



## Petrobras ESG Webinar on Climate Strategy: Transcript

15 July 2020

On 15 July 2020, members of Petrobras management held a webinar, co-sponsored by the Emerging Markets Investors Alliance, to discuss its carbon strategy. This webinar took place in the wake of Petrobras's [announcement](#) of support for the Task Force on Climate-related Financial Disclosures (TCFD), as well as an update to its [Climate Change Supplement](#). The transcript of the webinar follows. See [here](#) for the presentation and [here](#) for the full replay.

### **Petrobras speakers**

Andrea Almeida, Chief Financial Officer  
Carla Albano, Head of Investor Relations  
Viviana Canhão, Corporate Emissions and Climate Change Manager

### **Moderated by**

Andrew Howell, Emerging Markets Investors Alliance

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### TRANSCRIPT

#### **Andrea Almeida, Chief Financial Officer, Petrobras**



Thank you everybody for joining us. It is really a pleasure to talk to you about climate change, a subject that is important for us. I think it is very important that we have this chat and this conversation today. It is also important to go back and tell you about our transformation agenda and our 5 pillars, something that Petrobras has been doing for a while and I believe we will keep doing, because even before the crisis we were sure that everything we were doing has to be stronger. Going back to the pillars, we have been focusing a lot on maximizing returns on capital employed, that is one of our pillars, focusing on the assets of which we are the natural owners, and focusing on the ones that generate higher returns. To support that strategy we



have a big divestment plan, and we have been implementing that to be able to find resources to invest in those assets that generate higher returns. The second and a very important pillar as well is the reduction of the cost of capital. Again, it is very important for a commodity company to reduce its leverage and compete at a lower cost of capital. So we have a goal in the medium-to-long run to reach \$60 billion in total debt, and which will bring us lower costs and help make us sustainable over time -- even to be able to survive those volatile moments like we have right now, and that all commodity companies face. The third and a very important pillar is the relentless search for low costs. I think that one item that we have to keep doing is to reduce the fixed costs of the company to be able to be able to survive any kind of moment. And moments like we are living right now just show us that we have been implementing lots of actions in that area, and we can see in the quarterly results the lowering of lifting costs. It is not just in operations, but on the corporate side as well: we are reducing the number of people and adjusting our structure such as buildings that we need for this new reality. The fourth is meritocracy; last but not least, the strong focus on people, environment and safety. Again, all of them are just reinforced during the crisis and we know how important it has been to implement them and to be in a better situation than we were some years ago, and that everything we have been doing prepared us for this crisis.

I understand that right now we are somehow uncomfortable about the situation we have been in even after three months living in this crazy moment. When we look at the businesses, we have clear strategies for each one, and we have been talking a lot about our focus in our deep and ultra deep water with world class assets, so we want to invest in projects that are resilient to low oil prices.

On refining, we have been looking to sell 8 refineries with a nominal capacity of 1.1 million barrels, that represents around 50% of our capacity. We believe we'll be able to finish that by 2021 and after that, there will be a lot more focus on the southeast of Brazil in the refining business. We are getting out of some activities like fertilizers that really don't meet the focus of the company, LPG distribution and biodiesel.

In terms of renewables, I believe we need to invest more time to understand what will really be the best for Petrobras, but we continue to research and develop our capabilities, and we want to participate in the renewable energy market focused on wind power and solar power in Brazil. We want to make renewable energy commercially, which is feasible in Brazil.

We just announced yesterday that we concluded tests for producing renewable diesel on an industrial scale. We know that renewable diesel still depends on regulation, and we'll be



dealing with the regulators to contribute their analysis to have that approved in Brazil. We have been developing our own low-sulphur oil production, and we had record exports of that product in May, which is very good for us and it helps us during the crisis now. We know that this product is to totally meet the IMO 2020 regulation of 0.5% sulfur.

We do have other transparent strategies that apply to all businesses of Petrobras, and one that is very important is changing us as well is digital transformation. We believe we can apply that in all business operations, like improving and developing projects that we want to speed up the timing of the production to the market. But in all areas, this can generate a lot of value and help us increase safety in our operations. Thanks to the digital world and our commitment to our employees, we continue to operate normally during the crisis and we were able to put lots of people working from home in a safe environment, and actually, we don't see any disruption in the overall company. We could have never expected to run Petrobras out of our homes, and that's exactly what is happening right now.

Another strategy to mention is the culture of high performance, and we are always seeking competitiveness, and we have a big project to establish what are the competencies that we need and that we want from our leaders moving forward. That's why we are investing a lot in people to have the future leadership of this company able to turn Petrobras into a more sustainable company, strengthening its credibility and reputation. As you can see, there's still a lot of homework to be done internally, we believe we have been sticking to the agenda and doing all of that in a very committed way, but we still have a lot to do.

It is very important to mention that we see lots of opportunities in the transition to a low carbon future. We want to develop our E&P, but we want to do it with low carbon exposure. So we have taken a lot of actions to decarbonize our operations and dedicated investments in that regard. Petrobras has been part of a very important gas climate initiative since 2008. I was there, it was great last year representing Petrobras, and I saw how important all of those initiatives that they are running could help the oil and gas industry to have a low carbon exposure, and I believe this is an important response to climate change. I believe I will finish here, but I'll pass the word to Carla from Investor Relations to talk about our efforts in that area of improving disclosure and transparency.



**Carla Albano, Head of Investor Relations, Petrobras**



Thank you very much Andrea. So, on the Investor Relations side we have been working in order to improve the disclosure and also the transparency of the company. Since last year, we started disclosing a lot of information to the market, by breaking down the lifting costs by layer. In Petrobras, we also give information about production and cap on a yearly basis. This is very important on an SDG basis, because we also released our 10 commitments to sustainability. So these commitments, they are clear targets and they can be measured. So there were a lot of improvements that we've been doing, and this year we're glad we were recognized with the best sustainability metrics on ESG terms by our sector in the Institutional Investor Awards. But, the idea is to continue to move in this direction of disclosure and transparency, especially when we talk about ESG.

Nowadays we are working together with a lot of areas and departments within Petrobras to respond to the Dow Jones Sustainability in its questionnaire. We are also responding to the Brazilian Sustainability Index, ISIS, questionnaire. June was a very busy month for us; we published our sustainability report which highlights, among other things, our decarbonization initiatives with goals and actions for reducing CO2 emissions, and also including carbon capture. We also released new human guidelines in June that are recognized not only in Brazil, but also internationally. We now have a code of ethical conduct based on our previous code of ethics that guides our content. The idea is to have a clear and more simple document, so we have been working a lot in order to communicate all the things that we have been doing internally better. So, for instance, when we talk about the Task Force for Climate-related Financial Disclosures, or TCFD: since 2008 this has been a reference in our management and reporting. But on July 1st we were very pleased to announce our formal support for it. It's important to highlight that Petrobras today already complies with 100% of the TCFD recommendations. Along with the TCFD support, we also made available an updated [Climate Notebook](#) on our website, a document referenced in discussions with our ESG investors. It's important to say that this has been a result of teamwork, not only investor relations, but also with the strategic planning area, health and safety, corporate governance, all of the finance team, and also the



social responsibility department with the support that we have always had from our elective boards.

The idea here is to have the first in a series of webinars to have an open discussion with the market about ESG. Afterwards, we intend to reach out to every one of you in order to discuss how we can further improve our disclosure and transfers in ESG. So now I will hand it over to Viviana to start her presentation on climate change.

### **Viviana Canhão, Corporate Emissions and Climate Change Manager, Petrobras**



So, moving on to the topic of our webinar: carbon management. We are now working on 3 priorities.

Firstly, transparency: carbon quantified in the critical processes. So, with respect to TCFD, we see that the real key message of the recommendations is that we have to understand the impact of the transition and we have to incorporate that in a quantified way into our value assessment in our decision making process, including scenarios. We understand that that is the purpose for both investors and for us as a company. There is absolutely no reason for blocking decisions that take all the shades of the uncertainties in the market, and we have been putting a very big effort into having quantified carbon in our processes and I'm going to show a little bit more about that.

The central pillar of our carbon strategy is the resilience of our fossil fuel position; clearly the engine of our cash generation is our core assets in the deep and ultra deep water, as our director was mentioning earlier. It is very important and crucial for the Petrobras's future that those assets are resilient; it's crucial that we can monetize them, it is crucial that we have a future in a market that we know is under transition. So that is a key pillar and we're also going to talk a bit about that.



The third pillar is strengthening our skills for the future. So we do understand that there will be at some point a reduced demand for oil, creating new opportunities as well as new risks. It's important that we build our competences so that we can take those opportunities in the future, and we continue to have a company that evolves as we move to the longer term.

When we talk about informed decisions and transparency, we are talking about the major transformation of Petrobras. We have more than 50% of the executives in the company involved in our carbon strategic initiative, because we understand carbon has to be in every single process. It has to be in governance, strategy, metrics, management, portfolio management, operations, investment management, product quality, the management process... even in the training of our employees and executives. If we look at carbon as a competitive issue for the future, then we have to have that quantified, and clearly in all our processes. So it's a transformation effort into having carbon included in our management and in our decision making processes, and we made quite some progress in the last couple of years and I would like to bring to light some key aspects.

One of them is governance. We have a strong governance for carbon; we have a managerial commission and we have committees both at the Board of Directors level, with the participation of at least three members and also invited members from the outside; we also have a committee that advises the Executive Board. So, we have strong governance that takes carbon and brings it to the highest levels of the organization.

We would also like to note that Petrobras has a history of scenario-based planning, which is one of the key aspects of TCFD with its structured ways of assessing carbon risks and carbon opportunities; we have a history or more than a decade of doing scenarios. We have internal scenarios: all of them incorporate carbon transition. One of our scenarios is a very accelerated transition, and then we gave a scenario that's intermediate, and we have a scenario that is less convergent in terms of the transition, but the fact is that part of the organizational culture is to use those scenarios in the definition in our assumptions, in our risk assessments, in our risk prioritization, so it is already something that is within our company's culture.

The other aspect that I would like to shed light on is that we have a commitment to having conservative key assumptions in resilience testing, and I'm going to tell you a little bit more about the key new assumptions that were released this year and that have this commitment in making sure that we have resilient assets, that is really important for us: asset that can cope with the volatility of prices. We have a quantitative approach, so obviously carbon has



qualitative aspects, but we are really looking into the quantitative approach. So we have a basket of metrics that we use in different processes.

In our [climate change supplement](#) that was released 2 weeks ago, we had a list of some of the metrics that we use. Because the approach is quantitative, we want the portfolio managers to know what the carbon risk of different assets are, and that requires a quantitative approach.

One change that we introduced from this year is carbon intensity metrics are integrated with the remuneration structure across the company. So every executive, as well as the Board, has carbon-related compensation metrics, and we have very few metrics of this sort in the organization, so carbon truly is considered a top factor. And we also have an integrated process that is also central to TCFD, which is risk management. Petrobras has a large organization that runs the integrated process -- and carbon risk is one of the risks that is classified as a priority risk, and therefore it has plans that are reviewed closely within this framework.

We'll move on now to the second pillar which is the resilience of the fossil fuel position. We have 3 scenarios: one of them involves an accelerated transition, but still, whichever way we look at the transition, oil and gas is 54% of the energy matrix right now, and therefore it is not simple to change it within measure of a few years. Clearly, we will have oil in the market for some time, and we think that if we are operating this market, it has to be the best oil. When we look at 54% of the emissions coming from the production or use of oil and gas products, we're going to see different categories of oil and gas in this matrix. Not all oil companies are the same, and not all gas companies are the same, so there is a big space for reducing emissions right now just by having better oil and better gas, and we believe in that because it has an immediate impact on a very big base of emissions.

We also understand that low cost and low carbon is now a matter of competitiveness, allowing us to be resilient in scenarios of low price of oil, carbon pricing and hydrocarbon differentiation based on carbon content. This is because not all hydrocarbons are the same: one hydrocarbon may have as much as 50% more emissions than another from a value chain perspective. We want to have products that are competitive in terms of carbon. We are also electricity suppliers and we want to have our electricity competitive in the electricity market, so we find it important that we have to be low cost and low carbon to prosper in these future scenarios. And the more we look long-term, the more it's going to be important.

I'm going to bring to light some aspect of the performance of Petrobras in terms of carbon. We do believe that we have good quality reserves technology that can maintain our position as a



competitive producer with low carbon intensity. As Carla mentioned earlier, we have 10 commitments for sustainability at Petrobras, of which 6 are related to carbon, fully covering all our assets.

Petrobras has been through 5 years of reduction in our absolute emissions, a consistent reduction in direct emissions. When we look at our zero growth of absolute operational emissions, we have a target of zero growth until 2025, and we're on the trajectory of coming in well below zero growth; we are seeing declining emissions at a quite significant pace.

We have a strong gas utilization and reinjection project. Petrobras now has a gas utilization rate of 90% on average, with some assets operating better than 97%. This was an achievement of a very long project in our upstream to improve gas utilization, and now we have excellent levels. We also have reinjected over 40 million tons of CO<sub>2</sub> since 2008 and we now reinject about 3 million tons per year, which amounts to getting the 40 million that we say we're going to get to in 2025. So, you can see that that represents more than 10% of our upstream operations--it's a significant reinjection project and it's coupled with our enhanced oil recovery, so it's a successful story of CCUS in our industry.

Most people have not realized that in the last decade, Petrobras has improved 42% of our intensity in the upstream operations. That literally means that for the 40% increase in output of oil and gas from our operations that we had in the last decade, we literally did not increase emissions from the upstream segment. There are not many companies that have reduced emissions intensity by 40% emissions since 2009. We were operating at levels of intensity that were 30 kilograms per CO<sub>2</sub> per barrel and have reached 17. We still have a commitment to lower this another 13% to reach our 2025 target. We're talking about major improvements in our upstream production to bring us to the leadership of this industry in terms of carbon and will continue to lead through 2025.

And as I said, when we talk about carbon emissions, obviously the effect on the atmosphere is cumulative, so if you reduce one million tons one year ago, it represents 50 million over 50 years, so the later you do the reductions, the more reductions are necessary to reach a certain carbon concentration in the atmosphere. So we are proud to have taken early action, because early action on a proactive basis has a significance in our mind.

Our commitments have a 100% coverage, so we also have a target and a commitment for the downstream sector, in particular for the refining sector, which is reducing the carbon intensity by 16% by 2025. Petrobras is not only an oil and gas producer, we are in utility and we have



significant output in electricity representing over 5% of the Brazilian electricity supply. Brazil has a very strong hydropower generation base. We operate now at \$0.37 CO<sub>2</sub> per megawatt hour equivalent, which is way below the average of the world's electricity supply. When we look at Petrobras we see that Petrobras is a thermal power generator, with gas power plants with a combined cycle that exports into our assets; these are highly efficient assets for electricity generation and that results into a good profile for our electricity as well. It also results in some experience in this electricity market in the last 10 years.

Moving to the third pillar, we do not deny the fact that there is an energy position in place. There are a lot of uncertainties that we face that bring risks and opportunities that depend on the markets and the characteristics of each company. We have oil and gas that are commodities and we have other markets for electricity that are more local. This brings all this complexity to the energy evolution and we understand that.

We have introduced specific metrics and disclosure for Scope 3, because we see that is a trend in the market and that overall we have to understand: of the energy that we provide to society, what is the total footprint of that, including our emissions and the emissions from our consumers? Suppliers are not so relevant for our industry, the scope 3 from our consumers is a relevant emission. I would also call to attention that we have full value chain transparency, and we were one of the companies that started reporting value chain emissions very early. We have now, actually, improved our Scope 3: we included the category of the use of our products, as well as the product processing. We are one of the companies that now has a Category 10 in our disclosure, and what you can see is that Petrobras is also improving. When we look at the absolute emissions from the value chain, they are reducing, so again we have 5 years of reducing emissions from the use of our products due to a combination of factors, but it is a company that is reducing the impact.

When we look at the metrics that involve the value chain, it is critical that we understand what are the options for diversification, and when we look at the longer term, as Andrea has said, we have to understand where we are going to create value in low carbon: where are we going to have the key competencies to be the national owners, to be the world-class assets in terms of these new opportunities that arise in the market. That is why we have an R&D portfolio that is much wider than our industrial portfolio. As we have a clear concentration in our business plan, in investing in the assets that give the most return, and very focused on a specific geography (ultradeep water, etc), we have all of the balance sheet that a company needs to be solid and able to evolve.



As a company, we're doing all of that, but we're not losing sight of the fact that we need a base of competence to capture opportunities in the long term. We have an allocation of 10% of our investment in R&D for low carbon. This does not include the low carbon of what is already in the upstream evolution, we're talking about things that are out of the box and that actually can bring different cash flow generation to the company in the future. We were talking about experimenting on offshore wind power, we're talking about expanding on solar, we're talking about CCUS in an expanded concept, more so than EOR, so we keep talking about renewable diesel and biojet, because those are our types of fuel where we can leverage our refineries, where we have a strong capacity as converters because of our refining experience. Very high quality biofuels can go to aviation, for instance, that cannot be the usual transesterification biofuel. We are looking at all these opportunities in terms of renewable diesel and biological environment conversion stages, where we are talking about deploying and actually having captured opportunities on the Brazilian market. The others are in R&D in the demonstration stage, but we do understand that we have this base of knowledge and we have to structure the company for this type of opportunity.

To be clear, everything that I have presented so far, all of the numbers, the future commitments do not have any offsets. We do have a very strong voluntary program on forest carbon and we have 15 projects in 5 Brazilian biomes, including the Amazon, for targeted preservation of forest and avoiding carbon stock removal--we're talking about 35 million hectares involved in sustainable agriculture, sustainable preservation areas, and strengthening protected areas so they are vast areas, state-sized areas under projects of Petrobras, but all of that is voluntary. All of the trajectories that I've shown are intrinsic performance of our operations and of our value chain.

The last aspect of our presentation is our new climate change supplement. We provided some quantification of the resilience of our portfolio. We do this at the asset and portfolio levels, so right now we have an asset and project measurement of carbon performance and risk. We don't publish the current carbon risk of each of our assets, but we use it internally. Our investment projects must be positive in all three scenarios: every project is tested for the most stringent resilience scenario, and it has to go through that scenario and we do sensitivity for carbon price at the project and portfolio levels.

At the portfolio level, we first improved the transparency on key assumptions: we published our long-term view of oil prices earlier this year, with price around \$50 in the long-term. We have now published how we compare the assumptions that we had last year when we developed the strategic plan until 2024 with 2 scenarios, the sustainable development scenario and the stated



policy scenario. We can see that in 2017, we already had quite conservative assumptions in the sense that we were considering an oil price evolution that was much closer to the sustainable development scenario than another, more optimistic scenario. When we look at the new price curve that we have for the longer term, we can see that we are looking now at a key assumption of \$50 per barrel, which is a lower price and it's way below the agency scenario for 2019.

When we do a stress test, what we can see is, considering a base of 2019, our loss of value in terms of quantifying our portfolio with the sustainable development scenario was 10%. If we were quantifying it with the stated policy scenario, we would have an increase in value of 40%. Our assumptions are much closer to the sustainable development scenario than they are from the stated policy scenarios. This is the 2019 basis, obviously we have released new key assumptions in 2020, and when we test with the key assumptions from 2020, which are much lower prices of oil, then the effect is over 100%. So, if the price of oil would be what the sustainable development scenario says, it would give an appreciation in the increase in the value of the company of over 100% in terms of what we project with our own assumptions. This is a commitment to having assumptions that are conservative so that we make sure that we have just the best assets in our portfolio and we can have a core of a company that has world-class assets, both in terms of carbon and cost production that can resist the volatility, that can resist these different practices that you need for the future.

In conclusion, we would like to say that we're working for this strong governance and decision-making process, and a high level of transparency in the assumptions in the risks. We are working in protecting the core world-class assets: low carbon, low-cost, and we are working on skills and core competencies for future opportunities. We understand our strengths in the oil and gas markets, but we also understand we have to have other companies as well. This is the time I leave us for the questions and reinforce our commitments towards the Paris Agreement.

**Andrew Howell, Emerging Markets Investors Alliance**



Thank you Viviana, Andrea and Carla for your presentations. Before we move to Q&A, I will say a quick word about the Emerging Markets Investors Alliance. We are a New York-based non-profit bringing together investors, governments, policy experts, and corporates to educate on ESG and sustainability issues. We facilitate engagement, we advocate for best practice, so if you're interested in learning more about our work please do see our [website](#) or reach out [to me](#).

Of the various issues that we look at involving sustainability in emerging markets, clearly climate change is one of the most topical and important. We are holding this webinar at a time when the focus on carbon transition, from both the corporate sector and investors, is stronger than ever-- which in many ways might be surprising, given the impact of the pandemic. Of the various institutions which have been established to help guide corporates towards a lower carbon footprint, the Task Force on Climate-related Financial Disclosures or TCFD has taken a central role for its methodical and comprehensive framework for managing climate-related risks. The Petrobras announcement of support for TCFD, is really a major milestone. As of February, TCFD included over a thousand organizations worldwide as supporters, but just 19 of these are in the energy sector, and Petrobras is just the second emerging market-listed energy producer to join TCFD. So this is a historic moment.

Now we will take questions from the webinar audience. I will start with a few questions about the TCFD commitment that you've made. Why have you chosen this time to support TCFD? Previously you had said you were unable to report in accordance with TCFD. What has changed? Related to this, which parts of your disclosure are not yet fully aligned with TCFD? Are you planning to fully implement TCFD as part of a process over a certain timeline, and can you comment on what that timeline looks like? And are your Scope 1 and 2 commitments consistent with a specific temperature to climate trajectory? Is that within the well below two degrees of the Paris Agreement? Can you comment a little bit about the nature of the targets that you've set out?



### **Viviana Canhão**

Petrobras is a conservative company in terms of what we support publicly in ESG, so although we have been aligning our reporting to TCFD for quite some time, we only gave public support to the program once we had achieved transparency standards with respect to economic risk assessment and scenarios. Once we had reached an appropriate level of maturity into this comparison with public scenarios and how to disclose our key assumptions and the quantification of risk, then we felt it was a good moment to align to TCFD. TCFD is not a mandatory set of metrics; it is not that prescriptive let's say, but let's say it is more of a framework, with different aspects that you can expect to be in the disclosure, so that you can assess the proper governance strategy, risk, and metrics of an organization. It is always going to be a process, because I think all of the companies and all of the users of that information are trying to understand information on recommendations from the TCFD. We do understand that it doesn't mean that it is a closed cycle, and we understand that we're going to have feedback on that information: new metrics are going to come into the market, and we're always going to have to assess what we provide to the market.

The third question was on Scope 1 and 2 and the Paris Agreement and the trajectory for which degrees there is. The way we approach it is: let's do the best positioning we can to make sure that we are amongst the best in this sector for producing low carbon. We made a wide basis of what we could do for our operations in terms of mitigation and in terms of project decisions, and we gave it the deployment as soon as technology allowed. When you look at 40% reduction in intensity in the last decade, it's going to be beyond any scenario that you could plan for for any of the agreements. I think you can look at the Paris Agreement from two different perspectives: (1) you can look at the inclination of your descent, (2) but you also have to look at which point you're coming from. If you're an operator, you're operating at 50 kilos of CO<sub>2</sub> per barrel, you can do a very steep reduction, and you're still going to be, perhaps, an oil that is produced with a higher intensity than other oils. If you are someone that is super efficient in terms of production, you may not need much of a reduction to be at the same point as the reduction of the average of the oil and gas production in the world. From our perspective for both ways, we are doing well because of the steep reduction that we had in the last decade and that we are continuing to do. We are undertaking a very quick decarbonization of our portfolio, and we are also launching ourselves into a final position that means a very good performance when you compare the average production in work. When you look at a number like 17 (kt Co<sub>2</sub>/bbl), it is below our industry average, and it is well below average if you consider companies that produce mostly oil.



We avoid the discussion of saying whether this is 1.5 degrees or 2 degrees, because as I said, if you have different perspectives on that: coming from a very high intensity and then finishing with a much lower intensity is still a major accomplishment. Our past performance and targets would be aligned with 2 degrees, because you were talking about more than 2% a year in every single year that you can assess.

### **Andrew Howell**

A few questions about your Scope 3 emissions, where you have seen an improvement in recent years. What are the drivers of that improvement? How do you expect your planned divestments to influence Scope 3 emissions? And finally what is your approach towards Scope 3 targets as well as the use of offsets to reduce those?

### **Viviana Canhão**

The Scope 3 reduction is due to a number of factors, but mostly because it is a lower base of sales. The total sale of fossil fuels fell, so the actual emissions did as well. When we looked at Scope 1, 2, and 3 together, the operational number was relevant enough to make a difference. You look at 3 because we're talking about a major 15 million tons of reduction in terms of operations, so it is also significant.

In terms of Scope 3 targets and offsets, I'm going to start by the second part of the question: offsets should be used when we think about the long-term strategies of any organization. It is not a way to evade what you need to do in your own base operations. Then when you start looking at things like 2040 and 2050, then it is important to capture all the marginal costs and opportunities for society. We voluntarily support projects in that area, but we are focusing our communications in our core performance: by the time I start applying offsets, we make it less clear how well we are advancing in our intrinsic operations.

In terms of Scope 3 metrics, that is a very complex aspect because you can do that on an intensity basis, you can do that on an absolute basis--different companies have different strategies and opportunities for diversification away from carbon. There is space, as we see it, for low carbon oil. There would be no benefit for the Paris Agreement if we dislocate very good carbon oil and replace that with someone else's high carbon oil. We clearly have opportunities to deal with Scope 3, but it's not a mature subject yet that I'm going to tell you like "you should expect in three months time that we have a focused target." It is something that is under study.

### **Andrew Howell**



We have a question about physical asset risk at Petrobras. Most of your presentation is focused on mitigation, but how does adaptation to a warmer climate affect Petrobras? Have you performed a physical risk analysis, and what is your approach to that?

**Viviana Canhão**

We have an adaptation project that has specific scenarios for our critical assets. They look at things like water availability, wave currents for offshore assets, impact on coastal areas and specific scenarios for the regions of our assets. We have an atlas literally of what is expected. As we have the results from this scenario planning for extreme weather, etc, we are constantly reviewing the basis for our design, so that our new design already comes out with the appropriate wave, curve, wind, etc. that is expected by that modeling. We also look at risks from the existing assets, let's say. When we compare the parameters of our model to the parameters that we can see in the models from climate change in the regions that we operate, it does not require any major reworking of our current assets or any major change to future assets. So that's why we focus more on the transition risk than on the physical risk. But physical risk is also part of the initiative.

**Andrew Howell**

I'll turn to methane emissions, a topical issue right now with record methane emissions being reported globally. Could you talk a little bit more about your methane emission targets at Petrobras? You've made a commitment through the Oil and Gas Climate Initiative (OGCI), as well to support methane regulation--could you talk a little bit about that? How does that affect your calculations on cost of production? And are there any specific technologies or approaches that you believe you could implement to have a near-term impact on your methane output you could tell us about?

**Viviana Canhão**

Methane is about 6-7% of our emissions now, but we do understand that it's something that is a real focus in our industry, and it's very important for the role of gas in the transition. So the industry needs to be assured in terms of measuring and demonstrating good performance in methane so that natural gas can be a credible fuel. We have a specific target for methane and it goes along the lines of the technologies that are needed: closed flaring, reducing flaring, eliminating venting, dealing with fugitives, new types of valves, high bleed equipment substitution -- though we don't have much high bleed equipment, so that is not a very important line of action for us. When we look at all the opportunities for carbon mitigation, we have a special magnifying lens on methane to make sure that those opportunities are captured, and that we can have that part well dealt with. It means a lot of measuring, and a lot of making



sure we apply the best technology. We already have a closed flare in operation in some of our assets, so we have some experience with that. I think where we have a little bit more of a technological gap is in the venting part because of the safety versus returning gas to the plant, so that requires some more in-depth studies, but we have a specific program for that.

### **Andrew Howell**

Some questions on the price of carbon: how do you think about the possibility of being forced to pay to neutralize your carbon emissions, as it works in other regions such as Europe? Do you have, let's call it a shadow carbon price, that you are using for modeling purposes that you're thinking about? How should investors consider this cost of carbon emission that maybe becomes a role in the future?

### **Viviana Canhão**

For the last three years we've had strong sensitivity testing for carbon pricing. We have a carbon price matrix that shows the different assets, what their vulnerability is to a carbon price, and for new investments it would ask what is the carbon price that would reduce the NPV significantly, etc. We do not have a carbon price as a "shadow price" yet that goes into the NPV of the investment. We went through a more statutory way of doing things, which is when you put a carbon price and you say I'm accepting to pay this price for carbon, and let's see where it takes us, incorporating it into the design. We are doing it in a more statutory way at the moment, like if we want to make sure that our design has this level of emissions, let's develop all the technology we need to make sure it goes to that level, let's implement anything we need.

Sometimes this requires a whole reworking of how you plan the field; the way it's working now is more through performance requirements rather than through the financial mechanism of incorporating a carbon price. But again, we have the sensitivity assessment for every asset and investment that we have, and we use carbon price as a marginal abatement cost curve that considers what is the price of carbon that would make every one of those opportunities feasible. In this sense, it ends up that the price of carbon is incorporated into the methodology anyway, because by the time you are prioritizing your options, you're using a tool that considers the different carbon prices that would make that opportunity feasible.

I would say yes and no that we have carbon price fully integrated into decisions, because we do sensitivity for portfolio, we do sensitivity at the asset level, we do sensitivity for investment, we use a MAC curve approach to prioritize our investment in terms of the Carbon Mitigation Project which has a dedicated budget. But no it's not like an internal market with a shadow



price that is incorporated with NPV, at least not for the moment. It is something under consideration, but not for the moment.

**Andrew Howell**

I will leave you with one final question, which is how should we put the Petrobras carbon commitments into the context of others by your peers in the global energy industry. Any comments on how you sort of benchmark yourselves on climate strategy within the industry?

**Viviana Canhão**

We take the approach of the decisions that are at hand right now: taking the hard decisions for investment for the next five years, and we're incorporating as much technology, as much carbon performance as we can. We're also deciding on what it is that we have to develop as competencies for new businesses. Let's say you can have a target for 2050, but what are you going to do in between? What are you going to do in 2021, 2023? We have chosen this date, 2025, for the target because it's very actionable, very accountable. Let's say it doesn't mean we don't have a long-term view, it doesn't mean that we don't have projections, it doesn't mean that we don't think about the strategies in the future, but the fact is that we're not taking the decisions right now to invest in something in 2045. Andrea, I'm happy to follow that over to you.

**Andrea Almeida**

That's right. We don't want to set something for 2050, you know we might not be here to do it or to implement it. I think the management that is leading Petrobras right now wants to have goals that are under our hands to implement, we don't want something that is hard to be seen and is hard to imagine because it's too far away. We really wanted to have more meaningful goals in the medium term, I think that's our commitment. As Viviana mentioned, we are a company that still has a lot to do to readjust itself in its capital structure, into the portfolio management, so we still need to do a lot to be competing with the big guys and we are doing that. We wanted to be in the same stage that they are, in terms of leverage, in terms of the cost of capital, really to be able to compete with them on the same bases. I think we need to do a lot on that area before we invest in R&D to see where we are going to be really, where we will need to focus on the renewables arena. Then maybe, we'll have more long-term, I'd say 2050 goals, outlined to where we believe we are going to be in the long run. But for now, we need to adjust the company to the new reality: we have a big agenda to be implemented, and climate change is definitely part of that. That's why we are putting the targets on a more short-term basis that we feel that we can do with our hands, and we invest a lot of time and efforts, and all



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the structures of the company, as Viviana said, to make sure we are going to get there. I think that is the most important piece.

To conclude, I think it was amazing to have you with us, to have your questions. As you know, it's not just in this area, but in all areas we are trying to be more transparent, so it will be very important to receive feedback from you on how we can improve in that area, in all areas actually. We are very happy to be here and very happy to answer all the questions you had for us. I believe there are some questions around the material we will be sharing or adding to our Investor Relation presentations, so I think that you will all have access to that. Thank you a lot for the time to connect with us, and stay safe, I think that is the most important thing we should have right now is to keep us safe and keep our families safe.