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Exxon Mobil Corporation – 2021 Investor Day Transcript

March 3, 2021, 8:00 a.m. CST

Stephen Littleton *– Vice President of Investor Relations and Corporate Secretary*

Good morning and welcome to ExxonMobil's 2021 Investor Day. Thank you for joining us this morning and we look forward to an engaging discussion. My name is Stephen Littleton and I am the Vice President of Investor Relations and the Corporate Secretary. I hope all of you, your families and colleagues are safe, in light of the challenges brought on by the coronavirus pandemic.

To accommodate ongoing public health requirements and travel considerations, this year's Investor Day will be held in a virtual format only. For this year's event, our presentation material will be streamed online and a copy of it is available on our Investor Relations website. The webcast recording will also be made available on the website at a later time.

I'll begin the discussion this morning with reference to the cautionary statement found at the beginning of the presentation material. I would also like to draw your attention to our supplemental information for additional content, definitions, and other relevant information for today's discussion.

You may also access our website at *exxonmobil.com* for additional information on factors that may affect our future results as well as additional information on our frequently used terms.

Let me start by reviewing today's agenda. We will begin with an audio presentation of approximately 1 hour and 30 minutes followed by a short break. We will return to a Q&A session with the management team.

During the presentation, you will first hear from Darren Woods on our plans for growing shareholder value in a lower-carbon future and the long-term business fundamentals supporting our investments. Neil Chapman will provide an update on our Upstream business with a notable focus on Guyana, Permian, and Brazil.

Following that, Jack Williams will provide an overview of the Downstream and Chemicals businesses. Andy Swiger will follow with the financial and investment plan. Darren will then return to conclude today's presentation.

So with that, it is now my pleasure to hand the floor to Darren Woods, Chairman of the Board and Chief Executive Officer.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Welcome everyone, thanks for joining us, I'm pleased to have the opportunity today, along with the members of our management committee, to give you an update on our plans for the future.

As you may recall, about this time last year we were in New York discussing our 2020 plans I doubt any of us could've predicted what the next 12 months would entail.

At the time we were just beginning to see the price effects of an oversupplied oil market which then rapidly degraded as the grave realities of COVID-19 manifested themselves.

A tragic toll on people and communities, extreme hardships across global economies, and of course, an unprecedented downturn in our industry.

In fact, it was the first time we've seen the Upstream, Downstream and Chemical businesses all at historic lows, reflecting the most challenging conditions I've seen in my more than 30 years in the industry

I'm proud of the way our people responded leveraging the strengths of our corporation to maintain an uninterrupted supply of essential energy and products, progress an industry-leading portfolio of advantaged investment opportunities, drive deep structural efficiencies to improve competitiveness, and achieve best ever safety and reliability performance.

We reduced cash operating expenses by more than 15%, including $3 billion of structural improvements and reduced capital investments by more than 30% without compromising the advantages or value of our projects.

We achieved our 2020 emission-reduction goals for both methane and flaring, and established new plans for 2025.

Permian Basin volumes exceeded plan. We progressed developments in Guyana, set a new record for polyethylene sales, and maintained our position as a global leader in carbon capture, one we've held for more than 30 years.

As we gather today, one year since the beginning of the pandemic, I'm incredibly proud and pleased by the way ExxonMobil has risen to the challenge, persevered through these tough times, and is now an even stronger company positioned for a successful future

A future committed to growing long term shareholder value, which starts with a foundation of competitively advantaged assets and investments.

Our current investment portfolio offers the best set of opportunities we've had in over 20 years.

Our capital plans through 2025 generate earnings and cash flow to sustain and grow the dividend, reduce debt and fund future projects that will continue to grow earnings and cash flow.

Our portfolio of investments generate returns of greater than 30%. 90% of our investments in upstream resources generate a 10% return at $35 per barrel, or less; downstream investments improve net cash margin by 30% and our Chemical investments grow high value performance products by 60%.

Building on our experience in 2020, we're maintaining significant flexibility to adjust to market conditions and continuing to leverage on-going work from re-organizing our Upstream and Downstream businesses to significantly reduce cost with structural savings of more than $6 billion a year by the end of 2023.

We are also working to build on our operational successes, delivering industry-leading safety, reliability and environmental performance. Having met our 2020 objectives to lower methane emissions and flaring, we have developed aggressive plans for further reductions.

And, we remain committed to playing a leading role in greenhouse gas reductions, consistent with the goals of the Paris Agreement, leveraging our experience and competitive advantages, advancing technologies needed for lower emissions, and making value accretive investments.

As we progress through the presentation this morning, Neil, Jack and Andy will discuss in more detail our operational and financial objectives, as well as our capital-allocation priorities and improving cost structure.

I'm going to begin this morning with a discussion of our commitment to helping advance a lower carbon future.

This is an important grounding for the various presentations today and will give you greater clarity regarding how we see our role in supporting the energy transition.

Despite the many challenges over the last year, we never lost sight of the critical issue of climate change. In addition to meeting the near-term demand for energy and products that support modern life.

We continued to reduce emissions from our operations, produce products that help society reduce its emissions, and invest in current emission reduction technologies. At the same time, we have sustained our extensive technology programs that leverage our core science capabilities and partnerships with academia, national labs and private technology companies to develop the new solutions needed to help meet the ambitions of the Paris Agreement.

And that is where I would like to start today, on a future that is aligned with the Paris Agreement, using 2 degree C scenarios from the UN's Intergovernmental Panel on Climate Change, or the IPCC.

Let me begin with some important context, the world's need for energy.

With growing populations and greater economic prosperity, the demand for affordable, energy will increase, particularly in developing countries.

Consider for a moment, that today, it takes the same annual amount of electricity to run a refrigerator-freezer in the U.S. as an average person in a developing country consumes in an entire year.

Average energy usage per person in India and Africa is 10% of that of someone in the U.S., and in 2018, about 800 million people lacked basic access to electricity.

Meeting future demand requires a diverse, interconnected mix of energy sources, which must collectively produce net zero emissions.

The U.N.'s body for assessing the science related to climate change, the IPCC and its models on future demand and energy mix are among the most respected and cited in the world. At ExxonMobil, we use the IPCC's projections, along with other third party projections, in developing our strategy and plans.

IPCC Lower 2 degree models project a variety of global energy demand scenarios with differences in absolute demand and mix.

All of the scenarios assume unprecedented gains in efficiencies double the historical rate of improvement, such that energy consumption per person declines this decade.

On average, the scenarios project that by 2040, wind and solar use will grow by more than 10 fold, and use of coal will significantly decrease.

Importantly, they project an essential role for oil and natural gas, as do most other third-party scenarios that meet the objectives of the Paris Agreement.

To understand this, let’s look at what is driving the continuing need for oil and gas on the next chart.

Underpinning the future demand for oil and gas is economic growth driven by an increasing population and growing prosperity. The continuing demand for oil and gas is concentrated in 3 sectors: Power Generation, Industrial and Commercial transportation.

More people with higher standards of living drive the demand for electricity.

Growing economies lead to more industrial activity, and that requires oil and gas for fuel and feedstock while also increasing the demand for commercial transportation.

In the future, the IPCC projects that these 3 sectors will account for about 80% of demand, a similar level to today.

The lack of alternatives to meet the full range of needs in these 3 important sectors lead to their continued use. As a result, for society to meet its ambitions for a lower carbon energy future, emissions in these hard-to-decarbonize sectors need to be addressed.

The next few charts take a closer look at the challenges in each sector and how they can be addressed.

To further reduce emissions innovations are required. The International Energy Agency, or IEA, reports that, unfortunately, only 6 of the 46 technologies and sectors to accomplish this are on track today.

In power generation, society needs on-demand electricity around the clock.

Today, natural gas represents a lower carbon alternative to coal. Wind and solar provide an even greater emission reduction, which is driving their growth.

However, both wind and solar are challenged by intermittency, and, in many places, poor resource quality. In other words, insufficient hours of sun or wind.

Batteries can help, but a break-through in their energy-density is needed for cost-effective longer-term storage. Gas fired power generation is an option, where the emissions can be captured and stored, and hydrogen can be used if the cost of production can be lowered.

All of these potential solutions require technology advances. Our focus is actively working these issues, which I’ll come to later.

In commercial transportation, large trucks, ships and airplanes require significant power and energy dense fuels to achieve the needed range.

Today’s batteries lack sufficient energy density for these heavy duty applications, and the batteries end up too costly, too heavy and take too long to recharge, making them impractical and uneconomic.

Similar to wind and solar, a breakthrough in battery technology and hydrogen will be needed to reduce emissions in heavy duty transport.

Lower cost biofuels that don’t compete for food, fresh water or land could also provide a lower carbon alternative. However, these all require additional advances in technology. We are working some of these areas as well.

Turning to industrial, many of the manufacturing processes used to produce products that support modern life require intense heat.

Today, there are almost no alternative fuels that meet this requirement.

Hydrogen is one possibility. However, as I’ve said, lower production costs with lower emissions are required. Alternatively, emissions from these processes could be captured, utilized and or stored with technology advances that lower the cost of Carbon Capture and Storage.

Fortunately, advancing these technology solutions also address the unmet needs of the power generation sector.

In addition, re-engineering the manufacturing processes using advances in process design and material science could lead to processes with fewer emissions.

So as you can see, there are significant technical challenges for each sector. Solving these challenges will require the combined effort and collaboration of governments, academia, and businesses.

Fortunately, there are overlaps. Developing a cost effective technology for one sector can benefit another.

ExxonMobil has spent decades researching new technologies that address these challenges. Today, we remain committed to this, with plans to position ExxonMobil as a leader in society’s drive for a lower carbon future.

Our focus in each sector is supported by decades of operating and commercial experience, engineering capabilities and core science competencies.

Today we’re the world’s leader in carbon capture, responsible for more than 40% of all the CO2 ever captured. ExxonMobil was the first company in the world to capture more than 120 million tonnes of CO2, which is equivalent to the annual emissions of more than 25 million cars.

Since 2000, we have reduced and avoided 320 million tonnes of emissions through energy efficiency initiatives and cogeneration projects. Today we have an interest in approximately 5,400 megawatts of cogeneration in more than 100 installations around the world.

We provide an extensive portfolio of products to help our customers lower their emissions. From natural gas in power, that produces up to 60% fewer emissions than coal; lubricants for wind turbines; thermal fluids for electric vehicles; to lightweight materials for the automotive and packaging industries.

We also support the 3rd party production of lower emissions energy. Today, we are the second largest buyer of wind and solar power in the oil and gas industry, and among the top 5% across all corporations, purchasing roughly 600 megawatts. In addition, we purchase and distribute more than 50 million barrels of biofuels annually.

Our progress in lowering emissions is underpinned by our R&D efforts. Since 2000, we’ve had 277 US patent grants and applications on energy efficiency and innovations to reduce greenhouse gases.

To further decarbonize these hard-to-abate sectors, we are focusing our research on lower cost hydrogen and carbon capture, advanced biofuels and manufacturing processes that require less energy, building on an already long history and strong foundation of R&D in these areas, which is illustrated on the next chart.

In recognition of the challenges associated with decarbonizing the sectors we just discussed, ExxonMobil has been researching, developing and commercializing low-carbon technologies for more than 20 years. We leverage our operating and engineering experience, scale, and core science capabilities through collaborations with academia, governments and technology companies, some of which are shown on the bottom half of this chart.

Areas of focus include carbon capture and storage, efficient separations, new materials and algae and cellulosic biofuels.

Over the past two decades, we've invested more than $10 billion on lower-emission energy solutions, with plans to invest at least another $3 billion through 2025.

Of course, critical to this work, is the potential for commercialization.

As you can see in the top half of the chart, we have a long history here too deploying technologies that reduce emissions at scale. In 2018 we established a CCS venture that we recently expanded into our new Low Carbon Solutions business. In 2020, we established a low emissions fuels venture, which with time, will merge with our Low Carbon Solutions business.

In order to materially impact society's emissions, though, these technologies must address a significant market need and provide an economic incentive. Which we believe they will.

Our development of next-generation technologies, coupled with our base business of oil, natural gas, fuels, lubricants and performance chemicals, positions us very well to capitalize on the growth and opportunities that are coming together to support lower-carbon energy solutions.

Using estimates from the IPCC's 2 degree scenarios and 2040 projections, this slide shows the immense potential in addressable markets and the fit with our existing businesses.

The liquid fuels market in 2040 is estimated at $6 trillion, with biofuels expected to grow to roughly $400 billion. Hydrogen, which today barely registers at less than 0.1% of the energy system, is expected to grow to roughly $1 trillion.

Chemical products, used in infrastructure and consumer goods, is estimated to be more than $4 trillion.

Carbon capture can help society decarbonize energy intensive industries, and as a result is expected to grow by 35% per year, reaching $2 trillion while also delivering a material impact on lowering emissions.

The IEA estimates that CCS could mitigate up to 15% of global emissions, and the IPCC believes CCS could be done for half the cost of other lower-carbon solutions.

Our long history and expertise in capturing CO2, the advances we are making in carbon capture technology today, and the growing market need are coming together to create a unique market opportunity for ExxonMobil.

Today, we have an industry-leading position in carbon capture and storage with large scale facilities operating across the globe. We have 9 million tonnes of annual capture capacity, more than anyone else in the world. We're number 2 in CO2 pipelines, and number 2 in CO2 geologic storage.

This depth and breadth of operating experience, coupled with our history of process innovation, project execution, subsurface expertise, and ability to scale technology, gives us a competitive advantage in capturing value in this fast growing market.

In 2018, we formed a Carbon Capture Venture to identify and develop potential CCS opportunities using both established and emerging technologies. Their efforts have led to more than 20 potential CCS opportunities in Asia, Europe and North America.

We're assessing multiple CCS projects along the U.S. Gulf Coast that have the potential to collect millions of tonnes of industrial emissions for storage in geologic formations.

In the Netherlands, we are advancing plans to collect CO2 and store in depleted offshore gas fields, and we are participating in a study of large-scale production of low-carbon hydrogen.

In Singapore and Belgium, we are participating in projects to capture and store CO2 generated by industrial activities.

Progress on these efforts led to the establishment of the ExxonMobil Low Carbon Solutions business, which we announced last month. This new business will initially focus on CCS, but will progress commercialization of other lower-emission technologies as they mature.

The establishment of the Low Carbon Solutions business coincides with a growing recognition by governments and investors of the importance of CCS and a developing market for emission-reduction credits, all of which are critical for broad scale commercialization.

Starting with government policy. 10 years ago, there wasn't much government support for CCS. That has dramatically changed in the past 5 years with more than 20 different programs announced around the world, more than half of those coming in the past two years.

In addition to this, governments need to implement legal and regulatory frameworks for large-scale deployment, including permitting for new carbon capture projects and CO2 pipelines, and developing mechanisms to grant storage rights on federal or state lands.

Formulating these regulations will be critical to unlocking the full potential of CCS, and this will be an important area of advocacy for our Low Carbon Solutions business.

Private investors are also seeing a big opportunity in this space. "Climate Tech" is a growing investment theme for venture capital funds, where investments have grown five times faster than the overall venture capital market.

Most of the new money is flowing into transportation and mobility, while the critical sectors of power generation and industrial have been largely neglected.

As a result, the two sectors that account for more than two thirds of global emissions are receiving less than 20% of the available funding.

This presents opportunities for our Low Carbon Solutions business to play a key role. Leveraging the corporation's technologies, project expertise, operating organizations and facility footprint, our business can serve to de-risk investments and potentially attract more investments dollars, which are needed as companies look for carbon offsets for their hard-to-abate emissions.

A carbon offsets market allows capital to flow to lower cost projects that, in turn, reduces carbon and generates valuable carbon offset credits.

Today, the market is less than 1% of all global emissions. However, third parties project that offsets could potentially grow to 20% of global emissions. This provides additional opportunity for our Low Carbon Solutions business.

So as you can see, there is a growing momentum and opportunity, and the potential for ExxonMobil to make a valuable contribution. The questions are "at what cost?" and "for what return?"

There is much work to be done in determining this, but the underlying fundamentals for CCS opportunities hold promise.

I'll start by anchoring the investment case in some important fundamentals of current CCS opportunities.

Roughly two thirds of energy related emissions originate from point sources, where carbon capture can play a role in reducing emissions.

You can see this in the chart on the left from a third party study. The blue bars represent the cost plus return to apply existing CCS technology to mitigate emissions in four different industrial applications.

The green lines represent the current level of government support to mitigate CO2 emissions in different sectors. You can think of these lines as sources of revenue for mitigating CO2.

U.S. 45Q Tax Credit supports deployment in some low costs applications but are not sufficient for other parts of the US manufacturing sector.

There is, however, more than ample policy support in other sectors that would facilitate large-scale CCS deployment to dramatically reduce industrial and power generation emissions.

In transportation for example, policy support, such as the U.S. Federal EV tax credit, is much higher than the policy support needed for these industrial applications. CCS is much cheaper and could address emissions with less cost to society.

Accessing this existing policy support for CCS projects could generate very competitive returns. This would allow these projects to effectively compete for capital, and potentially generate tradable carbon offsets to help reduce emissions at a lower overall cost to society.

Our objective is to build on over 10 years of CCS-related R&D to further reduce the cost, facilitating society's transition to a lower carbon future at the lowest possible cost.

Leveraging our expertise in material science and collaborations with academia and national labs, we've discovered a new material that, while very early in its development, has the potential to cost effectively capture CO2 from nearly any gas mixture, including dilute sources such as air.

Laboratory tests indicate the new material acts like a sponge for CO2, capturing carbon dioxide emissions 6 times more effectively than conventional technology, using significantly less energy.

We're also working on a direct air capture technology with Global Thermostat to capture CO2 economically, utilizing waste heat from industrial processes, such as cement production and petrochemical refining.

In another collaboration with FuelCell Energy, we are researching the potential of utility-scale fuel cells to capture carbon emissions, while generating power. The process is promising. Unlike other carbon capture technologies, the fuel cells concentrate CO2 emissions and, at the same time, generates power versus today's technology that consumes it. You can see how this could be very helpful in reducing cost.

We're looking to trial this technology as part of the project in the Netherlands that I mentioned earlier. Field deployment is a critical step in developing the technologies and evaluating their potential to scale. It is also critical in getting on the experience curve which will further help to drive down cost for the technology and other elements of the value chain, such as transportation and storage.

Another promising potential for the fuel cell is the option to adjust the configuration to produce Hydrogen rather than power.

This could be of significant value as a low carbon fuel in hard-to-abate applications, such as heavy duty transport, power generation or energy intense industrial processes. It is also a good fit with our experience and core competencies. Today, we produce 1.3 million tonnes of hydrogen a year.

Similar to carbon capture, ExxonMobil has the potential to make a valuable contribution here. However, the questions are the same, "at what cost?" and "for what return?"

Today, producing hydrogen from natural gas using CCS is advantaged versus the existing abatement policies discussed previously. Based on IPCC projections, future returns could be attractive, but thoughtful government policies will be required.

Notably, government policies in the past few years have been accelerating. Among the G20 and EU, 11 economies now have policies that support hydrogen, with some countries developing national roadmaps for hydrogen as part of their climate and energy security plans.

Our fuel cell project in Rotterdam will evaluate the potential to produce low-cost, low-carbon hydrogen while capturing CO2. We're excited by the potential for this single technology to deliver multiple benefits.

Ultimately, to meet the needs of what is expected to be a fast growing opportunity, with a potential addressable market of $1 trillion by 2040, further advances in technology, distribution and production to reduce the cost of low carbon hydrogen will be important as will capital investments.

Capital investments that generate returns. That is the foundation on which we've established the Low Carbon Solutions business. For both hydrogen and CCS make value accretive investments, establish a profitable business, diversify our revenue streams, and create long-term shareholder value. While the low carbon market is in its early stages of development, we are encouraged by the progress we are seeing and are excited by the potential for our Low Carbon Solutions business.

In the meantime, we must all work to lower the emissions of today's economy.

We are making excellent progress in reducing our own carbon footprint.

Since the inception of the Paris Agreement in 2016, we have reduced greenhouse gas emissions by 6%, significantly outpacing the progress made by society as a whole, which increased global emissions by 2%. Our performance was also better than the average of developed countries, which decreased emissions by about 2% over that time period.

At year-end 2020, we achieved emission reduction goals we outlined in 2018. These included a 15% reduction in methane emissions versus 2016, and a 25% reduction in flaring versus 2016.

Having achieved these goals, in the 4th quarter last year, we announced new emission reduction plans for 2025.

They include a 15% to 20% reduction in greenhouse gas intensity of our upstream operations compared to 2016, a 40% to 50% reduction in methane intensity, and a 35% to 45% reduction in flaring intensity.

Our 2025 emission reduction plans are expected to reduce absolute greenhouse gas emissions by an estimated 30% for the Upstream business.

Similarly, absolute flaring and methane emissions are expected to decrease by 40% to 50%.

These plans put us on a path for industry-leading greenhouse gas performance by 2030, and to eliminate all routine flaring by then as well, in line with the World Bank initiative.

Our reductions to date and plans through 2025 are projected to be consistent with the goals of the Paris Agreement and within the hypothetical 1.5 degree and 2 degree Celsius pathways.

Which is critical in positioning the company for a lower-carbon energy future and long-term success. Some of the steps we are taking and the contributions we are making in the transition to a lower carbon future are highlighted on this page.

I am confident that our contributions will grow and that we will play an important role in delivering a lower carbon future while continuing to meet the vital needs of society.

This is what we have always done from the very beginnings of our company. In our early days, we met society’s need for light by producing kerosene to replace whale oil used as fuel for lamps. When Edison invented the light bulb, and society transitioned to electricity for its lighting, we transitioned to gasoline to meet the growing demand for automotive fuel. With shortages brought on by the world war, we invented catalyst and processes to meet the demand for desperately needed products. Over time, catalyst and processes evolved to produce a wide range of chemical products to meet the needs of more modern life styles and rapidly growing economies.

As a company, we’ve been transitioning for more than a century. The transitions are almost always underpinned by advances in technology, which is why we consistently invest in maintaining a core competency in science and R&D.

As you’ve seen this morning, our commitment to technology is serving us well as we evolve the company to successfully compete in a lower-carbon world.

We are committed to playing a leading role in greenhouse gas reductions consistent with the goals of the Paris Agreement, advancing technologies needed for lower emissions, and making the necessary investments to responsibly meet the continuing demand for energy and products essential to modern life.

Which brings us back to the projected demand for energy in 2040, using IPCC's 2 degree scenarios where oil and natural gas remain essential, making up almost half of the energy mix in 2040. This may seem counter-intuitive, but reflects the essential properties of oil and gas, and recognizes the work to develop technologies that reduce their carbon footprint.

In meeting this projected level of oil and natural gas demand, investments will be needed to offset the depletion rate of about 5% to 7% per year, which, when compounded year on year, has a remarkable effect.

The chart on the right illustrates the point. Under the average of IPCC 2 degree scenarios, demand for oil is expected to be about 75 million barrels per day in 2040. In 2019, world oil supply was about 98 million barrels per day. Without investment, depletion would reduce the global supply to about 22 million barrels per day.

This would leave the world more than 50 million barrels per day short of what's needed to meet the projected demand in 2040, in a 2 degree world.

To further underscore the point, the International Energy Agency estimates that, on a 2 degree pathway, almost $12 trillion of investment for oil and natural gas will be needed between 2020 and 2040.

The depletion curve illustrates another point. Given the level of change required, most 2 degree pathways are back-end loaded, with demand for oil and gas dropping off in the later years. In the near term, with lower erosion in demand and on-going depletion, the need for investment is even greater.

So, while we collectively work to achieve a lower carbon future, we must also work to meet the continuing demand for today's energy and products that are so essential to modern life. Our plans through 2025 do this, which the management committee will take you through. But, let me start with a high level summary.

After delivering "best ever" workforce safety and reliability in 2020, our plans are focused on making further improvements.

We will continue to leverage the new organization to deliver additional cost reductions, totaling $6 billion a year by the end of 2023.

We are maintaining a flexible capital program, investing in industry advantaged high-value projects for the future, while maintaining the dividend and deleveraging.

Investments in the Upstream deliver value through the development of high quality, low-cost-of-supply resources. About 90% of our investments in developing Upstream resources have a cost of supply of $35 per barrel or less.

In the Downstream, we deliver a 30% improvement in net cash margin mainly through conversion projects at advantaged sites.

And in Chemicals, we grow our performance products by 60%.

As we continue to deliver value through our base business, we are pursuing a strategy, underpinned by technology, for success in a lower carbon energy future, consistent with the goals of the Paris Agreement. This is our commitment.

With that, I'll now turn it over to Neil who will cover the Upstream in more detail.

Neil Chapman *– Senior Vice President*

Thank you Darren, and good morning everyone.

As Darren discussed, oil and natural gas, our base business, will continue to be essential in meeting society's demand for reliable and affordable energy into 2040 and beyond. Meaning investments in these resources will be critical, especially in overcoming the natural decline rates of existing fields. So, as I discuss our Upstream business this morning, I want to start by reconnecting with our strategy.

First, we continue to strengthen the competitiveness of our portfolio. Darren mentioned it off the top, and it bears repeating, our teams delivered remarkable operating performance in 2020, matching our best-ever reliability during one of the most challenging years any of us can remember.

We reacted rapidly to the deteriorating market conditions caused by COVID.

In the Upstream, we reduced our cash operating expenses by 18% versus 2019 and we reduced our Capex by more than 30% versus the 2020 Plan. We have also reduced our Upstream Capex outlook by about $50 billion through 2025 by pacing investments and working with partners and governments to improve capital efficiency and retain project value.

However, the investments we do plan to make through 2025 are the strongest in 2 decades with approximately 90% of our Capex generating rates of return greater than 10% at or below Brent prices of $35 per barrel for the life of the asset.

Another important lever in strengthening our portfolio is the continuous high-grading of assets through divesting non-strategic, late-life, assets. While the market environment has been challenging, we have made solid progress without compromising on achieving our retention value objectives. This includes the recent divestment of our North Sea upstream assets for over $1 billion, which has the potential to increase with a contingent structure linked to commodity prices.

Second, we have a robust pipeline of high-value, higher-margin future oil developments that are industry-leading.

Starting with the continuing success we've had in Guyana. With 18 deepwater discoveries to date, we have increased the estimated recoverable resource on the Stabroek block to around 9 billion oil-equivalent barrels.

We are focusing our exploration activities in 2021 on the high-potential deepwater basins offshore Guyana-Suriname and Brazil, where we hold leading acreage positions.

Third, knowing that oil and natural gas must play an essential role even under 2 degree scenarios, we have made great progress in reducing our emissions footprint. We achieved the goals we set forth a few years ago to reduce flaring and methane emissions versus 2016 levels. And today, we are focused on reducing both emissions intensity and absolute emissions from our Upstream operations in line with our 2025 plans, which, as Darren covered this morning, are consistent with the goals of the Paris Agreement.

When we use the term “industry-leading” to describe our portfolio of investment options, what we’re referring to is the quality of the developments, their resilience to low prices, and the ability to generate attractive returns.

The investments we’re making in the next 5 years prioritize the assets that achieve the highest returns and are resilient across the price cycle.

As we shared during our fourth-quarter earnings call, this slide shows the cumulative Upstream capital spend to develop resources, from 2021 through 2025 against the Brent oil price required for the investment to generate a 10% rate of return. This is what we deem our “cost of supply.”

As depicted here, essentially all our Upstream Capex spend through 2025 has a cost-of-supply below $40 per barrel, Brent.

In fact, approximately 90% of our investments can generate double-digit rates of return at $35 per barrel or less.

These investments generate an average return, using third-party price outlooks, in excess of 30%. This is why we refer to these opportunities as “industry-leading.”

Over the next few slides I’ll highlight a few of these investments.

Starting in Guyana. Very few assets in the world can compete with the world-class resource we’ve discovered in the Stabroek block, which is now around 9 billion oil-equivalent barrels and is the largest oil play discovered in the past decade.

Our first discovery was in 2015 with the Liza-1 well, after others in industry had drilled more than 40 offshore dry holes in the basin. Since that initial discovery, we’ve made 17 additional discoveries, 3 of those in 2020, with an exploration success rate of about 80%.

Aside from Liza Phase 1, which has been in production for over 1 year now, we’ve sanctioned two additional projects, Liza Phase 2 and Payara, that are on pace for start-up in 2022 and 2024, respectively.

Beyond that, we have a clear line of sight to the next three projects, which all together are expected to produce more than 750,000 barrels of oil per day by 2026.

The resulting financial outlook is very strong generating double-digit returns at less than $35 per barrel Brent. At $50 per barrel flat real from 2021, we expect Guyana production to generate around $3.5 billion of operating cash flow in 2025, with an average return of better than 20%.

The greenhouse gas intensity of our Guyana developments is expected to be more than 45% lower than our Upstream average in 2025. And, consistent with the World Bank initiative, our plan is to eliminate routine flaring by 2030.

Importantly, we maintain a strong relationship with the government and the people of Guyana, providing employment opportunities for more than 2,000 Guyanese to date, and we expect that number to grow as additional developments are brought on line in future years.

This slide provides a more detailed view of our development plans in Guyana.

Liza Phase 1 achieved nameplate capacity in 2020 with reservoir performance above expectations.

The hull for Liza Phase 2, the Liza Unity, is in Singapore for the topside's installation and is on schedule for start-up in 2022. The Floating Production Storage and Offloading vessel is expected to arrive in Guyanese waters in the second half of 2021.

Payara achieved Final Investment Decision in 2020 with plans to commence production in 2024.

Despite the challenges created by the COVID pandemic, our teams have done a remarkable job to retain these aggressive schedules.

We recently announced additional exploration successes at our Yellowtail and Redtail prospects, and are confident this area will progress as our fourth major development on the block. We plan to submit a development plan to the Government of Guyana before the end of this year.

Looking out even further, we would anticipate having two additional FPSO's on-line by 2027, with total capacity of more than 1 million barrels of oil per day.

As you can see on the left of this slide, we estimate that the first 6 FPSOs can develop between 40% and 50% of the total resource discovered to date. Therefore, it's possible up to 10 FPSOs may be needed to fully develop the 9 billion barrels that we have discovered so far.

We will continue to work closely, and in partnership with the government, and anticipate their support to maintain future development pace consistent with what we have demonstrated to date.

As we continue to develop these resources, we plan to leverage our proven project execution capabilities to capture the many efficiencies in our "design one, build many" approach to ensure the projects continue to deliver high returns and capital efficiency, which in turn, maximizes the value for the government, our JV partners and the people of Guyana.

So on the previous slide, I discussed how we are developing what we've found. On this slide, I'm going to focus on what we have yet to find.

Our acreage position in the Guyana-Suriname Basin is the largest of all the International Oil Companies. The Stabroek block alone, which we operate, is about 6.6 million acres which is equivalent to more than 1,000 blocks in the Gulf of Mexico. 17 of our 18 discoveries have been in the Southeast region of the Stabroek block.

Importantly, the resources we've discovered to date are high quality. This, combined with the size and density of the resource, enables a highly capital-efficient development, with the potential of extending production plateaus and keeping the production facilities full through integration. It provides significant flexibility on how we develop the resource.

The slide shows the relatively small area that has been explored. There is still significant potential for additional exploration. Our discoveries in 2019 and 2020 at Tripletail, Yellowtail, and Redtail identified new high-quality reservoirs with hydrocarbons at greater depths, which has opened up new plays.

The image in the top left of the slide is a high-level seismic cross section of this region illustrating our discoveries. Each discovery is calibrated based on information from an area that is typically just hundreds of meters from that well.

So you can see that with this area being around 100 miles from northwest to southeast, there is considerable exploration upside.

In 2021 we plan to further test this potential, as well as appraising some of the previous discoveries, by drilling 10 more exploration and appraisal wells.

In 2020, we began to test the extension of the known plays and searching for new plays outside of the southeast portion of Stabroek. We have drilled our first wells in the Canje and Kaieteur blocks and also in Block 52 in Suriname. All of these wells confirmed the presence of hydrocarbons and high-quality reservoirs, and we are actively integrating the data to guide our future program.

By mid-year 2021, we expect to have 6 drilling rigs in the basin to advance exploration, appraisal and development activities.

It’s still early days in the program, but we continue to be very encouraged, and we estimate the resource potential of the basin to be more than double what we have already discovered.

Next I will turn to the Permian. It continues to be one of our highest-priority investments that offers unique short-cycle flexibility, which, as demonstrated in 2020 and in our forward plans, enables us to quickly adapt to market conditions.

We have more than 10 billion oil-equivalent barrels of estimated resource on our largely contiguous acreage position.

Over the past 6 years, our Permian operations have met or exceeded our volumes projections each year. In 2020, we produced about 370,000 oil-equivalent barrels per day, which was 35% higher than in 2019, despite significant curtailments during the year.

Looking ahead to 2025, we expect our production from the Permian to nearly double to 700,000 oil-equivalent barrels per day, depending on market conditions.

And in terms of environmental performance, we have made significant progress toward our objectives and are leveraging our scale and technology to minimize our footprint. We are reducing the greenhouse gas intensity, and in 2025 expect it to be around 50% lower versus 2016 for the Unconventional portfolio.

In addition, we have reduced flaring intensity in the Permian by 80% versus 2018 and, again in alignment with the World Bank initiative, are moving toward zero routine flaring from our operations.

We have taken a leading role in promoting methane detection, working with third parties on pioneering technologies that utilize land, aircraft, and satellite detection techniques, and we continue to advocate for additional methane regulations to ensure industry implements well understood best practices to reduce emissions.

In addition to leveraging technology to address emissions, we continue to develop a strong proprietary technology set focused on lowering development costs and increasing resource recovery.

Our innovative cube development approach combines the application of our sub-surface technology, our understanding of the geology, and our drilling capabilities to bring upside of a more that 40% increase in NPV, by minimizing parent-child effects and maximizing recoveries. I'll come back to this in a couple of slides.

In 2020, our average recoveries exceeded plans and we are continuing to see strong recovery performance.

A large resource, higher capital efficiency, lower costs, and greater recoveries are the foundation of our strong financial performance.

In the fourth-quarter, our Permian operations generated positive free cash and going forward our development plan is to remain free cash positive, even at lower commodity prices.

Turning to operating cash flow, at $50 flat real, we expect to generate more than $4 billion in 2025

And much like our advantaged Guyana assets, our Permian development is also robust to lower prices with double-digit returns at less than $35 per barrel, while offering the flexibility to adjust pace based on market conditions.

This slide provides a 2-D surface map view of our Permian acreage position, containing an estimated recoverable resources of more than 10 billion oil-equivalent barrels on our 1.8 million net acres. You can see from the insets that our acreage is both contiguous and large spanning both the more mature Midland Basin and the less-developed Delaware Basin. Higher-margin liquids make up around 75% of the product mix.

Our development plans are geared to leverage our unique set of competitive advantages, namely the combination of our acreage position, our subsurface technology, our drilling and completions expertise, and our demonstrated historic success in executing projects of this scale.

As you are all aware, the rest of industry has struggled to deliver major projects on budget and schedule in recent years. Together, these advantages are key to improved capital efficiency, lower operating costs and driving higher resource recovery.

Our Permian development plans are designed to optimize the balance between production rates, resource recovery and capital efficiency, and our cube development approach is an integral part of this development plan.

There's no better illustration of our advantaged developments than Poker Lake, which is currently our largest development in the Permian Basin at more than 65,000 acres. This large scale, multi-decade development contains approximately 25% of our total Permian resource. Its contiguous acreage enables a flexible and capital-efficient manufacturing approach at scale, which provides a low-cost development plan based on multi-well pad corridors.

Similar to how I described the Guyana “design one, build many” philosophy, the same applies to Poker Lake, as it offers repeatable execution, and enables shared surface facilities to drive efficiencies and lower operating costs.

An example is our Central Processing Facility, which started up its initial production train last June. At full operational capacity, the facility will have the ability to process 200,000 barrels per day of crude and 400 million cubic feet per day of natural gas. The Facility enables takeaway flexibility, rapid movement of our production to market, and low cost expansion options to facilitate future developments.

This slide shows the significant improvements we’ve made over a relatively short time to reduce costs and enhance efficiency in the Permian. These improvements reflect the hard work of our people, the organizational changes we made in 2019, and the continued evolution of our technology and best-practices.

In our 2019 Upstream reorganization, we better integrated the experience of our global drilling, technology, and project organizations, with the unconventional operating organization. Working together, they made a step change in performance that continues to improve.

2020 Delaware drilling rates were more than 50% better than the full year 2018 results and 40% better than our 2019 plan. Drilling and completion costs were 40% lower and lease operating expenses, were more than 35% lower, than our 2018 results.

We estimate that roughly two-thirds of the savings in 2020 were the result of improved performance. As an example, the number of frac stages achieved in a day increased by more than 100% versus 2018.

The markets also played a role in the improvements, as we’ve high-graded and retained our best crews and contractors through the activity slowdown.

As we enter 2021, our progress is continuing, exceeding our plans and further increasing the value of this resource. As we’ve improved our costs in the basins, we’ve also increased recoveries.

As you can see, our Poker Lake development stands out as having the best average well oil production rates through 365 days in the industry. This performance is the result of a continuously improving understanding of the subsurface, as we identify the right zones to target and optimize the well spacing within various stacked reservoirs across our acreage.

We’re also optimizing frac effectiveness with improving completion designs and leveraging our technology set as a key enabler to further improvement in recovery.

Our Permian operations are better than we had anticipated at this stage of our development.

This slide illustrates the flexibility in our future plans.

In 2021 we expect to produce around 400 thousand oil-equivalent barrels per day and our longer-term outlook is flexible based on price as illustrated in the chart.

That flexibility extends to our balance of acreage on federal and state lands. About 20% of our total Delaware and Midland acreage is on federal lands; and while our short-term focus remains on Poker Lake, which is on federal leases, we do have flexibility to pursue non-federal lease opportunities while maintaining our capital efficiency targets.

Our investment pace in the Permian is set by maintaining positive free cash, delivering industry-leading capital efficiency, achieving better than 10% rates of return at less than $35 per barrel, and the strength of the corporations balance sheet.

We will continue to leverage the short-cycle, flexible nature of the unconventional developments and have reduced the Permian Capex versus our previous plans as we focus on reducing debt and strengthening the balance sheet.

I will now turn to Brazil. The Bacalhau Development, with approximately one billion barrels of recoverable resource, further expands our portfolio of low-cost of supply deepwater developments.

We are working with the operator, to bring our proven experience in deepwater project management and execution to deliver this world-class high-return project on schedule in 2024.

Like our other major developments, this investment has a double digit return at less than $35 per barrel, and we anticipate that in 2025, Bacalhau will deliver approximately $1 billion of operating cash flow, and a return of greater than 15% at the $50 per barrel flat real price set.

We are working with the operator to develop Bacalhau consistent with the objective of lowering greenhouse gas intensity. For Bacalhau, we expect the greenhouse gas intensity to be more than 65% lower than our Upstream average in 2025.

In terms of future Brazil developments, we have a significant position in the prolific Campos and Santos basins, and in Sergipe, with 2.6 million net acres total. Of which, we operate more than 60%.

Brazil is one of the most prospective offshore basins in the world and, on our acreage, we have multiple prospects each averaging more than 1 billion oil-equivalent barrels of resource potential. Very few places in the world have this type of potential in multiple single prospects.

To date, our partner has drilled three exploration wells that confirmed the presence of a working hydrocarbon system in the outer basins. We are continuing to integrate these results to guide our next exploration activities.

Earlier this year we began our operated exploration campaign with the Opal well, and we anticipate having results in the second quarter. Aside from Opal, we have plans to drill about 4 more exploration wells this year.

Before I hand over the call to Jack, I want to touch on our LNG business and the future developments, recognizing that significant new capacity for this cleaner energy alternative will be needed in the 2025 to 2035 timeframe.

Our approach to LNG is based on developing the most advantaged capacity in the industry.

We have a diverse and growing portfolio that plays to our corporate capability in developing major projects in frontier locations; as we've done in PNG and Guyana, among others.

In terms of specific LNG projects, we are pleased with the offshore Mozambique Area 4 progress on the Coral floating LNG. The development remains on track for startup in 2022 with major equipment modules now set on the vessel.

We are working with our partners, the government and Area 1 to pursue additional synergies and lower the investment costs for the Rovuma investment in Mozambique. FID timing, will depend on the outcome of this work as well as the broader market conditions.

The Gulf Coast Golden Pass project provides a unique advantage as a low-cost import terminal conversion, offers supply source optionality to our customers and provides logistics optimization and significant cost savings potential for us and our partner Qatar Petroleum. Construction is on-schedule with major equipment deliveries beginning in 2021 and we anticipate a start-up in 2024.

Finally, in PNG, we are encouraged by the signing of the fiscal stability agreement for Papua, which underpins two trains of the brownfield expansion at PNG LNG, and continue to work with our partners to ensure the expansion is optimized to further improve capital efficiency prior to entering FEED.

Our ExxonMobil operated PNG LNG operations are in the top quartile for GHG performance according to industry benchmarking.

From a financial perspective, the resilience of our LNG portfolio was demonstrated in 2020 as it generated approximately $4 billion of operating cash flow despite low prices.

Looking ahead, with sales expected to increase by about 10% by 2025, we anticipate operating cash flow to increase to approximately $5 billion, with resilient double-digit returns at prices of less than $5 per million BTUs for our LNG portfolio.

As I wrap up my prepared remarks, I wanted to give you a view on our production outlook over the next few years.

As stated earlier our strategy is driven by improving the competitiveness of our portfolio, increasing the value of each barrel, while making sure we retain the flexibility to adjust to market conditions.

Our capital investments are prioritized toward low cost-of-supply and higher return liquids opportunities in Guyana, the Permian Basin, Brazil, and longer-term LNG investments. We plan to reduce our position in North American dry gas by about 50% through 2025.

For this year, we expect to produce about 3.7 million oil-equivalent barrels, which is in line with 2020, and production to remain roughly flat between now and 2025, though we will have the ability to flex and capture additional value depending on the market conditions.

As we communicated back in November, our Capex has been reduced by about $40 billion from 2021 through 2025, that’s in addition to the $10 billion reduction in 2020, and our Permian plans include a Capex reduction of about 40% over the same time period. Our Guyana and Brazil investments are unchanged.

By 2025 about 40% of our production will be associated with low cost-of-supply investments that start-up after 2020.

This chart illustrates our focus on increasing earnings power and cash flow generation. At $50 per barrel Brent, we expect our plans to deliver 20% more cash in 2025 than we expect to deliver this year, even as volumes remain essentially flat. This is a reflection of the quality of the barrels, the improving cost structures, and our stronger portfolio mix.

So with that, I'll turn the call over to Jack Williams to discuss our Downstream and Chemical businesses.

Jack Williams *– Senior Vice President*

Thank you Neil and good morning everyone. Hope you are all doing well and staying healthy.

I'm going to spend the next few minutes talking about our downstream and chemicals businesses. And I must start by mentioning the exceptionally strong performance of both our downstream and chemical organizations during the challenges of 2020. They delivered record safety and reliability performance, and kept our plants and facilities running, supporting our customers and maintaining an uninterrupted supply of products for societal-critical items throughout the pandemic. Really outstanding performance by our teams.

So now we move to our strategies in these businesses and then talk through our integrated portfolio of products and projects. Our downstream is organized into Fuels and Lubricants value chains, which serve different markets but are highly integrated. Over 75% of our fuels refinery capacity is integrated with lubricants, or chemicals, or both.

In the lubricants business, our Mobil brand of synthetics is the clear industry leader in this highest-quality segment. The graph on the left shows the higher growth rate over the past several years versus the rest of industry, with a strong pipeline of growth opportunities ahead. Including our industry-leading basestocks business, over the last 10 years the lubricants value chain has delivered average annual earnings exceeding $1.2 billion.

In the fuels business, the focus is on ensuring our assets sit on the left side of the supply curve, delivering fuels to customers at industry-leading unit cost, which translates to resiliency through the cycles.

We are accomplishing this by continuing to shift the yield from our manufacturing facilities to the highest value products, distillates, lubricants, and chemicals, through advantaged conversion projects, and smaller debottlenecks, and optimizations. Profitability is enhanced with our tight integration, our catalyst technology capabilities, and global scale.

And despite challenging market conditions, we made sound progress in 2020. Our lubricants value chain made well over $1 billion, up versus 2019 and versus the 10-year average, demonstrating the resiliency of this business.

We remain on track to grow the net cash margin from our fuels manufacturing sites by an average of 30%, mainly driven by advantaged conversion and integration projects with 3 already online, and 4 in progress. The yield of high-quality products will increase, the overall refinery throughput will not.

Costs were down over $2 billion in 2020 due to reduced activity, deferrals, and structural reductions. Our downstream team is very focused on these structural reductions and has line-of-sight to delivering approximately $1.5 billion in annual savings in this category alone by 2023, leveraging our scale and integration to more efficiently support operations and sales activities.

And progress continues in our key growth markets of China, and Indonesia, and India, and Mexico, with $500 million in earnings from these countries expected by 2025.

Let’s now look at our Chemical business in the same fashion.

The core strategy of our Chemical business is growing technology-driven, higher value performance products. These have proven over the test of time to add significant value for our customers versus commodity chemical products.

They have been made possible by our consistent investment in catalyst technology that has yielded continued product innovation, underpinning the growth rate shown in the graph on the left.

And this product sales growth is supported by advantaged projects to increase manufacturing capacity to meet growing demand. It is this combination of product innovation and profitable capacity growth that provides our chemical business with sustained competitive advantage.

In 2020, Chemicals business earned $2 billion, and grew performance products sales year-on-year despite a shrinking global GDP, a testament to both the resiliency of these products and the commitment of our people. A strong pipeline of both new products and advantaged projects underpins the further 60% growth by 2027 shown on the graph.

Alongside this growth is a re-doubled focus on ensuring the chemical business is also an efficiency leader. Costs were down significantly in 2020, and despite higher sales volumes this year, ongoing structural efficiencies will support cost reduction of $1 billion versus 2019 levels.

And finally, the dynamic environment of 2020 offered optimization opportunities for our integrated sites. For example, within our Baton Rouge complex, the refinery was able to maintain a steady supply of propylene to feed the world’s largest isopropyl alcohol plant to meet a growing demand for this key ingredient in hand sanitizer.

And with depressed jet fuel demand, our Singapore integrated facility was able to send this stream to our feed-flexible steam crackers, un-constraining the refinery and upgrading the distressed molecules.

Collectively, unique opportunities such as these enabled the chemical company to generate an additional $500 million of earnings. This resulted in a growing advantage over competition in 2020, which I will show on the next slide.

Our chemical business is number 1 or number 2 in over 80% of the markets where we compete. Shown on the left are some of the most material of these markets, with polyethylene being the largest, accounting for about 30% of our sales over the past decade.

This product diversity is a real advantage, particularly in a year like 2020 when nearly 30% of our chemical earnings came from fluids and synthetics, with fluids benefiting from lower refining-sourced feed costs and both businesses benefiting from strong reliability and resilient demand.

This diversity, along with the optimization at our integrated facilities and cost reduction, were real differentiators in 2020 as shown in the middle graphic. Our earnings over the past decade were 80% higher than the average of the rest of industry, and in 2020 this advantage grew to nearly 200%.

And now our definition of “industry” in this comparison is well beyond the traditional IOC competitors as they do not have large chemical businesses. This has been a longstanding point of strategic divergence amongst the IOC’s, with ExxonMobil consistently defining the bookend of maximum chemical yield. The value of this strategy can be readily appreciated in today’s environment, and our 50-year commitment to it provides an important, material competitive advantage.

Not only does our chemical business generate more earnings, it does so with better capital efficiency. Our 17% average return on capital employed over the 2010 through ‘19 period was 6 points, or over 50%, higher than the average of the rest of the industry.

On the far right is the primary source of this competitive advantage, our portfolio of performance products. There is a rather large “innovation moat” around this business segment. For example, we have commercialized more than 250 new products since 2010, and are releasing a new metallocene polyethylene family of products this year.

This level of product innovation requires dedicated commitment, year after year. In 2020 we accomplished more than 100 major manufacturing product trials, worked on more than 3,000 new commercial leads, and collaborated in 1,600 product trials with our customers, all amidst a global pandemic.

Building on this process over and over again, with ever-improving product performance properties, generates the growth trajectory shown on the right hand chart. These products yield a higher value in the marketplace because they provide benefits to our customers.

This slide provides a handful of examples representing our high-value product portfolio across our chemical and downstream businesses. It highlights the benefits these products can bring to customers, supporting lower emissions and improved efficiencies, and priced based on the advantages they provide.

Touching on a few of these, polyethylene packaging that has lower lifecycle emissions versus alternatives, and performance polyethylene, like our Exceed™ XP, that is stronger, enabling production of thinner films. And, we’re developing the capability to produce certified circular polymers from plastic waste using our proprietary advanced recycling technology. Polypropylene used to lightweight vehicles for improved fuel economy or battery life. Synthetic lubricants and higher quality fuels that improve fuel economy. And finally, greases and lubricants for wind turbines where performance properties offer long drain intervals to help improve uptime.

Our focus on these higher value products is driving an evolution of our overall product mix.

The chart on the left shows how this change is playing out across our downstream and chemical businesses. The higher value products I just described are shown in green bars.

The product families in this chart are shown in order of increasing value from bottom to top. The bars show the percent change in sales volumes between 2017 and 2027, largely due to major investments but also due to base optimization and portfolio changes.

Starting at the bottom of the chart, we are shifting the product yield across our refined products. Destruction of lower value fuel oil on the very bottom row has been a strong focus for our downstream investment, and is enabled by proprietary technology.

Converting fuel oil to Group II lube basestocks is a value addition of over $50 a barrel and has never been done. The Singapore Resid Upgrade project will use innovative technology, supported by 35 patents, and 13 different catalysts, including 4 that are proprietary, to accomplish this impressive world's first application. This project builds on the proprietary technology in our Rotterdam Advanced Hydrocracker that is operating well and contributed almost one third of the basestocks earnings in 2020.

At the top of the chart are the performance chemical products, which have significantly higher margin even versus commodity chemicals that themselves have a higher market value than the refinery products.

This graphic is a nice encapsulation of our strategy. It is enabled by an advantaged, profitable project portfolio.

Shown on the left are the major downstream and chemical projects currently in varying stages of execution.

Due to the challenging market conditions of 2020, many of these were paused 1 to 3 years to preserve cash flow. Our unique global projects organization accomplished this difficult task without losing capital efficiency. It is a strong proof point of the value, in a capital-intensive industry, of having one global organization managing execution for all projects across all business lines.

And as an aside, this is the organization that would be executing the CCS projects that Darren spoke of earlier. We are well-equipped to take on these projects that will often span downstream and upstream and will comprise both greenfield and brownfield scopes of work.

This project portfolio delivers a 30% return at 10-year average margins, and generates significant annual earnings even in a low margin environment.

I won't go through all the projects but just a few comments.

The Wink-to-Webster portion of the Permian Crude Venture is operational. Forward spend is on optimizing the connections to our Wink terminal and gulf coast refineries. ExxonMobil will be operating this pipeline system.

The Corpus Christi steam cracker complex project is going exceedingly well. Our team has been managing complex project execution involving supply chains spread across the world during a global pandemic, and is on track to startup in fourth quarter of this year, well ahead of schedule.

North American ethane is still very advantaged in the manufacturing of polyethylene to supply global markets, and I spoke earlier about the additional advantage of our performance products that will be produced from this facility.

In fact, the 3 other chemical projects shown are also directly increasing performance products manufacturing capacity and benefit from the uplift versus commodity products, and our China project captures the advantage of being located in the world's largest growth market.

Once these projects are all up and running at full capacity, they will contribute significant earnings and cash flow. As shown on the right, over $2 billion of annual earnings at 10-year low margins, and over $4 billion at the 10-year average.

Let me now just wrap up with a few reminders on how we are delivering our strategic priorities.

We have industry-leading positions in our world-class downstream and chemicals businesses, which enabled strong earnings performance in our lubricants and chemicals businesses in 2020 that together contributed over $3 billion in earnings.

Across these organizations we are focused on reducing costs, with $2.5 billion in annual efficiencies versus 2019 to be delivered by 2023.

Earnings growth is driven by shifting the mix towards higher-value products, enabled by our advantaged project portfolio that generates a 30% return.

With that I will hand it over to Andy to discuss the Corporate financial plan.

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

Thank you Jack, and good morning to all.

As Darren mentioned, prior to 2020 we were already on a path of recapitalizing the business with more profitable, more competitive assets.

As a result of the dramatic downturn last year, we refined those plans and accelerated our cost-reduction efforts, all while preserving value to get to the stronger position we are in today.

We responded decisively to the unprecedented market events while continuing to manage our businesses to grow shareholder value for the longer-term. Let me begin by reaffirming our capital allocation philosophy.

In a depletion business, you must continue to invest in advantaged projects to sustain strong cash flow generation in the future. Given the capital-intensive, cyclical nature of our industry, it is also critically important to maintain a strong balance sheet. These enable us to sustain the dividend through the commodity price cycle. We have provided a strong, reliable dividend for over 70 years. This remains a core priority.

The work we did during 2020 has generated significant structural cost reductions. We have plans to double these permanent savings over the next few years. At the same time, we are advancing our flexible portfolio of high-return, price-resilient investments.

We covered a number of these actions during the fourth-quarter conference call, but the points are worth re-emphasizing this morning. I'll provide more color on the work to enhance financial performance by further improving our cost structure and progressing our disciplined and flexible capital program.

Let's start with our operating costs. Last year, we responded decisively to the environment, announcing plans to reduce cash operating expenses by 15% compared with the prior year. As we shared with you last month, we exceeded those reduction targets, delivering $8 billion in savings from 2019 to 2020.

Our cash operating expenses are shown here. The figures exclude production taxes and energy expenses, which are largely driven by commodity prices.

Of the $5 billion in non-energy related savings generated from 2019 to 2020, $3 billion was structural, meaning the savings will lower our annual Opex by $3 billion on a repeatable basis. These were driven by operational efficiencies and reduced overhead. Importantly, these structural reductions are independent of the price environment.

The remaining reductions are temporary, driven by lower volume-related activity, deferrals and the reduced costs of materials and services seen in the market environment. The return of activity and market-driven costs will be a function of the price environment.

I'll expand further on the $3 billion of structural cost reductions we generated in 2020.

Our ability to rapidly adjust last year can be traced back to the reorganization of our Upstream and Downstream businesses from functional companies to businesses optimized along value chains. This work was completed in 2019. I'd like to make sure that the term "value chains" is well understood, think of this as re-organizing each business around a true end-to-end P&L.

These reorganizations further enhance accountability and focus on profitability, require fewer people, and provide a clear visibility across all activities generating the P&L. As we saw the impacts of the pandemic starting to materialize last year, this enabled us to accelerate expected efficiency gains, reduce overhead, and more effectively prioritize work across the entire breadth of the business.

Key to delivering these reductions was the ability to effectively leverage ExxonMobil's scale, integration and technology advantages. Specifically, we delivered about $1 billion in savings in 2020 through work efficiency changes executed consistently, and deeply, across our global organizations.

Some examples of actions taken to reduce costs include, increased work selectivity based on benchmarking data, reducing logistics charges through comprehensive scheduling optimization, and aggressive consolidation of contracts and vendors across our global operations.

Successful application of technology, including digital, contributed about $1 billion in 2020. Examples include, the use of advanced application tools to optimize the use of catalyst and chemicals. We further leveraged enhanced-monitoring analytics across our operations and drilling activities. This includes application to all major machinery to detect abnormal conditions and optimize proactive maintenance. The past year also saw accelerated widespread use of automatic inspection devices and drones across our global operations, and the comprehensive use of technology for business meetings.

The reorganizations also laid the foundation for substantial workforce savings. Changes included reducing employee and contractor headcount through consolidation and centralization. Workforce changes that began in 2019 delivered about $0.5 billion in savings in 2020.

Finally, divestments contributed about $0.5 billion in savings compared to 2019.

Turning our attention to the additional $3 billion in annual structural savings through the year 2023. While we expect to continue our divestment program, we are not counting on any additional contributions from divestments to deliver the additional $3 billion in structural reductions through 2023. Rather, the additional savings will build on our 2020 work.

The largest contributor is workforce efficiencies. We expect to deliver $2 billion of additional structural savings from workforce reductions and efficiencies that we have already announced and are underway.

The remaining $1 billion in savings will come from additional efficiencies driven by our value chain reorganizations and focused technology applications. We expect even further reductions as we leverage additional synergies that are created across the more consistently organized businesses.

Beyond the significant Opex reductions we achieved in 2020, we also reduced Capex by more than the 30% target we announced last year. As you recall, following our 2020 Investor Day, we responded quickly to significantly reduce capital spending in line with market conditions and preserve our dividend. As we enter 2021, our capital plan is at a historic low level, down by around 20% from our 2020 program.

Looking out to 2025, our capital plan reflects three key themes: value, flexibility, and discipline.

Starting with value, created by advancing our highest-return projects to deliver better earnings power and cash flow generation, which I will discuss in more detail in a few slides.

Flexibility, to respond to a dynamic market. We demonstrated the flexibility of our capital program in 2020 and have developed our forward plans with this as a priority.

And discipline, to focus investment spend, execute projects efficiently, and make adjustments to our capital program in line with anticipated cash flows to support our strong dividend and strengthen the balance sheet.

Our plans are built on a price basis that is consistent with third-party outlooks and advance our highest-return investments as Neil and Jack detailed during their portions of the discussion this morning. They are designed to be robust to a wide range of price scenarios, and as we've demonstrated, provide flexibility to respond to lower price environments.

As you can see in the chart, our planned 2021 Capex range is $16 to $19 billion, and $20 to $25 billion per year between 2022 and 2025. In each year, we have flexibility to spend below our planned range should market conditions warrant it. Our flexible capital includes a level of short cycle unconventional spend and early-stage investments in longer-term opportunities that can be deferred if needed. The flexible Capex also includes the planned resumption of projects that were previously suspended. If necessary, these projects can be further deferred, providing additional flexibility.

The less flexible spend is generally longer cycle, more firmly committed, or includes projects very near completion. It could also be reduced, but at a higher cost.

While any reduction below our current projected spending levels has the potential to impact longer-tem value, we have significant flexibility to adjust if challenging market conditions exist.

This slide quantifies our near-term capital flexibility.

The bar on the left, shows our sources, available cash from operations for our 2021 plan at a range of Brent oil prices and the lowest annual Refining and Chemical margins experienced over the ten years from 2010 to 2019. As you move right, you see our uses of cash, the current dividend, and our 2021 Capex range from the previous page. As you can see, the breakeven Brent price needed to cover the dividend and invest at the low end of our flexible Capex range is about $45 per barrel.

The Brent price required to fund the low end of our guidance is about $50 a barrel. And as mentioned in the fourth quarter earnings call, we expect our 2021 Capex to be closer to the low end of our guided range.

Even with the Downstream and Chemical margins at the bottom of the 10-year historical range, we expect to be able to fund our highest-return investments in Guyana, the Permian, and the Chemicals business, and generate enough cash flow to cover both the dividend and begin paying down debt at Brent prices just above $50 a barrel.

Beyond 2021, the strength of our portfolio becomes even more apparent as our plans improve cash generation capacity through investment in our advantaged projects and further structural reductions in cash Opex. We also expect Downstream and Chemical margins to improve from the current lows and grow closer to the long-term average, and there's substantially more flexibility in our capital spend. Looking ahead, we expect to have the capital flexibility and generate sufficient cash flow in any given year to maintain the dividend at around $40 Brent. And just to reiterate the message from our fourth-quarter earnings call, by 2025, our plans enable us to maintain the dividend at $35 Brent.

As we talk today, actual prices and margins in total, are above our plan, enabling us to progress our investments, pay the dividend, and begin paying down debt. At the same time, we know the environment can rapidly change. We will continue to monitor and adjust our capital spend accordingly with priority on generating cash flow to protect the dividend and preserve the balance sheet.

I want to re-emphasize this point, if prices remain at the levels we see today, or move higher, the additional cash will be used to de-leverage, not to increase capital spend.

If, in the future, we face a year where Brent prices remain below $50 a barrel on a sustained basis, we would reduce investments to levels more consistent with our 2021 program.

We believe our plans strike the right balance between maintaining a strong dividend, reducing debt to fortify the balance sheet, and continuing to invest in high return, cash accretive projects, even in uncertain or volatile market conditions.

This last point is critical, particularly in a business that requires continuous reinvestment to overcome the natural decline of our upstream resources. The next chart provides a good perspective of this.

As I've mentioned a few times this morning, our investment strategy is focused on growing earnings and cash flow across a wide range of market environments. We are investing in advantaged projects with some of the industry's lowest cost of supply. Contributions from new investments are critical. As Darren and Neil discussed this morning, in the Upstream, continuous reinvestment is needed.

This graphic helps to illustrate the importance of today's investments on future cash flows. In the 2021 bar, we show our projected available cash from operations, consistent with the previous slide, the base portion of the bar in gray shows available cash generated from projects started up prior to 2021. The small portion of the bar in blue represents the available cash from projects starting up in 2021. Moving to 2025, we show the contribution from the projected base in grey, which reflects the natural decline I just mentioned. On top of that, we show the contribution to available cash from operations at $50 real Brent from projects started up over our investment horizon. You can see that these new project start-ups represent roughly 40% of the operating cash flow in 2025. Finally, in light blue, we add the additional cash flow that we would expect to generate by moving from 10-year low to average Downstream and Chemical margins.

This makes a critical point. There is a significant long-term cost for excessive short-term investment reductions. When the industry does it collectively, the market pays with potential supply shortages, and as a result, much higher commodity prices.

Striking the right balance, responding to short-term constraints with an eye on the mid- to long-term generates the greatest value.

With that, let’s move to the next slide.

We just showed available cash from operations for our 2021 plan at different Brent prices and I highlighted the growth in cash flow we expect to deliver through 2025 by investing in our portfolio of advantaged projects.

This chart illustrates the significant cumulative planned cash generation of the business from 2021 to 2025. Consistent with the prior slide showing cash sources and uses in 2021, the bar on the left shows available cash from operations. We vary the real Brent price and assume 10-year low Downstream and Chemical margins in 2021 that return to the 10-year average in 2022 through 2025.

At $50 real Brent, we expect available cash of approximately $200 billion between 2021 and 2025. Available cash from operations also includes modest impacts from our divestment program, which do not materially affect the cash balances.

As you move to the right, you can see the uses of cash. They include maintaining our strong dividend and funding the capital program we’ve discussed today. The Capex bar is shown to the top of our guided Capex range, about $120 billion in total over the period. To generate the approximately $200 billion of available cash shown on the left requires a Capex plan at about the midpoint of the shaded range. With these plans, we expect to generate excess available cash of about $15 billion at $50 real Brent prices. At $55 real Brent, excess cash generation grows to $30 billion.

Finally, I’ll note that while the Brent Prices shown on this chart are real, as we improve our cash generation capacity over time, our plans enable us to cover the dividend, fund our Capex program, and begin to generate excess cash to reduce debt even at nominal Brent prices of $50 a barrel in each year between 2021 and 2025.

This demonstrates our ability to leverage our flexible Capex program to generate significant excess available cash over the next 5 years, even in low price environments, while retaining substantial upside potential. Cumulative available cash increases by an additional $3 billion for every dollar increase in Brent price over the period. We would generate an additional $15 billion with a return to the high end of 10-year Downstream and Chemical margins from 2022-2025.

Let’s turn to the final slide and look at how our plans enhance our earnings over the same period.

Starting at the left, 2021 earnings at 10-year low Downstream and Chemical margins and $50 Brent are about $7 billion. Moving to the right, an improvement in Downstream and Chemical margins to the 10-year average improves earnings to a little less than $11 billion.

Delivering on further structural Opex savings drive additional earnings across the period of about 2 billion dollars per year. This after-tax impact is consistent with the structural reductions I discussed earlier.

Finally, improvements to our portfolio add almost 6 billion dollars of annual incremental earnings over the period. This includes enhancements from project investments across each of our businesses, which more than offset the decline in our base Upstream assets, and is partially aided by some Upstream price escalation over the period.

At $50 real Brent prices and consistent Downstream and Chemical margins, earnings nearly double from 2021 to 2025.

The final shading illustrates the additional $8 billion of earnings potential with $55 real Brent and 10-year high Downstream and Chemical margins.

This should provide a deeper understanding of our strategy and plans for 2021 and beyond, and how these benefit our financial performance through 2025. I look forward to taking your questions shortly. With that, I will turn it back over to Darren.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Thank you Andy.

I hope, through our discussion this morning, we've given you a better understanding of our strategy and plans, how we intend to manage the uncertainties of the future, and grow shareholder value throughout the transition to a lower carbon economy.

Let me close with a few summary points.

We are absolutely focused on, and committed to, growing shareholder value.

Our current investment portfolio offers the best set of opportunities we've had in over 20 years, generating returns in excess of 30%.

Our capital plans through 2025 generate earnings and cash flow to sustain and grow the dividend, reduce debt and fund future projects that will continue to grow earnings and cash flow.

We're maintaining significant flexibility to adjust to market conditions, and continuing to leverage our re-organizations to significantly reduce costs, with structural savings of more than $6 billion a year by the end of 2023.

We are focused on delivering industry-leading safety, reliability and environmental performance.

And, we remain committed to playing a leading role in greenhouse gas reductions, consistent with the goals of the Paris Agreement.

I am exceptionally proud of how our people delivered in each of these areas last year, despite the unprecedented challenges of the pandemic, and I'm extremely confident in what they will deliver this year and into the future. Thank you.

Stephen Littleton *– Vice President of Investor Relations and Corporate Secretary*

Thank you everyone. We will now begin a short break. Please be back in 10 minutes for a Q&A session with our Management Committee.

Stephen Littleton *– Vice President of Investor Relations and Corporate Secretary*

Welcome back everyone. We will now proceed with the Q&A session with Darren Woods, Andy Swiger, Neil Chapman and Jack Williams. We do ask that you mute your webcast and please be reminded that the Webcast will be slightly delayed. Operator, please open up the phone lines for questions.

Operator

Thank you, Stephen. The question-and-answer session will be conducted electronically. If you'd like to ask a question, please do so by pressing the "star" key, followed by the digit "1." We request that you limit your questions to one initial, with one follow-up, so that we are able to maximize today's engagement and take as many questions as possible. Please mute the webcast to prevent any echo and lift your handset before asking your question. Once again, please press "star 1" on your touch-tone telephone to ask a question. We'll take our first question from [Analyst 1].

Analyst 1

Yes, hi, good morning. Can you hear me okay?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

We can.

Analyst 1

Okay, great. Well, thanks for all the details today – much appreciated. My first question is going to be for Andy on some of the financial disclosures. Andy, you highlighted $30 billion of cumulative post-dividend free cash flow at a $55 Brent real. And I know you probably don't want to get into specific guidance on asset sales, but you have typically done about $3 billion a year on asset sales. So that could be another $15 billion potentially. So if I were to take that free cash flow and asset sale potential, how do you think about how much excess cash needs to go to the balance sheet at this stage given the starting point?

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

Thanks, [Analyst 1]. First of all, let me just clarify on the divestment program. A couple of years ago, we talked about a $15 billion program over three years. We're still executing that program right now with the pandemic and market conditions, we are on track, but it's going to take a little bit longer. And that's the program that I mentioned that's in the figures here. It's a relatively modest contribution over that time period when you think about the proceeds, offset by the cash flow loss there. So that $30 billion I talked about has just a very small contribution from divestments in it.

Analyst 1

Okay, great. And then again, how do you think about how much you want to put towards the balance sheet at this stage? Do you feel like 100% of post-dividend cash flow should be going to the balance sheet?

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

Yeah. We've talked about our priorities, obviously, investing in the business then strengthening the balance sheet and then returning cash to shareholders. The investment program I detailed in a lot of different ways. I think you're fairly clear on that. If you think about debt reduction, the way we think about it is we've set ourselves a limit in this past year, based on some metrics associated with debt to capital, other different type of metrics you'd use and so forth. We said to ourselves, we're not going to go above that limit. We're going to start reducing that debt to build, balance sheet capacity for the future – for the next cycle and so forth. We talk about taking—if you think about a figure, call it, a Moody's adjusted figure of debt to capital, we got to about 29%. We're aiming to take that back down into the low-to-mid-20s. So you would be talking about moving something like $10 to $20 billion of debt at either end of that off the balance sheet in that time period. And the remainder would be available for distribution to the shareholders.

Analyst 1

Okay, great. My follow-up question would just be on the emissions disclosures. Appreciate all the additional color here today. And I recognize perhaps not wanting to make any significant commitments post-2025, looking out to 2050, but I am curious about what you think you can achieve on that front, Darren? And in particular, how do you think about the amount of spending that might be required to continue to drive emission reductions post-2025 relative to the commitments you've made recently? Thank you.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yeah, thanks, [Analyst 1]. That's a good question. I think—and tried to make some of the points as part of the presentation that we put together. And I would say the answer depends on how these different market forces come together to allow those opportunities to manifest themselves. So just kind of highlight some of the things that we're looking at, and I talked about as part of my prepared remarks.

First of all, what I'd say is I've been very encouraged by the dialogue that is happening in the space and the growing recognition of the need to address emissions across the broad array of challenges, particularly in the industrial and in the power generation. And we see carbon capture and storage as being a really important component of that. And that's beginning to be recognized by governments around the world, and that was the point I made with the slide that I showed with respect to government policy.

That's going to play a critical role because that's going to open the doors up for the investment. Having an explicit, transparent price for carbon that incentivizes investments are going to be really important. So I think a big part of the answer to your question is how governments around the world come together and start to put in place the right kind of policies and frameworks to support that.

I'd say also very important – and the point we tried to make with respect to the investment dollars looking for opportunities to reduce carbon – that's going to play a big role. And the point that I tried to make there was, while there's been a significant growth with climate tech funds, a lot of it's been focused on mobility and transportation, which is important, but doesn't represent the majority of the reductions that society is going to have to achieve. And so I think as those funds look for opportunities, as government policy comes together, that's going to open the doors up for investment.

And as I said, we think we've got an opportunity to contribute in that space with our facilities, with our organizational capabilities, with our project organization. So those two things will set the pace. And the third element, which is just as important, is as companies and governments around the world look to decarbonize, particularly these difficult-to-decarbonize sectors, a market will develop for carbon offsets. I think one is needed if society is going to reduce emissions at the lowest cost.

And therefore, I think as that comes into play, there's a lot of forces that are going to make this opportunity pretty significant. And the question, I think, is how long does it take for those forces to come together? There's certainly a lot of momentum today, a lot of people talking about that. And we felt like establishing our Low Carbon Solutions business now, at the early stages of those forces converging, gives us this opportunity to start to influence that and hopefully participate, in a kind of full throated way, and we'll see how that goes. I think we're pretty optimistic.

Analyst 1

Thanks for taking my questions.

Operator

Your next question comes from the line of [Analyst 2].

Analyst 2

Yeah, thank you, and good morning, enjoyed the presentation. I guess a couple of questions, maybe a little bit, on the layout of the 2-degree C program and then how that fits in some of your Capex decisions. Specifically, if we're looking at oil and gas declining as much as that scenario presents, why not something more about dispositions other than letting North American natural gas decline over the next few years? And how would you see the downstream performing in that environment?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

So I think what we tried to show on the depletion chart is one of the big challenges, obviously, is producing oil and gas is a depletion curve. And even those 2-degree scenarios – and we showed an average in the chart, and we also showed a range in that chart – that even in those scenarios, without investment, we're not going to – the industry is not going to – have the supply necessary to meet the demand even in a 2-degree scenario. And then it depends on how quickly we get on that 2-degree scenario and where you move along that range. And so I think there's a lot of uncertainty out there today.

And one of the points I tried to make in the presentation is, recognizing the difficulty associated with getting on the 2-degree scenario, that a lot of those, that progress, will be more back-end loaded. So as we go through the near-term, there's going to be continuing demand for existing energy systems.

With the depletion curve, we've got a challenge, and the industry has a challenge, to make sure that we're investing at the rate to meet the existing demand as society works to transition to a lower 2-degree C. And so we think with that depletion curve and the time that we'll take to start this transition and start to materially move down that 2-degree curve that there's going to be a need for continued investments.

And that's what our plans support. Now I will say that as you go forward, we're going to see some of that shift, and we'll see demand move off as we make progress in this space. And so one of the underlying fundamentals to our strategy is making sure the investments that we're making are on the very far left-hand side of the cost-of-supply curve, so that irrespective of where that demand ends up and where that depletion curve takes us, when that demand and supply curve cross, the marginal barrel required to meet that demand – that we're a lower cost supplier versus that barrel, and so there's a margin for us.

And so that's really critical with respect to how we're thinking about the investments we're making across all of our businesses is to make sure that we are competitively positioned from a cost-of-supply standpoint so we'll have a return. And the other barrels that get pushed out of the market will be in to compete, and that's how we're focused on it.

And we think given our experience in this space and the progress that we've tried to demonstrate in this presentation as we reduce our own emissions, that for those barrels supplied the world will want ExxonMobil to supply those, given the efficiencies that we can bring to bear in the lower intensity of those operations. We think that's going to be absolutely critical as we work to make this transition.

And then with respect to the other points of your question around the refining and the chemical business, you saw on the chart where we tried to talk about total accessible markets that those businesses continue to be big parts of the equation. And therefore, we think it fits very well with the work that we're doing today. And the charts that Jack showed actually showed us upgrading the barrels

in those refineries to where we see the demand, consistent with what the IPCC charts are showing. And so we think we're going to position those businesses to be more competitive. And of course, chemical products will continue to play a really important role not only supporting modern life, but in societies around the world, reducing emissions. I don't know, Jack, if you've got anything to add to that.

Jack Williams *– Senior Vice President*

Yes, Darren, in fact, on chemicals, for every ton of GHG emitted producing chemicals, you save two with the products that we produce. So it's some of those benefits that I showed earlier around how these products help society reduce greenhouse gas emissions. On refining, the only thing I'd add is that we've been very focused on energy efficiency in our refining business. It's probably the most important way we can reduce greenhouse gas emissions in refining. And Solomon has a really good benchmark, and they've been doing it for quite a while on that, and we've consistently been the leader.

That's just year after year continuing to work. Lots of cogen projects we're putting in place. We're now purchasing renewable power that Darren talked about earlier. So a lot of blocking and tackling to get us down that path, and as Darren said, trying to make sure we're on the left-hand side of the supply curve.

Then the only other thing I'd add is that we are – Darren showed in that chart, the low-emissions fuel venture that has been established. And we are looking at, I would say, most of our efforts right now are in the pilot stage, but we are looking very seriously at low-emissions fuels and what role we can play with our kit, with our technology, in that space.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

The other thing I would add, [Analyst 2], to that, you may have seen a press release that we put out. We're looking at using some of our refinery facilities to recycle plastic, with the objective of advancing a circular economy. And so some trials we've been doing at bringing in recycled plastic and reprocessing it and refineries play a role with that. So the integration that we have between our chemical and refining businesses, we think, are going to give us an advantage in that space as well.

Analyst 2

That's great, thanks. Very thorough. A follow-up question, I think for you, Andy. The $6 billion of cost efficiencies by '23. I mean it's a great number. It's a big number. I know a company like yours is going to under-promise and over-deliver. As we look to a number like that and we think out to '25, what would be sort of a reach goal or maybe I should say, attainable, but not necessarily something you want to put on paper right here that we should be thinking about. Maybe the potential opportunities for further cost reductions, right? We hear a lot about digitization and other sorts of efficiencies. I was just curious what else might be something we should think about as we look a few more years down the timeline?

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

That's a great question, and it's one we're working very hard internally right now, as you might imagine, having done what we've done and having set the path to 2023. We've already chartered the group that's looking beyond that.

And looking beyond that is about really thinking how to take full advantage of these reorganizations, go across the businesses with common capabilities, take advantage of the scale and the integration benefits that ExxonMobil has, and see what we can develop as a pathway to a huge amount of—or to a much larger amount of structural savings beyond that point, with the expectation that some of it will actually be brought to bear even before 2023. We're in the midst of doing that right now, it's fairly early stages. We're going to be working it into our plans this year. So I don't think any of us really want to get into a number at this point in time.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yes. And maybe, [Analyst 2], I'll just build a little bit on the point that Andy made to make sure that it's clear. If you think about the reorganizations that we did in 2018 and 2019. First time, really in the history of the company, that we've got each of our sectors organized along a consistent parameter in terms of our value chains.

And so if you think about the significance of that for our Chemical business, for our Downstream business, and for our Upstream business, all now organized along value chains – it gives us the benefit associated with a direct line of sight to P&L and how you're competitive and how you position yourself competitively, particularly in a market that we think is going to go long given the transition. That's critically important.

But I think what's even more important, or in addition, important – is the fact that these—we now can see across these businesses, the opportunity for additional synergies because we can align similar processes that deliver value across and really leverage the scale that we have for the corporation, which would be the first time we've been able to do that. And so this is the team that Andy has talked about. We think there's huge potential in that. But it's early in that process. We've got a clear line of sight. We've got built into our plan, the $6 billion. And I would anticipate as we move into 2023, as we move through this time frame, you'll hear more about those opportunities as they begin to crystallize. But I'm confident that there's more opportunity here. And that was part of the restructuring – the basis behind the restructuring.

Analyst 2

Thank you.

Operator

Your next question will be from [Analyst 3].

Analyst 3

Hi, good morning everyone – thanks for taking our questions. My first question is on the balance sheet. Going back to slide 54, where you talk about the capital allocation priorities for ‘21 to ‘25. Can you talk about your thought process regarding targeting Capex and dividend coverage on – I guess if I’m reading the graph right, it looks about around $45 Brent – versus targeting debt reduction at the same commodity price. And I know a lot of it comes down to your portfolio of opportunities, which is vast. But I guess there’s a number of projects, including the Permian and Guyana, which are clearly world-class, but for the remainder of the Capex that’s directed towards longer-dated projects can you talk about how you chose to ((inaudible)) this level of spending versus the near-term debt reduction that we think would accrete to the equity holders, improve your flexibility and dividend confidence through future cycles, which tend to be coming quicker and more turbulent these days. Thank you.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Well, maybe I’ll start and hand it over to Andy. It was a little difficult to hear the entire question, [Analyst 3], so if I don’t—if we don’t quite hit it then maybe we can repeat it. But I think the focus is around—as we’re looking at the business in the commodity markets and that changes, what’s our priority around managing that cash flow.

And what I would say is a lot of the work that we did in 2020 was pacing the investment opportunities, given the attractiveness of the investments that we’ve got in the portfolio. And I think, as Jack mentioned, a great credit to our single Global Projects organization that would—that allowed us to pull back on those projects, pause them in such a way that we preserved the value proposition there. That has given us a lot of flexibility to then think about at what pace do we want to start those back up. And we built a plan based on a fairly conservative view of the future.

And that’s what we’ve laid out in the Capex plan. And that basically allows us to progress those investments on that pace, pay the dividend, pay down debt, and if we see upside to that, as Andy’s point was, that’s going to go back to deleveraging the balance sheet and rebuilding the strength of that balance sheet.

I just want to make the comment. If you think about the three priorities that we have, one, obviously, for the long-term, medium- to long-term, investing in advantaged assets that will underpin the foundation of cash flow and earnings growth over time is absolutely critical. And so the focus you’ve seen is around investing in those advantaged projects that are going to end up underpinning growth. And you’ve seen the—from the charts that Andy showed, the contribution that makes in 2025 with respect to cash flow.

The work that we’re talking about now with Low Carbon Solutions allows us to extend the horizon as the momentum grows in that space and these market forces start to converge with the technology improvements that we’re seeing in government policy. We think there’ll be opportunities in that space. And that will kind of allow us to continue moving forward.

But in the meantime, we recognize that we're going to see ups and downs with the price cycle. The commodity cycle has not gone away. And so rebuilding the balance sheet that gives us that buffer to manage the business through these price cycles. As we did in 2020 where we drew heavily on that balance sheet is a really important priority and one that we feel very strongly we need to get that balance sheet built back up. Because we don't have the certainty around the future—we never have; and making sure that we've had that buffer, which historically we've relied on, used in 2020, we need to build that up, so we can rely on it going forward. I don't know if you've got more perspective on that, Andy.

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

No. I think you covered it well, Darren. I think the very important thing is the work done to identify the flexibility in terms of what the more flexible and less flexible is year-by-year, thinking ahead, how we will implement that around a wide variety of potential outcomes in terms of price and margin ranges and so forth. And also the recognition by focusing on those advantaged projects in the portfolio, changing that mix every year, we continue to drive that breakeven price down, and those have more capacity to be rebuilding the balance sheet when we're above that breakeven price. So it's a very well thought-out plan. I think we've tried to show you where those lines are in the early years, flexible, non-flexible and so forth. But that goes on every year. And it gives us more and more cumulative flexibility as time goes on.

Analyst 3

Okay. Sorry about the sound quality. Hopefully, you can hear me better now for the second question. The second question is on the production outlook. So on slide 38, where you show the 2025 production outlook, you mentioned that you have the flexibility depending on market conditions to go up or down. And under what market conditions would you be willing to flex up? And can you just confirm that that would be within the $20 to $25 billion medium-term Capex budget?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yes. I'll answer that, and then I'll hand it to Neil to provide more color commentary. And so the flexibility that we responded to that we're showing in that chart is basically the flexibility to come down off of our base plan. Again, going back to the initial question that you asked in the comment is the extra revenue that we've got coming in is going to go into deleveraging the balance sheet. And so that flexibility is really talking about the flexibility we have if market conditions erode. Doesn't look like that for the time being, but that's the flexibility that we were referring to in that chart. Neil, do you want to add any more to that?

***Neil Chapman** – Senior Vice President*

No, I think you've really captured that, Darren. I mean, the point is, [Analyst 3], here is we do have flexibility, and we demonstrated, of course, that last year when we changed our Capex so quickly and pull down. Obviously, the short-cycle Permian gives us most of the flexibility there. But this plan we have here, just a couple of points of context on this. In 2025, what I said was our volumes will be roughly flat versus where they are today. But that includes taking about 150,000 oil equivalent barrels of dry gas out of the portfolio. And we also have an assumption of about 250,000 barrels a day from divestments coming out of that. So the 2025 number, which is flat, includes both those—the dry gas and the divestments – which is about 400,000 barrels in total.

***Darren Woods** – Chairman of the Board and Chief Executive Officer*

The focus has really been around highgrading the portfolio to make sure that the production we have generates earnings and cash flow. And that's been the focus in what you see in that chart. Thanks, [Analyst 3].

Analyst 3

Thanks, gentlemen.

Operator

Our next question comes from [Analyst 4].

Analyst 4

Thank you, gentlemen, I appreciate you taking my questions. You may have just answered part of it, actually. So I just got two hopefully quick ones. I'll give you a heads up you might need a calculator for the second one. But so my first question is on slide 39. I'm just wondering what you're assuming in there for the net impact of disposals. I know Andy talked about it wouldn't change the cash flow ((inaudible)) materially, but volumetrically, I'm just wondering if you could quantify what you've assumed by '25 and maybe the mix also, which is the bit I think you might already answered in terms of gas decline.

***Neil Chapman** – Senior Vice President*

Maybe I'll start there Darren, if that's okay. I mean, [Analyst 4], what we're talking about here is on the chart what we're trying to represent is for roughly the same volumes, we will have about a 20 percent increase in operating cash flow. That's the metric we're talking about. In terms of divestments, I would say order of magnitude, the impact of those divestments by 2025 would take about $2 billion of operating cash flow out. And so this number we show on the chart here is net of that.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

In the volumes.

Analyst 4

That's what I was looking for, thank you. ((inaudible)).

Neil Chapman *– Senior Vice President*

Yes. And sorry, Darren was just making the point. So it's about $2 billion of operating cash flow, taking about 250,000 barrels a day of production from those divestments.

Analyst 4

Okay. That's actually very helpful, thank you. So the question I have on maths is—and you've got to forgive me for this Neil, it's on Guyana and it's on slide 26. I'm just going to walk you through very quickly. 75% cost recovery, 2% royalty, 50% of profit share that gets you 85.5% of every barrel for every dollar. And at 220,000 barrels a day, I calculate that at about $1.4 billion, up $55 Brent which would be $50 nominal, I guess, by 2025, net of ten dollar operating costs. So $1.4 billion per 220, basically. So how do you get $3.5 with 780,000 barrels a day of production. I'm closer to $5 billion. I'm just trying to understand where I'm wrong.

Neil Chapman *– Senior Vice President*

Yes. Yes. And, [Analyst 4], I read your report. So it's the same. It's within the range of scenarios. What we've done here is $3.5 billion, assumes a $50 flat real case versus the $55 you're talking about. And we talked a little bit about...

Analyst 4

So that's $55 nominal.

Neil Chapman *– Senior Vice President*

Yes. We talked about conservatism, I would say, on—when we talk about starting a project up, we want to be sure we will start it up in that period. And I think as you look at the start-ups going forward, I understand within the range of scenarios, your assessment was a little more aggressive on start-ups than I have in this plan here. But it's very easy to reconcile between this $3.5 billion, $4 billion and the $5 billion that you talk about. It's all around the price set that you take and your assumptions on when each of these facilities start-up. But I would tell you, [Analyst 4], for all of these projects, we have a range of scenarios. And the way you described it is well within our range of scenarios.

Analyst 4

Got it, well, either way it's a nice problem to have, Neil. Thanks again, I appreciate your having me on. Thank you.

Operator

The next question will be from [Analyst 5].

Analyst 5

Good morning everybody. Darren, ExxonMobil has had its strongest performance versus S&P 500 in two decades since you guys announced your new capital management program in November. So the plan has obviously been supported in the market. On this point, while many of us welcome the shorter, more concise deck today, prior information on the path to higher normalized returns on capital wasn't included this year, although you did have plenty of commentary on earnings and cash flow. So my question is whether or not emphasis on financial metrics is changing? And if so, why? Or am I reading too much into this? And then second, is it correct that Exxon's new 2025 normalized returns and earnings expectations are similar to last year, even using your more conservative price forecast from this year. Is that a good way to think about it?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Sure. Yes. No, I appreciate the question, [Analyst 5], and let me just start by reassuring you the focus on return on capital employed has not changed at all. As a capital-intensive business, we continue to believe that that is a good measure over time of demonstrating the fact that we are investing in advantaged assets that are delivering high returns.

And so you're right that we've tried to shorten the deck and focus the messaging. I would not read any more into it other than trying to make sure that we're concentrating on the areas where I think people have the most questions and want a better understanding of the approach that we're taking and the strategy. That I would tell you is what lies behind what we've shown here. It is not to suggest that, that is not a key focus area. And my expectation is it will continue to move in the direction that we've talked about because the projects, frankly, have only gotten more attractive. And therefore, I would expect to continue to deliver on that, if not more.

Your second point is spot on. The commitments that we made prior to coming into the COVID and having the response was doubling the earnings potential through 2025. The plan that we have in place despite some differences still delivers on doubling the earnings. And that's in part because of the progress that we're making in the Permian and the improvements that we've seen there, which we've talked about the potential being there.

I would tell you, I still believe there's more potential than we've got built into the plans just because it's hard to predict how quickly we'll evolve our thinking and improve our performance. But as Neil demonstrated, we made significant progress there. The other piece, which we didn't build explicitly into the plans, although we were executing plans to deliver them, was the efficiencies. And I think those efficiencies, as we've talked about, very significant here through 2023, and with respect to the question that [Analyst 2] asked, expect to see more of that.

So I think that will contribute even more. So my sense is, as we move forward, that we're going to—with lower capital we're going to deliver higher returns and more earnings and cash flow with the work that we've got underway. And I would tell you, again, a lot of that comes back to the organizational changes that we planned and executed through 2019, and I can't underemphasize—or overemphasize the importance of that change in terms of getting the organization focused on those key value levers.

Analyst 5

Okay, great, thanks a lot.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

You bet, [Analyst 5], thank you.

Operator

And next, we'll go to [Analyst 6].

Analyst 6

Good morning, guys, and thanks for all the commentary here. So the first question, Darren, is just on changes in the Board representation. Can you just talk about the capability you believe, the individuals that have been added to the Board bring to the table. And in general, as you think about the Board, what do you want to have represented in that group of people?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Sure. No, I appreciate the question, [Analyst 6]. So just step back, I'll maybe talk in broader context, then move in more specifically to the most recent announcements that we've made. So if you think about our business and the footprint that we have, we've historically looked for experience and capabilities in heavy manufacturing, given the footprint that we have; global operating experience, you think about the span of our business, the countries and the governments that we deal with all around the world, so

having Board members that have an appreciation and perspective on that is very critical. I've talked about here this morning and continues to be a fundamental underpinning of the business is the understanding of technology and science and the role that that plays in the evolution of not only our existing businesses, but as we've talked about today, the potential businesses to come. And so some background in that space has been critical. Obviously, a lot of CEOs have experiences in allocating capital across specific industries and capital-intensive industries.

But if you think about the changes that are evolving and what I talked about in my part of the presentation today, with this transition to lower carbon, I think more opportunities are going to open up, and that's going to be a function of what government policies come into place, how those markets develop and what kind of investments, what kind of money flows into this sector.

And so the idea of allocating capital into new industry opportunities, I think, was an area that we were focused on trying to develop and look for the kind of talent and capability of people who have experiences managing established businesses through transition, people who have experience allocating capital and finding value and opportunities.

So they can provide that perspective and oversight as we work through the challenges associated with continuing to deliver the energy that's needed today and the products that society depends on. As we look for ways to transition and deliver a future that meets those additional objectives of a lower emissions energy system.

I would also add that the changes that we've been making over the last six years, we brought in eight directors. About 2/3 of our Board has changed out. Those changes we've made have always reflected the discussions that I've been having with shareholders. I'll go back to the first director that I brought on, Susan Avery – that was in response to a lot of feedback that we were getting that they wanted to see someone that had a deep understanding of climate science on the Board, and Susan fulfilled that.

There was, in my discussions with some of our investors, they were looking for more representation from the financial community. We brought folks on to do that – Jay Hooley is a great example of that. A lot of feedback that they'd like to see us have more industry experience on the Board to help that discussion more broadly outside of the ExxonMobil management. That was a difficult bill to fill, quite frankly, given the challenges, the scope of our business, and finding somebody that has the perspective to bring to that. Wan Zul that we brought on, I think if you look at the business experience he has, how he's grown up in the industry – he's touched really all the areas that we do business today. So I think brings a great industry perspective, particularly relevant to the business that we're in today. And of course, his business was moving through this transition and investing in renewables. So he brings that perspective to the Board as well. So I think if you look at all that, that combination, we feel pretty good – the Board feels pretty good – that we have been evolving the Board consistent with the needs of the business and consistent with this evolution of our business and the economy and where we see things headed.

Analyst 6

Thanks Darren. And the follow-up is just your perspective on M&A. And I want to take it from a couple of different perspectives. If I think about in the last 25 years, one of the most successful deals across all of energy, certainly was the merger between Exxon and Mobil. Recognizing that there are market power challenges, do you see value on major consolidation? And is that something that could be executed? And then in general, as you think about your strategy, whether it's the traditional oil and gas business or as you transition more into new energy, do you believe that there is value that can be created through bolt-on M&A as well, leveraging your premium multiple?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yes. I think, [Analyst 6], there is an underlying potential for value in bolt-ons or other merger opportunities or acquisitions that allow you to capture some synergies between the companies involved. I think that, fundamentally, is what drives our thinking in this space. We—as we look at opportunities, and I've mentioned before in the past, we have a pretty consistent process for evaluating opportunities. We're looking for match-ups, acquisitions, mergers that would allow us to capture unique value. And oftentimes, there's good synergies. We've talked about some of those opportunities in the unconventional space. We continue to look for other independent companies that would have a synergy with what we're doing, build on that capability, and deliver more value than either entity could do on its own.

If you think about the future where we're going and the underlying technology associated with—that drives that, there could very well be an opportunity in that space where we could leverage some inherent technology with another company and leverage the technology and capabilities that we have within ExxonMobil, particularly around the engineering side and around the ability to scale and our projects to bring something together to create value.

So I would say, conceptually, those opportunities we believe are out there, and we will continue to evaluate those and see if we can't find one that allows us to—and positions us more effectively for competing in the future. If you think about where oil and gas demand may go in a 2-degree scenario, cost of supply is going to be absolutely critical. So finding opportunities to lower your cost, I think, will be a really important piece of the equation in the future of the industry and certainly one that we're very focused on.

Analyst 6

Thanks guys.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

You bet, good talking to you.

Operator

Next we'll go to [Analyst 7].

Analyst 7

Morning everybody, thanks for calling on me. So you've done a lot to talk about some downside flexibility in the program. And that's very helpful. But I wanted to ask you about upside flexibility because while we want to stay realistic, I think a lot of investors are with you that sometime before 2025, there's going to be a supply-driven cycle and people are going to start to think of that, what you might do, in that scenario, where you have significant surplus cash above the guidance points laid out here. And so I was hoping to connect this to sort of your energy transition plans and also go on the theme of capital discipline in the industry.

In a scenario where the business is generating cash flow significantly above what's laid out in the slide deck because of higher commodity prices on supply, how do you think the company would respond to that given what your priorities are. You said a portion of it would go towards the balance sheet. But do you think in that scenario you might use kind of supernormal earnings in oil and gas to accelerate low carbon efforts? Or would you deploy it to short-cycle oil production? Or is there some balance between those things? And if I could guide you in one direction, potentially just on the inorganic side within low carbon, do you think there's opportunities to bring in people or talent or companies that have pipelines within the space that could supplement yours. And that's it for me, thank you.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yes. Thanks, [Analyst 7]. I'll maybe just give a high level and then see if Andy has got anything to add to that. But—so I'll come back to the fundamental of our capital allocation priorities. Obviously, finding industry-advantaged investment opportunities that allow us to deliver above-average, above-industry average, I'll call it, industry-leading returns is a really important criteria as we look at investment opportunities. And I would tell you that criteria and focus that we have in our base business will also apply as we look at the transition and the opportunities as we move forward to make sure that we are carving out a unique position where we can bring the advantages that we think ExxonMobil has with respect to this space to bear and generate a return. That, I think, will help determine what level of spending and what opportunities manifest themselves.

It's difficult to, at this stage, guess where the Low Carbon Solutions business – where those opportunities will come and how big they'll be and when they'll manifest themselves because of some of those other forces that I talked about that have to come together. We're optimistic, but we also recognize there's a lot of hard work that needs to be done in this space. We're going to take a leading role in doing that work. And one of the reasons we formed the business when we did was to make sure that we had the right people in place to help facilitate that to make sure that we're on the front end of this. And taking a position to help lead it. And so that's, I would say, fundamental. And that's going to drive what we choose to do on the investment side.

I think the plan that we've got with our base business, we feel pretty good about. Neil's talked about the criteria around the unconventional space, depending on what we see. My expectation there is as the organization makes more and more improvements there, we'll be able to deliver higher volumes, higher profitability with less capital. That's my expectation. That's not necessarily built into the plans. We'll see how that manifests itself.

So there are a lot of forces kind of moving around in that space. Difficult to know exactly how they all kind of come together. I think Andy talked about bringing the balance sheet back to this mid- to low-20s position, I think that's really important because we want to make sure that we have —even if we're in the supercycle, we want to make sure that we have that capacity, recognizing that there will be these ups and downs. And then the third priority is returning cash to our shareholders. We've relied pretty heavily on the dividend in the past. There's opportunities in that space as well.

So I think you used the word balance, and I think that's the right way to characterize it. Obviously, those decisions will be in the context of the broader macro environment and where we see things heading. Obviously, difficult to predict, particularly at this point, having just come out of 2020 and the pandemic. So we're going to kind of keep an eye on all of that and make sure that the decisions we're making maximize the value to ExxonMobil and our shareholders in the best way possible and reflect what we think are the unique advantages that we can bring to this space. Andy, anything to add to that?

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

Just a couple of points, Darren. I mean balance is very important. I think just to add to, or build on what Darren said, certainly investing during a supercycle is something we are not going to be doing. Over-investing during a super cycle – it just never, never works out. On the Low Carbon side of the business, the space is evolving quite rapidly as everybody is seeing and all that. But the most important thing we bring to that space is not so much the capital or the money but the experience and the capabilities that we have to be able to take ideas that are funded or well-funded by others and figure out how to scale them.

And that's around decades of doing this. Bringing the capabilities we have in areas like material science, computational fluid dynamics, process engineering, surface chemistry, catalysts, that sort of stuff there for. That is the really valuable thing that we bring to the space there, and indeed, is the thing that is attracting a lot of ideas to us. The funding, as Darren said, the climate funding is going to be there. We will look at what we want to allocate to different ideas, but it's going to be balance in that space as well.

Operator

Next question will come from [Analyst 8].

Analyst 8

Thank you. Yeah—two questions. The first one, just you talked a lot about CCS, but skipped over generation, power generation. And obviously, some of your peers have got quite significantly involved. Although it looks to me that sort of fixed-bottom wind power generation is quickly commoditizing. But if you think about where floating is, it would seem to me on the face of it to have a lot of things that are very synergistic with your capabilities. I think you just spoke about the capabilities you had in fluids, but you're well respected for project management, building at scale, technology, which is clearly still needed there. So do you think over time that floating wind could be something that Exxon could move into?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yes. No, I think—thanks, [Analyst 8]. I think the point that you make around the fit with our capabilities, actually, as we've looked at that because we have spent quite a bit of time looking at both wind and solar opportunities in the power generation business, recognizing the power generation business is a different business for us, but looking for the synergies associated with the capabilities that we can bring to bear. And as we've looked at that, it's really the next evolution of some of those facilities and offshore wind was one that we've looked at because, as you say, there is the potential, a better fit with what we could bring uniquely.

To date, we haven't found the opportunities that are competitive in the portfolio and where we think we bring a very distinguished set of capabilities, but we continue to look for those opportunities. And I would say we haven't excluded, we haven't excluded any opportunities in this space, but the criteria that we're applying is consistent with: can we generate shareholder value consistent with what our shareholders expect, and do that by bringing a unique competitive advantage in that space. And that tends to be the criteria that we're evaluating. We continue to have folks bring ideas to us in that space, and we continue to evaluate and look at those. And we just have to see if any of those opportunities develop, will we see a good fit with what we can bring and therefore, generate a return that our shareholders would expect us to generate.

Analyst 8

Thank you.

Jack Williams *– Senior Vice President*

[Analyst 8], you mentioned the project management side of that. And I'd just like to just kind of emphasize that and agree with you on that capability and just make the observation that, that capability is getting more and more unique with us. And with our global projects organization, putting all our projects into one company, we're enhancing that capability. And whether it's offshore floating wind or CCS, these are going to be big projects, and we're uniquely capable to go do these things. So I think it's a good point.

Analyst 8

Yes. Thank you. And then second, just to revisit the financial model a second. If I think about Exxon essentially, the last 20 years, is the first sort of 10 or 12 years, you ran a very lightly geared balance sheet, and your payout ratio was relatively low. And your dividend yield was extremely low as a result. And one of the features of the company right now, I guess is the dividend. Although it's down from its

high, it's still at a relatively high yield. And the model you've been describing is in some way an attempt or an intention to move back to a structure that looks sort of a pre, certainly pre-2010, 2012 structure. So lower payout ratio, I think you mentioned $35 cash neutrality and lower gearing, although I think it's still higher than where you typically run before that. But is that a good way of thinking about where you would see the corporation exiting on the '24, '25 period, as you go through this process?

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

Well, we've spent a lot of time over the past few years thinking about what the optimum level of leverage is and looking at what we did. The past is not necessarily a good illustration of the future. We were with anything. We were way we out of kilter with where you really want to be in an efficient capital structure there. So I think as we've looked at it more, the range that I described earlier is more where we're going to want to have the balance sheet.

Commensurate with our capital-intensive cyclic industry and the capacity we need going forward, but also being efficient use of cash, debt and equity across the cycle there. The capital allocation priorities, as Darren and I both talked about haven't changed at all really, investing in the business, putting that balance sheet in a place that I described before, and then return cash to the shareholders. So that's not going to change at all. So I don't know that there's—it's different than the past. But I don't know the thinking has changed a lot other than to find the balance point on leverage, a bit different than it was 10 or 20, 15 years ago.

Analyst 8

Ok. Thank you.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

The only thing I'd add to that, [Analyst 8], as you think about the Low Carbon Solutions business and how that's evolving, that could end up taking on a very different structure than we've historically run the business based on what that opportunity looks like. And again, I would say it's awful early in the process, but we've come into that space, recognizing that we're in the early stages of that business evolving. And we have an open mind around how we take advantage of the capabilities that we can bring in this space and structure that business in a way that grows shareholder value. And so that will be one area that I think is it's kind of still in discussion and will evolve depending on how the market opportunities evolve.

Analyst 8

Ok. Interesting. Thank you.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

You bet. Thank you.

Operator

And your next question comes from [Analyst 9].

Analyst 9

Thank you very much. Darren, one of the clear themes today has been around capital flexibility to defend the balance sheet and the dividend. But I'm struggling a little bit to understand exactly how the Board thinks on what the right level of dividend is in the first place. Now, I understand there's a lot of history here and the dividend payout of any company is just going to extend the arbitrary numbers. But I just want to get a sense of what factors are input into the thinking of the Board when it decides how to remunerate shareholders.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

I think, [Analyst 9], it's kind of a function of the industry that we're in, recognizing it's a fairly mature industry and how we reward the success of the company with our shareholders. Historically, we've looked at the dividend as being in a reliable and growing dividend being a way to continue to have shareholders share in the success of the company. That's been a philosophy. And of course, depending on where you're at in the cycle, buybacks come into that in terms of returning cash.

And so those two mechanisms have been in play around letting our shareholders participate in the success of the company. I think, obviously, as we look and make those decisions going forward, we do that every quarter with the Board. And they look at what's the, kind of our position with respect to the rest of industry and more broadly. And so that is part of the discussion in terms of how we think about how competitive is the stock and the yield that we have versus our shareholders' other alternatives and making sure that we're an attractive investment is a big part of that discussion that the Board has.

Analyst 9

Okay. Thank you. And my follow-up, is just back to the sort of the question you had on shareholder activism. I think one of the themes here has been to promote more action on the energy transition. And it all sounds very sensible, but at the same time, are we in a situation here where the tail is wagging the dog to some extent. So that the question is, how do you—or do you have a good sense of how you think the majority of your shareholders want you to respond on the subject? And would you consider perhaps moving to hold an advisory vote on the issue, such as one of your European peers has recently decided to do?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

So I think the way I would characterize the discussion that we've had with our shareholders is they're very focused on making sure that the way we're thinking about the business, the strategy that we have in place is a strategy that's going to make this company successful, both in the near and medium-term and the long term. And that has been a very consistent theme across all the conversations I'm having with shareholders. And then, of course, what is it—what does that require in terms of that success across these different time horizons?

And clearly, one of them is around the transition and how that transition will manifest itself. And then how does ExxonMobil participate in that transition to make sure it continues to deliver shareholder value and is a successful company. That, I would say, is the kind of foundational discussions that we have. And obviously, it's—there's a lot of uncertainty in that space now because while I think people have been very clear with the ambition and the objective that society needs to move to, and we're very aligned with that. We're very supportive of it. There's a lot of questions on how that's going to be accomplished. And frankly, I'm encouraged that there's a much broader discussion beginning to happen. And I would say if you—in the not too recent past, the litmus test around participation in this space or commitment to climate change really went into wind and solar and talking about power generation. I think the conversation has evolved substantially in the last year. I think actually, some of the work that Bill Gates has been doing as he's gone out to talk about this problem is recognizing that the challenge here that this is a hard problem to solve, and it's going to take every- it changes about every aspect of the way that the businesses and economies run today. We've got a lot of solutions that are out there working today.

Wind and solar will continue to play a very important role here, but there are other sectors that are hard to solve, and we got to figure out how to solve those and I think my sense is that's the message that we're hearing from our shareholders, they'd like to see ExxonMobil take the advantages, the skills, the competencies, the capabilities that we've built over the last 135 years in this industry, and bring it to bear on solving these hard-to-solve problems. And that is what we have been focused on. That's the point of the technology timeline that we showed you. And I think they want to see us take a lead role there, and we're committed to doing that. And so I think today, we feel pretty comfortable, certainly in a lot of the conversations that we're having, that the direction that we're heading in is the right direction.

And then the question is how quickly can you move down that path and help society move. And that's a difficult timeline to establish just because it's difficult to schedule breakthroughs in innovation. But I am encouraged by the progress that we're making and the technology developments that we're doing. We're in the process, as I mentioned, of developing a project to deploy a fuel cell in one of our refineries to capture and to concentrate CO2 and generate low-carbon, low-cost hydrogen. And so these technologies are at the stage of starting to deploy some of the early stages, early prototypes, piloting them. And then that will get us on the experience curve, start to drive cost down.

And we've got a lot of opportunities in the hopper with respect to carbon capture and storage all around the world. I mentioned some of those. Those too, depending on the policy that the government has put in place how supportive that is, will help us get down that experience curve. I think we're on the path that people—a number of our major shareholders want to see us on.

Analyst 9

Right and thank you for the presentation.

Operator

Next we'll go to [Analyst 10].

Analyst 10

Thank you. Good morning.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Good morning [Analyst 10].

Analyst 10

I have two questions. I think—thank you, Darren. The first one is for Darren. Your peers in Europe, they're taking a somewhat different approach, far more aggressive in the energy transition plan. And a lot of them, I think have formal targets to reduce the exposure in the oil and gas segment. So from Exxon, Darren, if we look really long term, 10, 20 years, do we still look at Exxon as a global oil and gas company that will do a lot of the carbon sequestration and capture so that it will reduce your carbon footprint or that you could also be just a global energy. And over time, not say the next five years, but over a much longer time, you will foresee your legacy oil and gas and refining become a far smaller domain of your overall business. So that's the first question. The second question, in the carbon sequestration and carbon capture or what you call the Low Carbon Solutions. Should we look at that going to be regarded as a revenue corporate center or that is a facilitation cost center to facilitate your other businesses?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yes. Two, I think, really, deep questions, [Analyst 10]. Let me talk about the first one, which I think is really fundamental to how we think about ExxonMobil. And I would tell you the way that I have thought about our company since stepping into this job and what you see us working on and developing with time here is, first and foremost, a technology company. Which is why we have, over the years, invested pretty heavily in this fundamental science capabilities and the technology organizations that we have. Second, I would say, a hydrocarbon company. And certainly, oil and gas has played a role in that, but you can also see the work that we've been doing in chemicals. And the difference that, that has made to the business and the bottom line as that business has grown and as we continue to grow that business.

And frankly, if you look at the potential for the chemical business and the role that it will play in society, we continue to see that business growing and being a substantial part of the portfolio to address these needs of, responsibly address the needs of modern life and society, particularly as developing countries move up the prosperity curve. And then third, I would say, oil and gas. And so it's maybe a little different order than what most people think about. So what's the significance of that, though. So as oil and gas demand declines, depending on how society evolves to this 2-degree scenario. Carbon capture, given the hard-to-decarbonize sectors, and the carbon capture that most third parties, if not all, say, are going to be needed in order for society to meet its emissions.

You know, one of the things we've been looking at is what can you do with what you capture? And is there a technology angle or slant that allows you to diversify your business into other products that are needed by society, taking advantage of those technology capabilities and hydrocarbon capabilities. And there's—there are opportunities there. We are—we have got technology programs underway, and I'll let Andy maybe talk a little bit about them in a minute here. But technology programs underway, looking at the potential, as you concentrate and capture CO2, can you utilize the carbon for other things, for building materials, for replacing steel.

And so I think as you look at that really long time horizon that you're talking about, [Analyst 10], there's a lot of variables that come into play. And I would say, I could see the business transitioning based on our ability to find a path where we can bring some value to a market and generate a return on the investments that we're making in that space. But again, I would tell you…

Analyst 10

But Darren…

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Go ahead, [Analyst 10].

Analyst 10

Can I just follow-up and ask that from that standpoint, not so much about the next three or four years. You may look beyond 2025, will you for foresee the company the capital allocation to the oil and gas upstream segment and the refining start to reduce compared to your historical range or that's still too early of a timeline?

Darren Woods *– Chairman of the Board and Chief Executive Officer*

Yes. I didn't quite hear the time frame that you were thinking of, but my expectation that evolution will happen and it's really a function of how quickly society can find solutions to these hard problems that Bill Gates has been talking about with respect to this achieving net zero in 2050. And I think there's work to be done there. There are breakthroughs that have to happen, innovations that are required. And I think it's difficult to know exactly how those will manifest themselves. But as they do, our intention is to be engaged and involved in those, and we'll find opportunities. That's one of the advantages of having a fundamental investment in science capability and technology, it will allow us to understand those developments and understand how we can participate in that in a value-added way, in a value-accretive way.

If you think about what we're doing in technology, we've got our own in-house investments that we're making in organization. But we have relationships with 80 universities around the world. And the intent there is to leverage their capabilities, maintain a finger on the pulse of those developments and then bring a perspective about scale and how you participate in these very large markets. And so that's a fairly broad net that we cast across a lot of the world's innovation space. We also have energy—we have energy centers with certain universities, where we're more involved in directing the research and development and bringing our scientists and folks engaged in that development.

And we've got partnerships with the national labs. We've got partnerships with private technology firms. So we've got a pretty big footprint with respect to engagement and involvement across a very broad array of technologies, making sure we understand how these will evolve and develop and constantly looking for a way that we can participate in that. I don't know, Andy, do you want to add anything to that?

Andrew Swiger *– Senior Vice President and Principal Financial Officer*

No. I think you've said it well. I mean, just back to the specific point about the use of captured carbon beyond sequestration. We do have programs that are looking at it because when you think about it, if you have carbon—concentrated carbon capture, you've got a great fundamental building block there to do a bunch of different things potentially with the right technologies. Darren talked about the challenges associated with heavy industry, well, two of the most intensive industries are steel and cement manufacturing. If you can develop a carbon-based product to replace steel and cement in many applications, you basically solve two problems with one technology there.

The other thing to think about is concentrated carbon and hydrogen are your basic building blocks for e-fuels. We have a lot of technologies existent already. Think of our gasoline technologies and so forth that can be used to build e-fuels. Promising, long way to go, but again, another solution for use of captured carbon. The relationships we have, Darren described, across academia, with venture partners, with technology—specific technology organizations and so forth, provide us with a huge amount of visibility into the space that's moving all the time and allows us to select the things that are the best to work on.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

And then I think, [Analyst 10], with respect to your second question around the carbon capture business and whether it's profit or kind of a cost. I think, you know, certainly, the point I made in the presentation in my prepared remarks about this growing demand for carbon offsets as different businesses around the world are participating in hard-to-decarbonize sectors, they're going to look for offsets. And so there will be a market that develops with respect to carbon offsets. And if you think about as well, any policy that's put in place around the world to reduce carbon has an implicit cost of carbon. And so the opportunity that we're working on is making sure that the technology that we bring and the facilities that we can invest in reduce carbon at a lower price than what the market is setting.

And so that's the profit opportunity with respect to the business, is the difference between the kind of the marginal cost of reducing CO2 out there and then our ability to reduce that and our marginal cost and the difference there. And the point that I've been trying to make is, obviously, that's a function of the policies that are put in place around the world and country by country. It's a function of the market that develops for carbon offsets. And then it will be a question of, you know, the investment appetite in those types of projects and how involved those investments get in the opportunities that we're trying to develop as part of low-carbon solutions. All of that is to be determined as we move forward, given the early stages. But our intention is for that, as I said, to help us diversify our revenue streams, be a profit and have value-accretive investments. That's the basis on which we have put this venture together, this business together.

Analyst 10

Thank you.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

You bet. Thank you, [Analyst 10].

Operator

And we have time for one more question. We'll take that from [Analyst 11].

Analyst 11

Thanks for taking my question and appreciate the presentation today. I wanted to ask you about your LNG plans. You obviously had to pause some of them due to the downturn. But could you update us on a few things. Firstly, in Qatar, given the historical relationship, I recall a meeting a couple of years ago, Jack, you said Exxon would be disappointed not to be involved in that expansion.

But clearly, a lot has changed since then. So wanted to get your updated thoughts on that. And secondly, for Mozambique LNG on the onshore element, should we expect that to move forward in 2021? And if it doesn't move forward, are there any risks around the two projects with Total in terms of the lack of alignment? And how are you thinking about the risks to project returns if those two projects are misaligned? Thank you.

Darren Woods *– Chairman of the Board and Chief Executive Officer*

I think we'll let Neil—let him answer, that's his business.

Neil Chapman *– Senior Vice President*

Sure, sure. I think, [Analyst 11], in terms of the expansion in Qatar of course, as you're aware, that process is ongoing right now, and we're engaged in that process. We'll see how that plays out. We have a, obviously, a deep, deep and successful history with Qatar Petroleum. And our Golden Pass project is part of that. I mean we are in the middle of constructing that project. It's a joint venture, of course, between us and QP. So that—the NFE process is going to play out in the coming months, and we'll see. What we've always said is anything we add to our portfolio of opportunities has to compete with what we already have. We are—we're very proud of this very capital efficient, low cost-of-supply opportunity set. So to bring anything else in, we will have to move something out.

So it has to be better. And that's the basis that we talk about it with all of our partners and governments around the world. In terms of Mozambique and Rovuma, we're working closely, not just with our partners and the government, but also with Area 1. In terms of what's the most capital-efficient way to develop that project. And all I would say is that's an ongoing process. I think it's going to be in the best interest of all participants. When we're putting onshore facilities in Mozambique, you get the most capital-efficient project. And we're very much aligned with our partners in Area 4 and in Area 1 to get the most cost-efficient investment. And we're progressing that right now. And in time, we'll see how far that goes.

Analyst 11

Great, thanks.

Neil Chapman *– Senior Vice President*

Thank you.

Stephen Littleton *– Vice President of Investor Relations and Corporate Secretary*

Well, thank you for your continued interest in ExxonMobil and for participating in our Investor Day webcast. We appreciate the opportunity to share with you our plans to create long-term shareholder value and position our company for success in a lower-carbon energy future. Please enjoy the rest of your day and stay safe. Thank you.

Operator

And we have come to the end of today's webcast. Thank you for your participation.

Important Additional Information Regarding Proxy Solicitation

Exxon Mobil Corporation (“ExxonMobil”) has filed a preliminary proxy statement and form of associated BLUE proxy card with the U.S. Securities and Exchange Commission (the “SEC”) in connection with the solicitation of proxies for ExxonMobil’s 2021 Annual Meeting (the “Preliminary Proxy Statement”). ExxonMobil, its directors and certain of its executive officers will be participants in the solicitation of proxies from shareholders in respect of the 2021 Annual Meeting. Information regarding the names of ExxonMobil’s directors and executive officers and their respective interests in ExxonMobil by security holdings or otherwise is set forth in the Preliminary Proxy Statement. To the extent holdings of such participants in ExxonMobil’s securities are not reported, or have changed since the amounts described, in the Preliminary Proxy Statement, such changes have been reflected on Initial Statements of Beneficial Ownership on Form 3 or Statements of Change in Ownership on Form 4 filed with the SEC. Details concerning the nominees of ExxonMobil’s Board of Directors for election at the 2021 Annual Meeting are included in the Preliminary Proxy Statement. BEFORE MAKING ANY VOTING DECISION, INVESTORS AND SHAREHOLDERS OF THE COMPANY ARE URGED TO READ ALL RELEVANT DOCUMENTS FILED WITH OR FURNISHED TO THE SEC, INCLUDING THE COMPANY’S DEFINITIVE PROXY STATEMENT AND ANY SUPPLEMENTS THERETO AND ACCOMPANYING BLUE PROXY CARD WHEN THEY BECOME AVAILABLE, BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION. Investors and shareholders will be able to obtain a copy of the definitive proxy statement and other relevant documents filed by ExxonMobil free of charge from the SEC’s website, www.sec.gov. ExxonMobil’s shareholders will also be able to obtain, without charge, a copy of the definitive proxy statement and other relevant filed documents by directing a request by mail to ExxonMobil Shareholder Services at 5959 Las Colinas Boulevard, Irving, Texas, 75039-2298 or at shareholderrelations@exxonmobil.com or from the investor relations section of ExxonMobil’s website, www.exxonmobil.com/investor.