day to the refining units and fertilizer manufacturers

38.6 million m³/day to the gas distributors for supplying the non-thermoelectric market

1.2 million m³/day was consumed by the natural gas carriers hired by Petrobras for the provision of transport service.
The distributors provide the gas through their distribution networks to commercial establishments, residences, industries, vehicles and thermoelectric. This is how the end customer receives the natural gas.

In the natural-gas distribution business, we operate in Brazil and Uruguay.

In Brazil, we control 51% of Petrobras Gás S.A. (Gaspetro), a holding company that consolidates our equity interests in 19 of the 27 state natural gas distributors. In addition, Petrobras Distribuidora operates the distribution of natural gas in the state of Espírito Santo.

In Uruguay, through Petrobras Uruguay S.A. de Inversión, we hold stakes in two companies in the natural gas distribution business, responsible for distribution throughout the Uruguayan territory.

**NATURAL-GAS DISTRIBUTORS**

**NATURAL GAS VOLUME SOLD AND NUMBER OF CLIENTS**

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BRAZIL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of clients (thousands)</td>
<td>351</td>
<td>402</td>
<td>456</td>
</tr>
<tr>
<td>Volume (million m$^3$/d)</td>
<td>21</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td><strong>URUGUAY</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of clients (thousands)</td>
<td>59</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>Volume (million m$^3$/d)</td>
<td>0.18</td>
<td>0.16</td>
<td>0.16</td>
</tr>
</tbody>
</table>

*Distributors with participation of Gaspetro
ELECTRICITY

We operate in the generation and sale of electric power from a generator park consisting of 20 thermoelectric plants, owned and leased, powered by natural gas, diesel or fuel oil, with a total installed capacity of 6,100 MW.

In 2018, due to the increase in the storage of the reservoirs supplying the hydroelectric plants of the National Interconnected System (SIN), as a consequence of the favorable hydrological scenario observed throughout the year, the thermoelectric dispatched of our plants decreased, especially in the second half of the year due to the higher cost of imported natural gas, reducing the generation by 30% compared to 2017.

We also have plants with generation through renewable sources and minority participation in other projects, which add up to 325 MW to our electricity generation capacity.

The segments of the electric energy market in Brazil involve the Free Marketing Environment (ACL) and the Regulated Marketing Environment (ACR).

SALES AND GENERATION OF ELECTRICITY

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Sales (ACL) - average MW</td>
<td>835</td>
<td>788</td>
<td>832</td>
</tr>
<tr>
<td>Electricity Sales (ACR) - average MW</td>
<td>3,172</td>
<td>3,058</td>
<td>2,788</td>
</tr>
<tr>
<td>Electricity generation - average MW</td>
<td>2,252</td>
<td>3,165</td>
<td>2,205</td>
</tr>
</tbody>
</table>

The sales of electricity in the ACR reduced in average 270 MW, due to the termination of the contracts of the 14th Existing Energy Auction, category of auctions intended to serve the distributors from energy coming from operating projects.
OTHER SEGMENTS

We are also present in the petrochemical, renewable energy and fertilizer sectors. Our strategy is to maximize our value through active portfolio management, as in the case of petrochemicals, which should be integrated with national oil and gas production activities. In addition, we anticipate the exit of some of our businesses, such as fertilizers and production of biodiesel and ethanol, maintaining the investment in research and development in these areas, in order to enable us to act future in these segments.

Petrochemicals

Our operations in the petrochemical industry occur through participation in the following companies:

CORPORATE PARTICIPATIONS IN THE PETROCHEMICAL SECTOR

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>PRODUCT</th>
<th>PARTICIPATION (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braskem S.A.</td>
<td>Ethene, polyethylene, polypropylene and PVC</td>
<td>36.2</td>
</tr>
<tr>
<td>Deten Química S.A.</td>
<td>Raw material for detergents: linear alkylbenzene (LAB), linear alkylbenzene sulfonic acid (LAS), heavy alkylation (ALP)</td>
<td>27.88</td>
</tr>
<tr>
<td>Metanor S.A./Copenor S.A.</td>
<td>Methanol, formaldehyde and hexamine</td>
<td>34.54</td>
</tr>
<tr>
<td>Fábrica Carioca de Catalisadores</td>
<td>Catalysts and additives</td>
<td>50</td>
</tr>
<tr>
<td>Petrocoque S.A.</td>
<td>Calcined petroleum coke</td>
<td>50</td>
</tr>
<tr>
<td>Companhia Petroquímica de Pernambuco (Petroquímica-Suape)</td>
<td>Purified terephthalic acid (PTA)</td>
<td>0</td>
</tr>
<tr>
<td>Companhia Integrada Têxtil de Pernambuco (Citepe)</td>
<td>PET resin (polyethylene terephthalate) and polyester filaments</td>
<td>0</td>
</tr>
</tbody>
</table>

There is an ongoing negotiation between the Dutch company LyondellBasell and Odebrecht S.A. for the purchase of its shares in Braskem. If the negotiation is successfully concluded, we will analyze the terms and conditions of the LyondellBasell offer, in order to evaluate the exercise of our rights set forth in the Shareholders’ Agreement of Braskem S.A.

In April 2018, 100% of the shares held by Petrobras in the companies PetroquímicaSuape and Citepe were sold to Grupo Petrotemex S.A. de C.V. and Dak Americas Exterior, SL, both subsidiaries of Alpek.
Renewables

In our Business and Management Plan 2019–2023, we plan to operate in the renewable-energy businesses in a profitable way, focusing on wind and solar in Brazil.

We will implement the first offshore wind pilot plant in Brazil. The pilot plant will consist of an anemometric tower and an offshore wind generator with a 6 MW power or more, electrically connected to one of our platforms. Installed about 20 km off the coast of Guamaré, Rio Grande do Norte, the full operation of the pilot plant is expected in 2022.

In addition, in 2018, we signed a memorandum of understanding with the Norwegian company Equinor to jointly develop business in the offshore wind energy segment in Brazil.

These initiatives seek to increase our activity in wind energy, since we already have holdings in four onshore generation plants in Guamaré/RN.

ONSHORE WIND ENERGY PARTICIPATIONS

<table>
<thead>
<tr>
<th>PLANTS</th>
<th>CAPACITY (MW)</th>
<th>%</th>
<th>MW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mangue Seco 1</td>
<td>26.0</td>
<td>49</td>
<td>12.7</td>
</tr>
<tr>
<td>Mangue Seco 2</td>
<td>26.0</td>
<td>51</td>
<td>13.3</td>
</tr>
<tr>
<td>Mangue Seco 3</td>
<td>26.0</td>
<td>49</td>
<td>12.7</td>
</tr>
<tr>
<td>Mangue Seco 4</td>
<td>26.0</td>
<td>49</td>
<td>12.7</td>
</tr>
<tr>
<td>TOTAL</td>
<td>104.0</td>
<td>49.5</td>
<td>51.5</td>
</tr>
</tbody>
</table>

In solar energy, we have the Alto Rodrigues Photovoltaic Unit (UFWVAR), a pilot plant located in Rio Grande do Norte, consisting of five different photovoltaic generation technologies, with installed capacity of 1.1 MW.

We also operate in the production of biodiesel and ethanol, through our wholly owned subsidiary Petrobras Biocombustível, which manages our activities in the areas of production, logistics and marketing of these products.

<table>
<thead>
<tr>
<th>BIOFUELS PRODUCTION* (THOUSAND MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
</tr>
<tr>
<td>Biodiesel</td>
</tr>
<tr>
<td>Ethanol (Anhydrous and Hydrated)</td>
</tr>
</tbody>
</table>

* Considers 100% of the volume of affiliates.

In February 2018, Petrobras Biocombustível sold the shares of São Martinho S.A. owned by the company. In the same month, we announced the non-binding phase of the divestment process regarding the sale of 100% of the shares held by Petrobras Biocombustíveis in the company BS BIOS.

Fertilizers

<table>
<thead>
<tr>
<th>FERTILIZER PRODUCTION (THOUSAND TONS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
</tr>
<tr>
<td>Ammonia</td>
</tr>
<tr>
<td>Urea</td>
</tr>
</tbody>
</table>

We currently have three plants located in the states of Bahia, Sergipe and Paraná, whose main products are ammonia and urea. Together these plants have an installed capacity of 1.852 million tonnes/year of urea, 1.406 million tonnes/year of ammonia, 319 thousand tonnes/year of ammonium sulphate and 800 thousand tonnes/year of ARLA-32.

The process of selling the company Aracuária Nitrogenados S.A. (Ansa), and the Fertilizer Unit-III (UFN-III), was suspended due to a judicial decision in June 2018, and resumed in January 2019.

In March 2018, we decided to hibernate our nitrogen fertilizer plants located in Sergipe (“Fafen-SE”) and Bahia (“Fafen-BA”), whose process was postponed until February 1, 2019, when we started the hibernation of Fafen-SE. In relation to Fafen-BA, the intention of its hibernation remains, which, by a preliminary decision of January 31, 2019, is suspended. We continue with the bidding process to lease these units to third parties.
Consolidated Financial Performance

We presented a solid result in 2018, achieving historical records in the free cash flow and adjusted EBITDA, and the interruption of four consecutive years of losses.

Operating income in 2018 was R $ 62,957 million, 77% higher, reflecting higher prices of oil products in the domestic market, mainly diesel and gasoline and exports, in line with the 31% increase in Brent’s price and a 14% real depreciation. Such factors were mitigated by the decrease in the total volume of sales of oil products and exports, in addition to the increase in selling expenses, higher expenses with government participation and imports and the occurrence of special items.

Net income in 2018 was R$ 25,779 million, reflecting the higher operating income and the improvement in the financial result, due to lower interest expenses, as a result of lower indebtedness and higher financial income due to gains from the renegotiation of debts of the electric sector.

Adjusted EBITDA reached R$ 114,852 million, an increase of 50%, because of higher margins in domestic and export sales, in line with the increase in Brent and the reduction in operating expenses. The Adjusted EBITDA margin increased significantly, from 27% to 33%.

Free cash flow of R$ 54,600 billion was 24% higher than in 2017, reflecting the 11% increase in operating cash generation and maintaining the same level of investments as the previous year.
Strategic Plan and Business and Management Plan
Evolution Management System – from Strategy to Implementation
Strategic Plan and Business and Management Plan

Technological innovations, regulatory advancement and the adoption of new strategies by companies point to a period of energy transition towards low carbon economy. The scope and pace of these transformations are still uncertain. In the same way, it is not clear what the prevailing business models will be in this new environment. These issues not only make long-term strategic planning even more complex, but also reinforce its importance for business resilience in this context of major challenges.

LONG-TERM SCENARIOS

To better deal with this high degree of uncertainty, we are constantly improving our methodology and monitoring our scenarios. During the year 2018, we carried out an intense process of updating our scenarios, as well as extending our horizon of analysis until 2040. Now our visions of the future are better suited to evaluating long-term maturing projects. It is based on the scenarios that elaborate the premises used for the analysis of the investment projects and for the quantification of the company's strategic and business plans.
STRATEGIC PLAN 2040

Our 2040 Strategic Plan and our 2019–2023 Business Plan are focused on oil and natural gas exploration and production, notably in the Brazilian pre-salt area, which is one of our greatest strengths and source of value creation. In the medium term, we expect that the use of natural gas as a source of energy generation will gain more relevance in our operations, in accordance with energy transition trends. In the long term, we plan to study opportunities in renewable energies that have synergies with our activities and competitive advantages. In this way, we will work towards a more environmentally sustainable portfolio. Digital technology should permeate our activities along this timeframe with the goal of cost reduction and increase in productivity.

The company’s strategies were adjusted, defining the focus of our actions by business segment:

<table>
<thead>
<tr>
<th>BUSINESS SEGMENT</th>
<th>STRATEGIC FOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPLORATION &amp; PRODUCTION</td>
<td>Maximize our value through active management of the E&amp;P portfolio;</td>
</tr>
<tr>
<td>NATURAL GAS</td>
<td>Ensure the sustainability of oil and gas production, prioritizing activities in deepwaters.</td>
</tr>
<tr>
<td>REFINING, TRANSPORTATION,</td>
<td>Maximize our value through active management of our portfolio for refining, logistics, trading and petrochemicals integrated into the activities of national oil and gas production;</td>
</tr>
<tr>
<td>MARKETING AND PETROCHEMICAL</td>
<td>Leave the fertilizer business, LPG distribution, biodiesel and ethanol holdings and production.</td>
</tr>
<tr>
<td>RENEWABLES</td>
<td>Operate in profitable renewable energy businesses, with focus on wind and solar energy in Brazil.</td>
</tr>
<tr>
<td>CORPORATE STRATEGIES</td>
<td>Develop critical skills and a culture of high performance to meet the company’s new challenges;</td>
</tr>
<tr>
<td></td>
<td>Prepare us for a more competitive environment based on cost and scale efficiency and digital transformation;</td>
</tr>
<tr>
<td></td>
<td>Assess current and future partnerships seeking integrity and value creation;</td>
</tr>
<tr>
<td></td>
<td>Strengthen the credibility, the pride and the reputation of Petrobras among our stakeholders.</td>
</tr>
</tbody>
</table>

For more information on our competitors, please refer to Reference Form (item 10.8), available at our website: www.petrobras.com.br/ri
BUSINESS AND MANAGEMENT PLAN 2019-2023

Our 2019-2023 Business and Management Plan (PNG 2019-2023) details operational planning, focusing on safety, as well as financial performance and the profitability in our business for the next five years.

PNG incorporates a new metric, seeking to ensure profitability, in addition to maintaining the safety and debt reduction metrics originally defined in PNG 2017-2021 and maintained in PNG 2018-2022. These metrics guide our strategic actions and are deployed at all organizational levels.

Our Plan also brings a commitment to the decarbonization of processes and products, with establishment of a zero growth of the absolute operational emissions* in the horizon until 2025, considering 2015 as a reference, even with the increase in production.

Targets are being set to reduce our emissions intensity by 32% in E&P and 16% in Refining between 2015 and 2025, when we aim to reach 15 kg CO₂e/boe in E&P and 36 kg CO₂e/t CWT in Refining.

* Excluding situations of national water stress.

For more information on our emissions’ targets, please refer to Sustainability 2018 and Climate change notebook.

ASSUMPTIONS OF THE PNG 2019-2023

Among the main assumptions that impact our business are the Brent oil price and the exchange rate. In our PNG 2019-2023, we consider the following values for these variables:

BRENT PRICES (US$/BARREL)

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecast Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>57</td>
</tr>
<tr>
<td>2016</td>
<td>47</td>
</tr>
<tr>
<td>2017</td>
<td>57</td>
</tr>
<tr>
<td>2018</td>
<td>71</td>
</tr>
<tr>
<td>2019</td>
<td>71</td>
</tr>
<tr>
<td>2020</td>
<td>67</td>
</tr>
<tr>
<td>2021</td>
<td>72</td>
</tr>
<tr>
<td>2022</td>
<td>75</td>
</tr>
<tr>
<td>2023</td>
<td>75</td>
</tr>
</tbody>
</table>

NOMINAL EXCHANGE RATE (R$/US$)

<table>
<thead>
<tr>
<th>Year</th>
<th>Forecast Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>3.3</td>
</tr>
<tr>
<td>2016</td>
<td>3.5</td>
</tr>
<tr>
<td>2017</td>
<td>3.2</td>
</tr>
<tr>
<td>2018</td>
<td>3.7</td>
</tr>
<tr>
<td>2019</td>
<td>3.6</td>
</tr>
<tr>
<td>2020</td>
<td>3.7</td>
</tr>
<tr>
<td>2021</td>
<td>3.7</td>
</tr>
<tr>
<td>2022</td>
<td>3.7</td>
</tr>
<tr>
<td>2023</td>
<td>3.8</td>
</tr>
</tbody>
</table>

* Excluding situations of national water stress.
Investments

The PNG 2019-2023 investment portfolio totals US$ 84.1 billion.

Exploration and production continue as the company’s most important value-generating engine, with a focus on the development of deepwater and ultra-deepwater production, particularly in the pre-salt areas. Refining, transportation and marketing will continue to operate in an integrated manner with E&P, but with a new participation model from Petrobras, considering the partnership with other companies. With the expansion of gas production, the company will seek greater value generation, considering natural gas as a vehicle for growth and establishing a global position for Petrobras. In the long term, we will study opportunities in renewable energies that have synergies with our activities and competitive advantages.
In 2019, the oil production growth will be 10% in Brazil and 7% in total production, due to the entry into operation of four new systems in 2018 and four in 2019. For the period between 2020 and 2023, total production of oil and natural gas will grow at an average rate of 5% a year.

With regard to refining, the plan provides for repositioning in the segment through partnerships and divestments, allowing the sharing of business risks and the establishment of a more dynamic, competitive and efficient sector, in addition to generating liquidity for the company.

REFINING AND NATURAL GAS INVESTMENTS 2019-2023 (%)

- 13.9 US$ BILLION
- 36
- 61
- REFINING, TRANSPORTATION, MARKETING
- PETROCHEMICALS AND DISTRIBUTION
- NATURAL GAS AND POWER
- RENEWABLES

* Unit, previously scheduled to come into operation in December 2018, began production on February 1, 2019.
**Operational Costs**

We continue our efforts to identify opex optimization opportunities.

Petrobras will continue the divestment projects already announced and will continue with partnerships and divestments guided by active portfolio management, with potential cash inflow in the plan period of US$ 26.9 billion.

We intend to perpetuate a culture of cost optimization with the objective of obtaining a greater efficiency and rationality in the use of resources.

This ongoing cost efficiency and cost of extraction, on average in the pre-salt less than US$ 7/boe, will lead to an average extraction cost of less than US$ 10/boe from 2020.

Through cost discipline, debt reduction and commitment to profitability, the company estimates a generation of robust free cash flow in the PNG period.

These initiatives, coupled with an operating cash generation estimated at US$ 114.2 billion, after dividends, taxes and contingencies, will allow us to realize our investments.
Evolution Management System - from Strategy to implementation

Our strategies and metrics defined in the Business and Management Plan (BMP) are broken down into individual goals and make up the scorecard of the company’s areas. All leadership is involved, both in setting goals and in periodic follow-up.

BMP monitoring is performed through the called Evolution Management System. Through corporate governance, we monitor the results on a monthly basis and define recovery actions if deviations are identified. In this way, the areas become clear about their contribution to the achievement of our results, and managers are evaluated in a meritocratic way, according to their performance in meeting the goals defined for the organizational units under their management.

The Evolution Management System tracks four fronts of value generation to comply with our strategies: capital discipline, processes and costs efficiency, active portfolio management and revenue optimization. Security, cultural transformation, innovation and sustainability are the pillars that sustain actions on these four fronts.
Corporate Governance

Since 2015, we announced and implemented a series of measures to improve our governance and reverse the problems and challenges highlighted by Operation Car Wash (Lava Jato). As one of the key actions, we have established a new corporate governance model and created a set of rules and procedures that seek to ensure that future decisions are in line with good governance.

Our corporate governance structure consists of: General Shareholders’ Meeting, Audit Committee/Fiscal Council, Board of Directors and its committees, Audits (Internal and External), General Ombudsmans Office, Executive Board and its committees, as shown below.

Until November 2018, we had a Special Investigation Committee, created in December 2014, to act as an interlocutor for independent investigations conducted by external offices, regarding the implications of Car Wash Operation.

The recommendations from this committee allowed us to strengthen our internal controls; advances in relation to corporate governance; and the implementation of additional mechanisms for prevention, detection, internal investigation and remediation of irregularities.

The activities of the Special Committee and external offices are now carried out, on a permanent basis, by the relevant areas of Petrobras, which are duly structured for this purpose. Thus, there will be no impact to our actions to determine irregularities, including in relation to Car Wash Operation, which is still ongoing.
**BOARD OF DIRECTORS**

The Board of Directors shall be formed by seven to eleven members, where at least 40% of such members must meet the independence criteria.

<table>
<thead>
<tr>
<th>EMPLOYEES</th>
<th>CONTROLLING SHAREHOLDER</th>
<th>MINORITY SHAREHOLDERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CEO</td>
<td>CHAIRMAN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PN</td>
</tr>
</tbody>
</table>

**CURRENT BOARD PROFILE**

- **10 DIRECTORS**
  - 40% Economics
  - 10% Engineering
  - 10% Management/Accounting
  - 10% Military
  - 10% Law

- Experience in executive positions and in the board of public and private sector companies
- 70% of independent members
- 30% female participation
- Diversity in composition and complementarity experience of members

**COMMITTEES**

<table>
<thead>
<tr>
<th>BOARD OF DIRECTORS MEMBERS</th>
<th>STRATEGIC</th>
<th>FINANCIAL</th>
<th>AUDIT</th>
<th>HEALTH, SAFETY, AND ENVIRONMENT</th>
<th>NOMINATION, COMPENSATION AND SUCCESSION</th>
<th>MINORITY</th>
<th>AUDIT OF THE PETROBRAS CONGLOMERATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ana Lúcia Poças Zambelli</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarissa de Araújo Lins</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jerônimo Antunes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marcelo Mesquita de Siqueira Filho</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segen Farid Estefen</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sonia Julia Sulzbeck Villalobos</td>
<td></td>
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</tbody>
</table>

1. Eduardo Bacellar Leal Ferreira and João Cox Neto have recently been vested in office and do not participate in any committee as members.
2. CEO and employee representatives participation as members in the committees is prohibited.
3. Committee with external member in the composition.

**EXECUTIVE BOARD**

The Executive Board must be composed of one CEO and seven Executive Officers.

- The CEO is chosen by the Board of Directors from among Board members.
- The nomination of the members must abide by the professional capacity, undisputed knowledge and expertise in the area of performance.
- The appointment of members must meet minimum requirements, including ten years leadership experience in the business or in related area.
- We have specific rules and requirements in place for the election and dismissal of the Governance and Compliance Executive Officer, who is guaranteed the possibility of reporting directly to the Board of Directors in certain cases.
GOVERNANCE: MAIN IMPROVEMENTS

In recent years, we have promoted a number of actions to strengthen our governance, whether voluntary, legal or in compliance with the requirements of the governance regulations adopted by the company, in order to establish best practices in line with our strategy and to contribute to the long-lasting and perennial evolution of our governance.

- Public Policies and Corporate Governance Annual Charter.
- Definition of Public Interest – Transparency and mechanisms of compensation in the performance of public policies.
- Transparency Portal.
- Report on the Brazilian Code of Corporate Governance.
- Restructuring of the Ombudsman’s Office and of the external and independent whistleblowing channel.
- Integrity Criteria and tighter Requirements for the appointment of the senior managers, executive officers and Directors.
- Implementation of shared authorization in Company’s decision.
- Creation of statutory technical committees to advise the Executive Board members and Board of Directors members.
- Independent Governance and Compliance Department. The appointment and dismissal of Governance and Compliance Officer is subject to specific requirements.

Possible initiatives to change these practices requires formality and transparency, being necessary, in most cases, a shareholders’ meeting or a legislative amendment.
Our advances in governance, reaffirming our commitment to continuous improvement in governance and alignment with best market practices, have been recognized:

- We maintained the maximum score (10) in the 2nd and 3rd cycles of the Governance Indicator (IG-SEST), prepared by the Secretariat of Coordination and Governance of State Enterprises (Sest). With these results, we have maintained Level 1 of governance in all assessment cycles conducted by Sest.

- Adherence to B3’s special Corporate Governance Level 2 listing segment.

**BYLAWS**

The revision of the Bylaws in 2018 included, among other things, the following changes:

**Greater independence of directors**: approval of the minimum percentage of 40% of independent members for the Board of Directors, with this percentage applied to the total number of directors. In addition, the members of the Council to be nominated by the Federal government for meeting the minimum number of independents shall be selected from a triple list, drawn up by a specialized company with proven experience, and interference in this list shall not be allowed and shall be the sole responsibility of the company.

**Creation of the Statutory Audit Committee of the Petrobras Conglomerate**, in compliance with the Act No. 13,303/2016 and Decree No. 8,945/2016. The purpose of this committee is to advise the Board of Directors of Petrobras, for companies that do not have their own Statutory Audit Committee.

**Indemnity Agreement**: inclusion of the possibility of entering into indemnity agreements with the members of the Board of Directors, Audit Committee, Executive Board, committees and all other employees and agents legally acting by delegation of the company’s administrators, in order to cope to certain expenses related to arbitration, judicial or administrative proceedings involving acts committed in the exercise of their duties or powers, subject to certain established rules and conditions.

**INTEGRATED GOVERNANCE PANEL**

We implemented the Integrated Governance Panel allowing the analysis of the portfolio of invested companies from the perspective of the investor/holding, measuring the added value of each part for the result of Petrobras, and using corporate measures on the return and minimum rates of attractiveness, in addition to the monitoring of corporate information. We held a strategic alignment event of the companies of the Petrobras, and methodological and content evaluation of the 2019-2023 Business and Management Plans of the most significant controlled companies.
REGULATION OF BIDS AND CONTRACTS

The Act 13.303/2016 (State Companies Act) introduced new procedures for public companies’ bids and contracts. In compliance with such law, the Petrobras Bid and Contracts Regulation (RLCP) was issued, which came into force in January 2018, and was fully implemented in May 2018, before the legal deadline. The RLCP presents the new ways of contracting, the stages to be covered in the bids, the contractual management and the auxiliary procedures, including the suppliers register. One of the main themes brought by the new legislation concerns the regulation of hiring, with changes and innovations in relation to the standards in force until then. The law determines that all contracting must be carried out, as a rule, through public bidding, that is, they will be open to any interested parties that are able to comply with the bidding rules. This innovation increases the participation of suppliers and the transparency of processes.

For more information about the changes brought by Act 13.303/2016, please refer to our website Contract Rules: https://canalfornecedor.petrobras.com.br

OUR POLICIES

In compliance with the State Companies Act, the B3 Achievement in State Governance Program and the new CVM instructions, we made changes to the following policies in 2018:

Corporate and Shareholding Governance Policy: created for application to the entire, its objectives are to contribute to ensure our sustainability and the perpetuation of best governance practices; improve decision making in senior management, as well as the company’s planning processes, controls and performance; increase transparency and dissemination of information; strengthen the company’s corporate image and reputation; and generate value for shareholders and other stakeholders in an ethical and sustainable manner.

Shareholder Remuneration Policy: replaces the Dividend Distribution Policy and its principles are, inter alia, to establish the rules and procedures related to the distribution of dividends and/or interest on shareholders’ equity, in a transparent manner and in accordance with the legal, statutory and other internal regulations.

For more information on Corporate Governance, visit our website: Corporate Governance/Governance Instruments.

PETROBRAS’ CODE OF GOOD PRACTICES

Our Code of Good Practices brings together the main governance policies:

- Policy for Relevant Act or Fact Disclosure and Securities Trading
- Policy for Nomination of Members of the Audit Committee, Board of Directors, Executive Board and Positions of the General Structure of Petrobras and Petrobras System Companies
- Petrobras’ Corporate Compliance Policy
- Corporate Risk Management Policy
- Ombudsperson Activities’ Policy
- Shareholder Remuneration Policy
- Communications Policy
- Related Party Transactions Policy
- Shareholder and Corporate Governance Policy

For more information, visit our website: www.petrobras.com.br/ri

Our policies are available at: www.petrobras.com.br/ri
**OPERATION CAR WASH (LAVA JATO)**

We do not tolerate any practices of corruption and consider inadmissible any practice of unlawful acts involving our employees and suppliers. We are officially recognized as a victim of the crimes determined in Operation Car Wash. For this reason, we serve as prosecution assistants and interested parties in 59 criminal actions filed as a result of Operation Car Wash. We await deferral of the authorization in three more suits. The suits aim at imputations of crimes of criminal organization, corruption, money laundering and fraud in bidding, among others.

We continue to follow up the investigations and to collaborate effectively with the work of the competent authorities to elucidate the facts.

We present to the competent authorities the results of investigations of non-conformities made by internal committees established to investigate possible irregularities in contracts with service providers.

For certain companies investigated by Operation Car Wash, since 2014 we have had precautionary blocking measures that prevent them from participating in new bids and concluding new contracts with us. On a case-by-case basis, these blockages may be lifted to the extent that the supplier cooperates with the authorities’ investigations and undergoes the Integrity Due Diligence process, which includes verification of the existence and application of an effective integrity program based on the parameters set forth in article 42 of Decree No. 8,420/2015.

In addition to the search for the application of sanctions to individuals and legal entities that perpetrated the crimes revealed by Operation Car Wash, we have taken the necessary measures to recover all damages suffered as a result of these acts, including those related to our corporate image. In order to do so, we joined 16 public civil actions for acts of administrative misconduct up to November 2018, and thus, Petrobras participates as a co-author (sometimes alongside the MPF, others jointly with the Federal government, or with the integration of both) of demands that aim at full reparation, including a request for compensation for moral damages. In addition, as investigations result in leniency agreements with investigated companies or plea agreements with individuals who agree to return assets, we may be entitled to receive a portion of them. Therefore, R$ 3,240,183,809.53 have already been returned to our cash account as compensation for damages, provided for in leniency agreements and plea and repatriation agreements, until December 2018.

In addition, due to the existence of *American Depositary Receipts* (ADRs) traded on the New York Stock Exchange, the facts disclosed in Operation Car Wash led to the initiation of investigations by the US Securities and Exchange Commission and the US Department of Justice (DoJ) in 2014, with which Petrobras has fully cooperated. In September 2018, we announced the closing of agreements related to the company’s internal controls, accounting records and financial statements for the period 2003 to 2012, which completely closed the investigations of the US authorities.

Under its terms, Petrobras will pay US$ 85.3 million to the DoJ and US$ 85.3 million to the SEC. In addition, the agreements recognize the allocation of US$ 682.6 million to Brazilian authorities. This amount was deposited by Petrobras in January 2019, according to the Assumption of Commitments’ Agreement signed with the Federal Public Prosecutor’s Office.

Through the agreements, DoJ and SEC recognize developments in Petrobras’ compliance program, internal controls and anti-corruption procedures. We have agreed to continue evaluating and improving these measures.
CLASS ACTION AND RELATED PROCESSES

Between December 2014 and January 2015, five class actions were filed against Petrobras before the Federal Court for the Southern District of New York, in the United States. These lawsuits were subsequently consolidated in a class-action lawsuit, where the plaintiffs alleged that we had allegedly reported materially false information and committed omissions capable of misleading investors.

In January 2018, we announced that an agreement was reached to terminate the collective action in which we pledged to pay US$ 2.95 billion in three installments, the last being paid in January 2019. This agreement was subject to appeal by some investors, with one remaining pending judgment. If the higher courts annul the agreement, or if the agreement does not become final for other reasons, the company will return to the position it was in prior to the Collective Action Agreement.

Individual Actions

In addition to the consolidated collective action, 34 individual lawsuits were filed by investors in the United States, with claims similar to those filed in the class-action lawsuit, all of which were terminated, either by agreement or by the adhesion of some investors to the class action agreement.

Collective action in the Netherlands

In January 2017, the Stichting Petrobras Compensation Foundation filed a lawsuit in The Netherlands, in the District Court of Rotterdam, against Petrobras, some of its subsidiaries and former managers of the company.

The Foundation alleges that it represents an unidentified group of investors and requires a judicial declaration attesting to the illegality of acts allegedly carried out by the defendants, based on facts revealed by Operation Car Wash and on alleged false financial information disclosed by the company.

In view of the present uncertainties, it is impossible to make any secure assessment of risks related to this litigation. We deny the allegations made by the Foundation, and we are firmly defending ourselves in this action.

Other related proceedings

We are parties to arbitrations and judicial proceedings in Brazil, which, from a representative point of view, are currently in their initial stages. These lawsuits were filed by investors who bought shares in B3 and alleged losses resulting from the actions revealed by Car Wash Operation.
Compliance and Internal Controls

We work in the dissemination of a compliance culture, in the prevention, detection and correction of incidents of fraud, corruption and money laundering, in the management of our internal controls, in the integrity analysis of managers and counterparts, in order to guarantee an ethical environment for our Business.

We have a Compliance Policy that describes and discloses our commitments to the promotion of the highest ethical and transparency values in conducting our business, with zero tolerance to fraud, corruption and money laundering.

In order to integrate and strengthen compliance initiatives, we have, in addition to the Corporate Compliance Policy, the Code of Ethics, the Conduct Guide and the Petrobras Corruption Prevention Program (PCPP).

In order to update the documents, in 2018 Petrobras' Ethics Committee conducted a revision of the Petrobras Group Conduct Guide and Code of Ethics – based on the experience accumulated by the Committee, benchmark in related documents; compliance with relevant legislation and internal regulations; recommendations of control bodies; and consultations with employees, areas and subsidiaries of Petrobras.

Additionally, ethics management training was conducted among the members of the Board of Directors, with the participation of members of the Executive Board.

For more information on ethics, please refer to Sustainability 2018.
PETROBRAS CORRUPTION PREVENTION PROGRAM (PCPP)

- The PCPP is driven by continuous actions of prevention, detection and correction of acts of fraud, corruption and money laundering.

- Intended for our various stakeholders, such as customers, suppliers, investors, partners, public authorities, employees and contractors.

- The program is continually improved and adheres to best market practices and anti-corruption laws, especially Law No. 12.846/2013; Foreign Corrupt Practices Act (FCPA), the United States anti-corruption law from 1977; and UK Bribery Act (UKBA), the British anti-corruption law from 2010.

In line with our goal of being a benchmark in ethics and integrity, in 2018, we enhanced initiatives to mitigate the possibility of acts being taken to nullify or violate existing or acting controls inconsistent with our internal policies and standards, as well as laws applicable to our operations. All controls are part of a set of new procedures and actions for governance and compliance improvements. The main actions implemented were:

<table>
<thead>
<tr>
<th>INITIATIVE</th>
<th>DEFINITION</th>
<th>IMPROVEMENTS 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance Policy</td>
<td>It describes and publicizes our commitments to the promotion of the highest</td>
<td>Revised and approved by the Top Management, it includes an even more accessible language with updating and strengthening of themes such as prevention actions; transparency and accessibility of information; leaders’ responsibility for strengthening the business environment; influence of Petrobras in relation to other companies in the adoption of compliance practices.</td>
</tr>
<tr>
<td></td>
<td>ethical values and transparency in the conduct of our business, with zero</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tolerance to fraud, corruption or money laundering.</td>
<td></td>
</tr>
<tr>
<td>Disciplinary Measures Committee</td>
<td>Created to strengthen our system of consequences, guiding, standardizing and monitoring the application of sanctions in cases related to fraud, corruption, nepotism or conflict of interest.</td>
<td>In 2018, in addition to changing the name to Disciplinary Measures Committee, the new structure of the body was approved, and the scope of action and its attribution were broadened. The Committee will be composed by three members dedicated exclusively to the activity, with at least two selected externally, responsible for defining the sanction for matters related to fraud, corruption, nepotism or conflict of interests, and for the new topics included within the scope which deal with patrimonial and off-balance damages, sexual and moral harassment and Administrative Accountability Procedures (PAR).</td>
</tr>
<tr>
<td>(formerly Sanctions Committee)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethics and Integrity Moment</td>
<td>A moment dedicated to discussing issues related to ethics and integrity</td>
<td>Inclusion of the ethical and integrity moment before the opening of the meetings of the Executive Board, Board of Directors and institutional events.</td>
</tr>
<tr>
<td>Internal Investigation Process</td>
<td>Internal investigations of suspicion of non-compliance, regarding issues of fraud and corruption, clarifying facts and defining responsibilities.</td>
<td>Review of the investigation process of issues related to fraud and corruption, expanding the mechanisms for prevention and detection of misconduct, based on greater use of technology, increase in the structure and specialization of the teams responsible for the investigation.</td>
</tr>
</tbody>
</table>
In 2018, we continued the initiatives of previous years, with emphasis on the following.

**Integrity Background Check**, a procedure that aims to assist the manager in making decisions related to the degree of exposure to integrity risks of those appointed by Petrobras to act in key positions at the company, its subsidiaries, affiliates, and affiliated companies. In 2018, 2,307 integrity evaluations were conducted by Petrobras for key positions at the company.

**Compliance Training**: We have started a continuous cycle of mandatory training, called “Commitment to Compliance Trail,” which will help employees identify compliance risks and how to act in these situations. The training involves top management, managers, consultants, and employees of all careers. For those employees who work in activities with greater exposure to compliance risks, such as procurement staff and contract supervisors and managers, specific modules are offered. In 2018, more than 40 thousand employees were trained.

**Integrity Due Diligence (IDD)** of counterparties aims to evaluate integrity risks inherent to our relationship with suppliers of goods and services, clients in the trading of oil and oil products, institutions in projects of sponsorship and agreements related to the duties of Communication and Social Responsibility and companies interested in asset divestment processes and/or corporate equity, strategic and operational partnerships. The result of IDD is expressed by the Degree of Integrity Risk (GRI) and is considered by our managers in the decision-making process. In 2018, 4,873 counterparties were evaluated.

**INTERNAL CONTROLS**

As part of our compliance process, we have an internal control system that ensures the mitigation of corporate risks of strategic, business, financial, and compliance nature, providing reasonable security in achieving our objectives.

From a risk analysis, we identify the most sensitive processes and develop appropriate controls. The effectiveness of these controls is tested internally and by independent auditors as well. Once identified a deficiency of control, we tirelessly act in the remediation and proposition of improvement actions, as well as in the diagnosis of potential occurrences in other areas.

Throughout 2018, we continued our actions to maintain an effective control environment and implemented improvements, such as those related to the management of our investment projects. In addition, we are constantly evaluating and implementing new controls for relevant processes, among which we highlight those related to the Diesel Price Subsidy Program.

At the end of 2018, our management evaluated the internal control environment for financial reporting and concluded its effectiveness.

For more details about the improvement actions of our Internal Controls system, please refer to Reference Form (item 5.3), available at our website: www.petrobras.com.br/ri.
LINES OF DEFENSE

With the “three lines of defense” model, we strengthened our internal control system and contributed to allowing the organization to reach its objectives through risk management in a standardized manner and to the resulting implementation of effective controls. In this model, each group of managers that comprises the lines of defense performs a distinct role in the internal control system, according to our governance structure.

FIRST LINE OF DEFENSE
The business area managers have the duty to manage risks and are responsible for implementing corrective actions to resolve deficiencies in processes and controls.

SECOND LINE OF DEFENSE
The different corporate duties of risk control and compliance supervision support the development and/or monitor the control activities performed by the managers.

THIRD LINE OF DEFENSE
The Internal Audit assesses, in an independent manner, the efficiency of the risk management and the effectiveness of the internal control system, reporting any deficiencies and proposing improvement actions.
RISKS AND OPPORTUNITIES

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Risk Management

The integrated and proactive risk management is fundamental for the delivery of results in a safe and sustainable way.

Our risk-management process is centralized in a corporate area, allowing the standardization and uniformity of risk analysis Petrobras and the management of risk responsibilities, which are structured according to a three-line defense model.

We have an Executive Risk Committee with the purpose of advising the Executive Board in the analysis of specific risk management matters. Thus, each organizational unit must identify, prioritize, monitor and, together with the Business Risks area, periodically communicate to the Executive Risk Committee the main risks and mitigating actions planned.

To assist in this process, our Corporate Risk Management Policy establishes guidelines and responsibilities and is based on the following fundamental principles:

- respect for life in all its diversity;
- full alignment and consistency with our Strategic Plan;
- ethical performance and compliance with legal and regulatory requirements;
- integrated risk management;
- orientation of risk response actions aimed at aggregating or preserving shareholder value and business continuity.

The risks to which we are exposed (business risks) are classified in the following groups: Business, Financial, Compliance and Operational. Among these risks, the most relevant ones are classified as Strategic Risks and monitored in the scope of the Business and Management Plan and the Strategic Plan.

For information about the risks of each group, please refer to the section Risk Factors in the Reference Form and Form 20-F, available on our website: www.petrobras.com.br/ri.

In Form 20-F, in addition to the four groups mentioned above and Strategic, we describe two others: one related to Brazil and our relationship with the Brazilian Federal Government and the other with risks related to our investors.

RISK GROUPS

BUSINESS

Risks related to the company’s business, according to its value chain, specific to an integrated oil company (exploration and production, refining, distribution, natural gas, transportation, etc.).

FINANCIAL

It gathers risks arising from market fluctuations, defaults on counterparties and mismatches between assets and liabilities.

COMPLIANCE

Risks arising from non-compliance with the legislation and regulations applicable to Petrobras’ business, as well as internal rules and procedures, especially those related to fraud, corruption, money laundering and the reliability of financial reports.

OPERATIONAL

It gathers risks due to failures, deficiencies or inadequacies of internal and industrial processes, the supply of goods and services, systems, as well as natural disasters and/or actions from third parties.
STRATEGIC RISKS

Annually, from the list of business risks, analysis of business performance and the company’s external and internal environment, the Board of Directors defines those risks that, individually or in a consolidated manner, should be monitored more closely. These risks, called “Strategic Risks,” are selected due to their importance for the implementation of the Business Plan and Management and of the Strategic Plan, its scope, its degree of severity and/or resources demanded for its treatment. The Strategic Risks in the horizon of PNG 2019-2023 disclosed in our Strategic Plan 2040, and in the Business and Management Plan 2019-2023 are presented beside:

HEDGE POLICY

We maintain, preferably the exposure to the price cycle, avoiding the use of derivatives to systematically protect the goods’ purchase or sale operations, whose purpose is to meet our operational needs. However, subject to the analysis of the business environment and the prospects of realization of the business plan, the execution of an occasional protection strategy may be applicable.

In 2018, Petrobras implemented a strategy to protect part of its expected oil production in 2018, in a volume equivalent to 128 million barrels. Put options were purchased at an exercise price referenced to the mean price of the Brent oil in the months following the completion of the operations until the end of 2018, with an average cost of US$ 3.48 per barrel and average exercise price of approximately US$ 65/barrel.

In addition, we approve a derivative strategy, aiming to give additional flexibility to the process of aligning gasoline and diesel prices with international prices. The objective is to have the option to change the frequency of readjustments, being able to keep prices stable for short periods of time, reconciling the company’s business interests with the demands of its clients and market agents in general.
CRISIS MANAGEMENT

We have the Crisis-Management system, in line with the recommendations of the Guidance Manual for Corporate Risk Management of the Brazilian Institute of Corporate Governance (IBGC) and the Corporate Sustainability Index (ISE) of B3.

This system formalizes and addresses, in a structured and integrated manner, procedures and response teams for unscheduled events (leaks, fires, operational unavailability, intentional acts, fraud, legal issues, etc.) with the potential to generate a crisis. The system also recommends the internal communication flow and the teams’ performance in operational or strategic scope, according to the result of the analysis of the event before the impact matrix in the dimensions: life/environment image/reputation, legal/compliance and productive chain/financial.

In 2018, the said system was applied in the national strike of the truck drivers occurred in May. Our refineries and other industrial facilities did not interrupt their activities during the strike, which allowed rapid normalization of the fuel supply throughout the country as soon as the strike was closed.
Opportunities

Our Corporate Risk Management Policy considers not only anticipating threats that may adversely affect our strategic, economic, financial, operational or compliance objectives, but also take advantage of the positive aspects of risks, identifying and maximizing new business opportunities, processes and products, or by perfecting existing ones, resulting in actions and projects that are continually captured in our strategic planning. In the context of the challenges associated with transformations in the energy industries, we identify opportunities as:

**Recomposition of the exploration portfolio:** Aligned with our strategic planning, we are rebuilding our exploratory portfolio with acquisition of new areas in the 15th round of concession and in the 4th and 5th rounds of production sharing, with a forecast to increase the exploratory wells average per year. We will continue to be active and selective in the upcoming auctions in the production and concession sharing regimes already announced by the ANP in 2019. Our investments in exploration for PNG 2019-2023 total US$ 10.8 billion, an increase of 59% over the previous PNG. These investments aim to ensure the sustainability of the E&P segment in the long term.

**Strategic Partnerships:** Our partnerships are carried out together with companies that excel in all areas where we operate. We believe that establishing these relationships allows us to reduce our debt, helps us to support future investments, enables us to share the risks of the business and geographical concentration, as well as contribute to technical and/or technological exchange and to better governance in the making long-term decisions.

Our notorious knowledge in deep and ultra deep water, as well as the pioneering in the introduction of new technologies, allows the celebration of several partnerships in exploration and production projects in the last two decades. More recently, we have expanded our partnerships to explore opportunities in natural gas, transportation and marketing of our products, as well as low carbon initiatives. We are studying a model that will allow us to extend the benefits of the partnerships to the refining segment.

For more information about our partnerships, please refer to Social and Relationship Capital.

**Digital Transformation:** Recent advances in data acquisition and analysis, connectivity, artificial intelligence, robotics and other technologies are changing the sources of competitive advantage. The growing perception among investors is that, increasingly, the generation of expected value of companies will depend on the adoption of digital technologies and their new forms of work, collaboration and innovation.

Specific studies on the oil and gas industry point to several opportunities for value adding with the adoption of digital solutions of low uncertainty and high maturity. The order of great potential and the need to prepare for a new competitive environment are causing the main companies within the sector to structure their journeys of digital transformation.

The company is gearing up for a competitive environment in which excellence in the core business of industries will increasingly depend on the domain of digital technologies and skills for innovation. With digital transformation, we will seek to capture even more opportunities for efficiency gains in both the business and corporate segments.
SERVICES PROVIDED BY THE EXTERNAL AUDIT

Our independent auditors cannot provide consulting services during the term of the audit contract, pursuant to Article 30 of our Bylaws. On December 20, 2016, we hired KPMG Auditores Independentes (KPMG) to provide independent auditing services for fiscal years 2017 to 2019, with the possibility of renewal for another two years.

KPMG provided the following services during the 2018 fiscal year*, including for our subsidiaries and controlled companies:

<table>
<thead>
<tr>
<th>SERVICES</th>
<th>R$ THOUSAND</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting Audit</td>
<td>31,110</td>
<td>77</td>
</tr>
<tr>
<td>SOX Audit</td>
<td>5,594</td>
<td>14</td>
</tr>
<tr>
<td>Additional services related to audits</td>
<td>2,501</td>
<td>6</td>
</tr>
<tr>
<td>Tax Audit</td>
<td>1,038</td>
<td>3</td>
</tr>
<tr>
<td><strong>TOTAL SERVICES</strong></td>
<td><strong>40,243</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*CVM Instruction 381/2003
Acknowledgement

We would like to thank our managers and our employees for the dedication and commitment to recovering the company, as well as to our shareholders, the market and society for their confidence in this process of rescuing the company, the pride of all Brazilians.
Glossary

The terms not listed in this glossary are defined along the text.

Free Trade Agreements (FTA): market segment in which the purchase and sale of electric energy are the subject of freely negotiated bilateral agreements, according to specific marketing rules and procedures.

Regulated marketing environment (ACR): market segment in which the purchase and sale of electric power between selling agents and distribution agents, preceded by a bidding process, except for cases provided by law, according to specific marketing rules and procedures.

Boed: barrels of oil equivalent per day.

Brent: oil used as one of the main references of the international oil market. Dated contracts for Brent or its by-products in the financial market reference several contracts of purchase and sale of oil in the world.

Otto Cycle: Otto cycle sales volumes represent the sum of the volumes of gasoline, ethanol and vehicular natural gas for light vehicles.

Class action: it is a kind of collective action under foreign law that allows a class consisting of people who suffered the same loss, or who are prejudiced by the same fact and therefore, with a common interest, jointly claim an indemnity for losses suffered.

CO2: carbon dioxide.

Completion: oil exploration phase in which occurs the installation in the well of the equipment necessary to controllably bring to the surface the desired fluid, and allow the installation of monitoring equipment in the well.

Condensate: mixture of hydrocarbons in a gaseous state in the reservoir, which on the surface becomes liquid under normal atmospheric conditions.

Transfer of Rights Agreement: regime of exploration and production of oil and natural gas in which a company or a consortium of companies performs these activities in an area granted by the government. Petrobras was contracted directly by the Federal Government to discover and produce reserves with a maximum limitation of production of up to five billion barrels of oil and natural gas.

Declaration of Commerciality: a written notification of the concessionaire to the ANP declaring a deposit as a commercial discovery in the area of concession or sharing.

Decree No. 8.945/2016: which regulates, within the scope of the Federal government, the Act No.13,303 of June 30, 2016, which provides for the legal status of public companies, mixed companies and their subsidiaries within the Federal government, the States, the Federal District and the Municipalities.

Local Response Structure: set of resources (human, material), defined in the emergency response plan, to control the accident and mitigate the potential damages in the initial emergency phase.

Organizational Response Framework: a previously established emergency management structure designed to plan response actions to control the accident and mitigate potential damage by defining the required resources.

Occupational examinations: examinations carried out periodically for monitoring, prevention and promotion of workers' health. They comprise medical, dental and nutritional assessments with a personalized clinical and occupational history approach.

Foreign Corrupt Practices Act (FCPA) of 1977: US federal anti-corruption law, to which we are subject by American Depositary Receipts (ADRs) traded on the New York Stock Exchange.

FPSO: vessel with capacity to produce, store and offload oil and/or natural gas to shuttle tankers.

GLP-P13: Liquefied Petroleum Gas for residential use, marketed in cylinders of up to 13 kg.

Hedge: transaction or combination of transactions, financial or otherwise, which have the effect of fully or partially offsetting the price or value variation of a good, right or obligation.

Impairment: loss in the value of asset recovery.

Development Ratio (DR): relationship between developed proved reserves and total proved reserves

Reserve Replacement Ratio (RRR): measures the replacement of production by the addition of reserves, either by discoveries, extensions, revisions of estimates or enhanced recovery.

Organic Reserve Replacement Ratio (Organic RRR): is the Reserve Replacement Index disregarding the acquisitions and divestments made.

Reserves/Production ratio (R/P): measures the longevity of the current proved reserves, considering constant the current level of production.

Act No. 12.846/2013 – Anticorruption Act: provides for administrative and civil liability of legal persons for the practice of acts against the public administration, national or foreign.

Act No. 13.303/2016 – State Companies Act: provides for the legal status of the state company, the mixed-capital company and its subsidiaries, within the Federal government, the States, the Federal District and the Municipalities.

Act No. 13.587/2018 – Annual Budgetary Law: estimates the revenue and fixes the Union's expenditure for a given financial year

Existing Energy Auction: Bidding process for the contracting of energy generated by plants already built and in operation, whose investments have been amortized and, therefore, have a lower cost.

Alert Limit: maximum permissible parameter of a given indicator in a defined period, used to apply corrective actions and improvements in processes.
Concession model: regime for the exploration and production of oil and natural gas in which a company or a consortium of companies carries out these activities in an area granted by the government. In the Brazilian case, if there is oil or gas discovery, the companies will title the volumes produced and, in return, pay the governmental participation – royalties and special participations (the latter when applicable to the field in production). In Brazil, the concessions are granted through bid rounds for areas for exploration and production of oil, promoted by the National Agency of Natural Gas and Biofuels (ANP), which also carries out the technical regulation of exploration and production activities. The concession model is applied in all Brazilian sedimentary basins, except for the areas within the pre-salt polygon. It should be noted that the concession model is adopted in cases where the areas were contracted before the validity of the sharing regime that defined the polygon of the pre-salt.

Sharing Model: regime of exploration and production of oil and natural gas in which a company performs these activities through a production sharing contract between a state-owned company, which represents government interests, and a company or consortium of companies (contractors) for the exploration and production of oil by compensating the parties upon sharing the production of an oil field. Companies or consortia responsible for production must pay royalties to the government. In Brazil, Pre-Salt S.A. (PPSA) inspects the costs and has specific powers in consortia formed to carry out the activities under sharing. The current production sharing model is adopted only for areas within the pre-salt polygon, without the effect of amending concession contracts for the areas already under contracts executed prior to the Act No. 12.351/2010. With the advent of the recent Act No. 13.365, dated November 29, 2016, Petrobras no longer has the obligation to be the operator and hold a 30% stake in the blocks to be granted under this regime, however, providing the company, with the option to express its preference in being contracted by the government.

Profit Oil: the oil surplus corresponding to the share of the production of oil and/or natural gas to be distributed between the Federal government and the company, according to the criteria defined in the contract, resulting from the difference between the total volume of production and the related share of oil necessary to cover for costs and royalties due.

Project Rota 2 Gas Pipeline: Joint Operating Agreement (JOA), consists of three sections: (i) Section 1 – offshore (Lula-NE to Cernambi): 18-inch gas pipeline / approximately 19 km; BM-S-11 Consortium: Petrobras-65%; BG-25% and Petrogal-10%; (ii) Section 2 – maritime (Cernambi to Lagomar Beach - Macaé): 24-inch pipeline / approximately 377.5 km. Consortium Cabiúnas 1; and (iii) Section 3 – (Lagomar Beach to Tecab): 24-inch gas pipeline / approximately 4.5 km. Cabiúnas Consortium 1 represents sections 2 and 3 of the pipeline.


Repetro: special customs’ regime for the export and import of goods that are used for research and mining of oil and natural-gas deposits.

Total Shareholder Return: weighted average of the annual variation of the prices of common and preferred shares, in addition to the proceeds distributed throughout the year.

ROCE: Return on Capital Employed is an indicator that expresses the result of a company based on the capital employed. The ratio determined by the ROCE indicates how efficiently capital has been used in order to generate results. The “Adjusted ROCE” aim to eliminate the non-recurring effects of the result for calculation of the indicator, using the same criteria of Adjusted EBITDA. The indicator consists of the adjusted operating income, net of taxes on capital employed, considering the following formula:

Adjusted ROCE = (Adjusted EBITDA last 12 months x (1 – standard rate of Income taxes/social contribution)) / Capital Employed.

SMS Behaviour Management System: system to assist managers in making decisions in relation to expected behaviors in SMS, valuing positive practices and/or attitudes, and to behaviors not expected in SMS, differentiating error and violation and providing the application of the employee recognition program and the disciplinary regime of Petrobras.

SNOX: catalytic process in the reduction of emissions from gas streams, removing solid, liquid and gaseous contaminants and generating commercial sulfuric acid.

RIR: Reportable Injury Rate or number of reportable injuries with or without lost time, and with fatalities for every million person-hours of exposure to risk during the period considered.

Extended Well Test (EWT): activity performed during the exploration phase with the purpose of obtaining data and information to extend the knowledge of the reservoirs.

Refining train: a set of processing units that mainly involves the separation of petroleum into oil products, the transformation of heavier and lower oil parts into smaller molecules, giving rise to nobler oil products, and the treatment to adapt the oil products to the required quality by the market.

TRR: Transportador-Revendedor-Retailista (Carrier-Reseller-Retailer), a company authorized to purchase bulk diesel oil, lubricating oils and greases; storing and transporting the product; and resell retail with consumer delivery.

UK Bribery Act of 2010: UK anti-corruption law that allows UK courts to prosecute crimes related to fraud and corruption committed by companies incorporated in or operating in the United Kingdom.
Management

DIRETORIA EXECUTIVA

CEO
ROBERTO DA CUNHA CASTELLO BRANCO

Exploration and Production Executive Officer
CARLOS ALBERTO PEREIRA DE OLIVEIRA

Financial and Investor Relations Executive Officer
RAFAEL SALVADOR GRISOLIA

External Context

BUSINESS PERFORMANCE

OUR CAPITALS

OVERVIEW AND BUSINESS MODEL

RISKS AND OPPORTUNITIES

BUSINESS STRATEGIES AND OUTLOOKS

GUARDIAN AND COMPLIANCE

OTHER INFORMATION

Elected by the Controlling Shareholder
Marisete Fátima Dadald Pereira
(Chair of the Audit Committee)
Deputy: Agnes Maria de Aragão da Costa

Elected by the Controlling Shareholder
Adriano Pereira de Paula
Deputy: José Franco Medeiros de Morais

Elected by the Previous Shareholder
Eduardo César Pasa
Deputy: Mauricio José Andrade Correia

Elected by the Preferred Shareholders
Daniel Alves Ferreira
Deputy: Rodrigo de Mesquita Pereira

Elected by the Common Shareholders
Reginaldo Ferreira Alexandre
Deputy: Susana Hanna Stiphan Jabra

Elected by the Controlling Shareholder
Eduardo Bacellar Leal Ferreira
President of the Board of Directors elected by the Controlling Shareholder

Ana Lúcia Poças Zambelli
Independent director appointed by the Controlling Shareholder

Clarissa de Araújo Lins
Independent director appointed by the Controlling Shareholder

Jerônimo Antunes
Independent director appointed by the Controlling Shareholder

João Cox Neto
Independent director appointed by the Controlling Shareholder

Roberto da Cunha Castello Branco
Director appointed by the Controlling Shareholder

Segen Farid Estefen
Independent director appointed by the Controlling Shareholder

Sonia Julia Sulzbeck Villalobos
Independent director appointed by Preferred Shareholders

Marcelo Mesquita de Siqueira Filho
Independent director appointed by Common Shareholders

Danilo Ferreira da Silva
Director elected by Employees

Governance and Compliance Executive Officer
RAFAEL MENDES GOMES

Strategy, Organization and Management System Executive Officer
RAFAEL SALVADOR GRISOLIA

Production and Technology Executive Officer
RUDIMAR ANDREIS LORENZATTO

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EBERALDO DE ALMEIDA NETO

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EBERALDO DE ALMEIDA NETO

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www.petrobras.com.br is our website, it contains general information about the Company, including a specific investor relations room, with notes on results, statements, annual reports, audio and transcription of presentations to investors, By-laws, share prices, shareholder information, etc.

**ANNUAL GENERAL MEETING**
The Ordinary General Meetings (AGO) are held until the fourth month following the end of the fiscal year, pursuant to Article 39 of the Bylaws, at our headquarters located at Avenida República do Chile, 65, Centro, Rio de Janeiro.

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Flávia da Matta Design

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Andre Ribeiro (pages 8, 41, 53, 70, 100 e 123)  
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