The Green Pivot

Patrick Pouyanné is CEO of TotalEnergies, the French energy giant. Patrick is pivoting the company away from oil towards renewables. He is a big believer in the untapped potential of offshore wind.

Q | TotalEnergies has been ahead among oil majors in pivoting its business towards renewables – how did you realign the strategy?

Over the past decade we have been investing in renewables. Since the Paris agreement in 2015, we have built an asset base including solar and offshore wind, and in 2020 we decided to accelerate.

In May 2020, we published our Net-Zero ambition for 2050, and we reflected this ambition with emission targets for 2030. This ambition was accompanied by a strategy to turn the firm into a broad energy company and offer our customers various products to help them reach carbon neutrality.

In May 2021, we rebranded to TotalEnergies so we are no longer an oil major. Now it's oil, gas, renewables and electricity.

TotalEnergies is positioning itself in the growing energy markets. Demand for oil will begin to decline by the end of this decade, mainly due to the rise in electric mobility. Natural gas will be a transition fuel and we will see an expansion in green electricity from renewables.

Q | What are the key milestones over the coming years to meet your targets?

We are planning to allocate 50% of capex to maintain our existing assets, and will allocate the remaining 50% to growth. Half of the growth shall be sustained by electricity and renewables, the other half by gas and LNG.

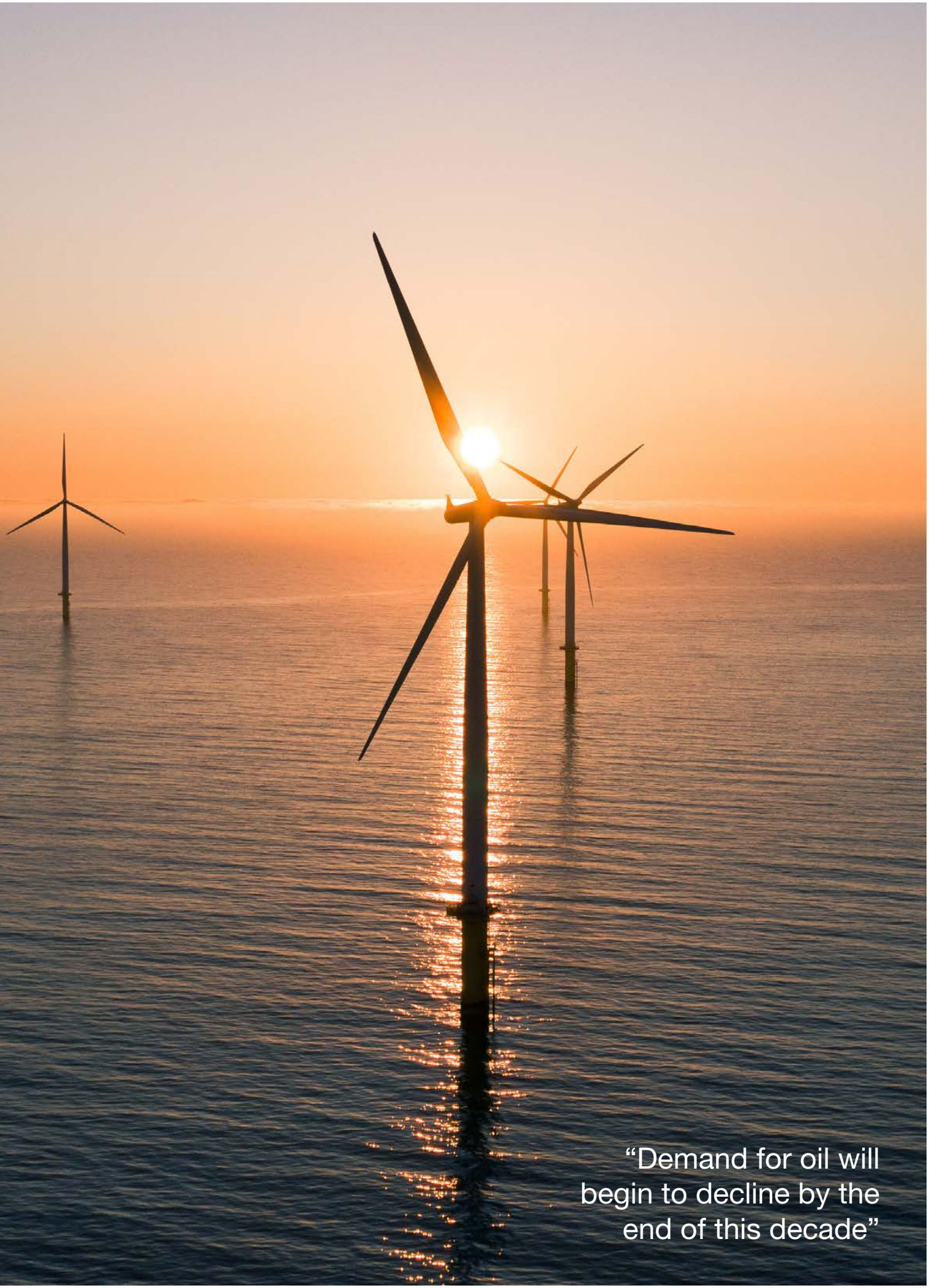
In order to reach our emissions targets and accompany our customers in their energy transition, our energy mix will drastically change. In the decade to come, we will decrease oil production by 30%. Natural gas will be the transition fuel, so we intend to consolidate our position as the world's top 3 LNG player. For renewables and electricity we already have a 10 GW installed capacity, and we are targeting 35 GW by 2025 and then 100 GW by 2030, which will position TotalEnergies among the top 5 producers of renewable energy. By 2030, the energy mix delivered to our consumers will be oil 30%, natural gas 50% and renewables 20%.

Q | Are the synergies between your legacy and new businesses a trend that's set to continue?

Yes, recent announcements of projects in Iraq and Libya perfectly illustrate our new model as a broad energy company: we can support oil producing countries in their energy transition by combining the production of oil, gas and solar to meet domestic demand for electricity. In Southern Iraq, we are constructing a new network to capture flared gas, and a 1 gigawatt solar plant to supply electricity to the grid.

These projects demonstrate how we can leverage our historical relationship in oil producing countries to create multi- energies.

The synergies are not only in projects but also energy markets, which currently demonstrate a clear interconnection. More of the energy mix is comprising electricity – it's 20% of global demand today and will rise to 40%.


“Demand for oil will
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But electricity from renewables means intermittency – we face issues with energy prices because of a drought in China and Brazil or a lack of wind in the UK and Germany.

As electricity is a secondary energy, you have to produce it, if not from renewables, then nuclear or gas. This is where TotalEnergies can bring value as we operate in all of these markets and they are interconnected. We can lower prices for customers and maximise value for stakeholders in these more complex systems.

Q | Why do you anticipate such a high share in natural gas, a fossil fuel?

Renewables are intermittent. In the end you want reliable or permanent power and that comes from a combination of nuclear, gas, coal and oil. You could make batteries but it's expensive and takes time to develop in order to supplement renewable power. Setting aside nuclear, as not all countries agree on it, gas is better as emissions are less than half compared to coal or oil.

In China, the shift is starting from coal to gas but we can't ask countries to phase it out if they don't have a reliable energy supply. So, gas has a role to play as a transition fuel and at COP26 many leaders reaffirmed that. To successfully transition to green energy we need to first produce more gas. Reliability of the energy system is fundamental for customers and governments.

Q | Do you view the UN's COP26 climate summit as a success?

The Glasgow conference had mixed results. National pledges mean we are now on the road to 2.4C rather than 2.7C so a little progress but not yet within scope of the Paris agreement. Still, I am optimistic, the glass is half full.

COP26 also highlighted the importance of energy transition but the speed of transition must take into account the agenda of economic development in particular for emerging markets. The India Prime Minister and the President of Nigeria were clear that climate change is a priority but they also have a very important task of getting their people out of poverty.

That's one of the big debates that didn't offer as much as expected, rich countries bringing the money necessary to decarbonise. Climate change is a global issue so even if we make huge progress in developed countries it will make little difference if we can't move together and help countries like India or South Africa develop their energy.

There was also a missing element – COP26 focused on supply, but there was no real debate about how to change behaviors and influence demand. On the one hand, people are pushing to invest less in fossil fuels but it's the reality of the planet's energy, and demand continues to grow. So, without regulation to curb demand, we face what's already happening, an energy price crisis where the price adapts and that's not good for anybody as it might slow down the pace of the energy transition.

Thinking we can solve climate change by simply putting pressure on fossil fuel supply is a mistake. It involves building a new decarbonised system of green energies, which is a gigantic task. We must build it over the next decade. But at the same time what's wrong is to think we can begin to invest less in the existing system. The energy system of today is 80% fossil fuels and it allows us to provide energy to emerging economies to grow as part of a Just Transition.

Q | What are the future green energies you are most excited about?

We are looking at floating offshore wind. So far, we have developed fixed bottom offshore wind but floating is a new frontier. There are technical obstacles to surmount but we have engineers and suppliers with expertise in this area.

There's a lot of talk about hydrogen. In reality, demand is still small today consisting mainly of refineries and fertilisers. To make it part of the energy mix, we need to create demand to scale it up and lower the cost.

E-fuels or liquid fuels to power planes and ships are essential as a question of storage. E-fuels combine hydrogen and CO2 by transforming CO2 as feedstock not as waste. It's costly today but we must innovate to make it more viable.

Wind and solar power have demonstrated over the past decade that scaling up the technologies has a huge impact on lowering the cost.

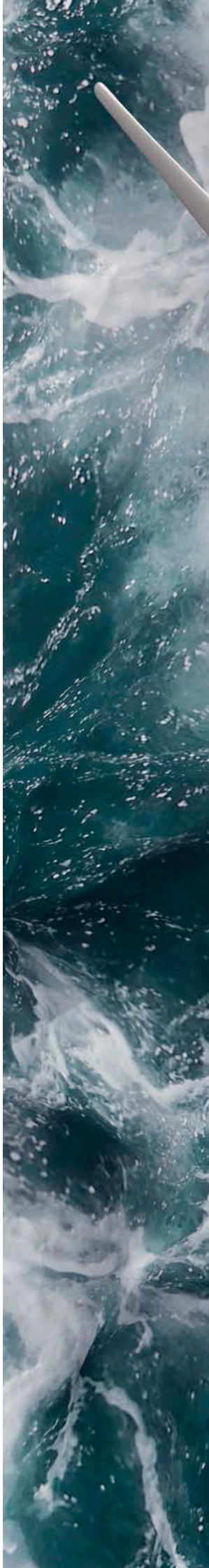
Q | How important are mitigation techniques like Carbon Capture and Direct Air Capture?

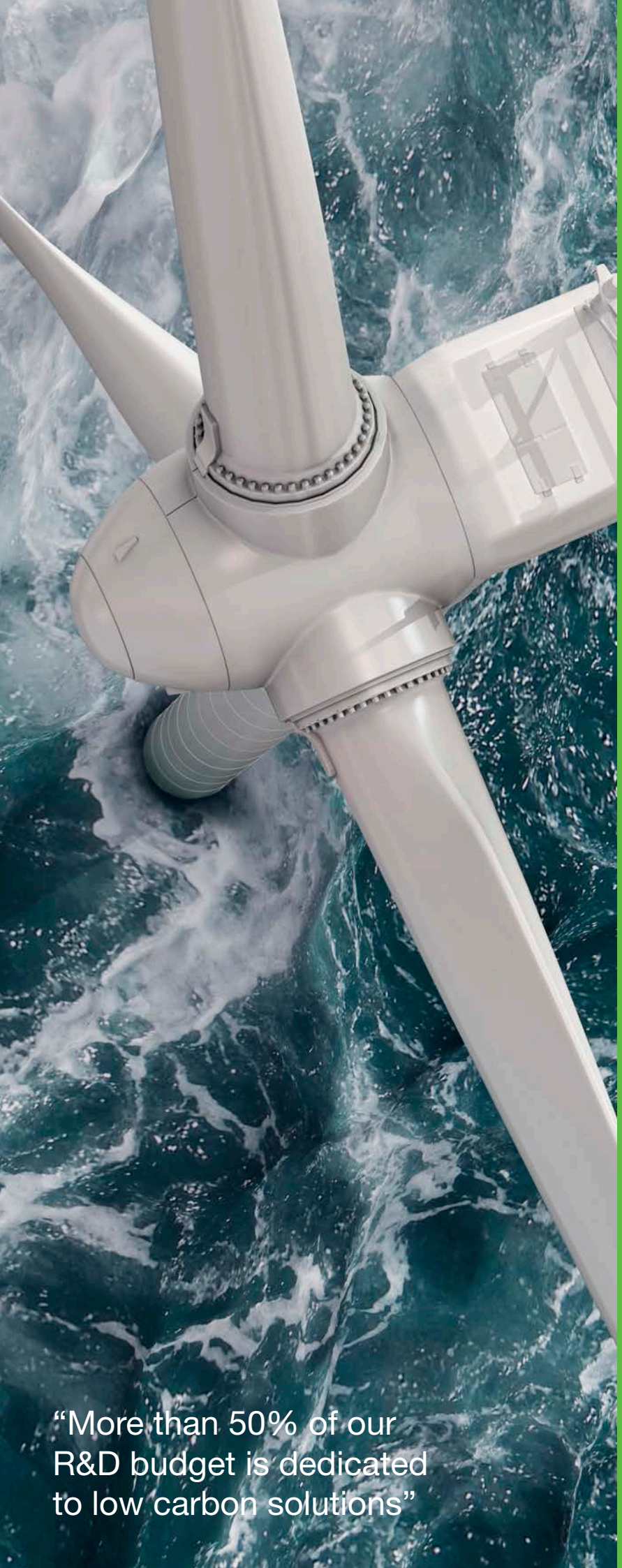
More than 50% of our R&D budget is dedicated to low carbon solutions: solar, wind, energy storage and hybrid systems, e-fuels, biogas, Carbon Capture and Storage (CCUS) and methane detection. R&D on digital and AI also contributes to accelerate the decarbonization of our activities.

We are investing in CCUS, in particular in the North Sea. We are also working on Direct Air Capture (DAC) but progress needs to be made before it's commercially viable. It can capture intense CO2 but it's costly when the intensity is low.

We know that NGOs don't like these technologies but we won't achieve carbon neutrality by 2050 without mitigation techniques. All climate scenarios continue to envision oil and gas demand by 2050, so you need to neutralise these emissions.

Sustainable nature based solutions like reforestation are also an important mitigation tool. Glasgow committed to stop deforestation by 2030. Natural carbon sinks are the most efficient in economic





"More than 50% of our R&D budget is dedicated to low carbon solutions"

terms at $10 per ton. These are the low hanging fruit.

Q | What's the profitability profile of renewable energy versus hydrocarbon?

For renewables, we put in place a business model with an objective of a 10% return on equity based on appetite from the financing world and being able to leverage low rates.

For all of our projects, we decided to take the construction risk but we sell a 50% stake and obtain very good valuations due to a lack of green assets and strong investor demand. With this business model, we exceed 10% returns while sharing the risks instead of keeping it on our balance sheet.

I'm convinced that the era of power purchase agreements for renewables will not last forever and turn into commodity markets where returns must be acceptable to find companies ready to invest.

Historically, oil and gas returns were 15% but with the high volatility we have observed in recent years, returns have been closer to 10% anyway.

Q | What role do banks play in the energy transition through loans, bonds or equity raising?

They play an important role and we are partnering with banks. The capacity of financial institutions to direct investments to green energies is crucial to building this new decarbonized energy system.

The rise of solar and wind has been possible due to low-cost money. A renewables plant is more capital intensive than oil and gas. So putting in place efficient leverage through bank financing is a way to accelerate green energies.

Q | Who is your Sustainable Hero and why?

My sustainable heroes are all TotalEnergies employees who are fully committed to transform a 98 year old oil & gas company into a multi-energy company, in order to supply more energy with fewer greenhouse gas emissions.

This interview took place in December as part of Nomura's ESGNOW! conference.

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