

## **NEWS MARCH 2021**

### **Energy Transition pressure on exploration**

The exploration sector is heading into 2020 facing increasing pressure from the energy transition. While capital discipline and portfolio high – grading remain key, the shift to a low carbon world poses a fundamental challenge, and this year is likely to show the sector’s direction of travel in the years ahead, according to Wood Mackenzie.

Alana Tischuk, from the market analyst’s global exploration team, explains: ‘Some investors are questioning the need to explore at all given the vast discovered resource base yet to be developed. However, lower – carbon opportunities very often have lower costs and better economics. The challenge is to achieve success at scale. Companies will drill in the hope of finding better resources than those they already have – lower cost barrels with a higher margin.’

She says that while new opportunities exist, these large, valuable prospects lie mostly in new and emerging plays. The majors are likely to remain prominent participants in high impact exploration plays. National oil companies (NOCs), which are less exposed to investor concerns, may also be able to step up their exploration game. Some companies may announce a strategic move towards acquisition – led growth or new energy businesses. Others are boosting their gas portfolio, viewing it as the fuel that will power the energy transition.

Tischuk continues: ‘The move towards gas shows that exploration is not mutually exclusive with a low carbon future. A diverse inventory of low – breakeven opportunities will be key as the energy transition unfolds. Those prospects with a clear route to commercialization are likeliest to be drilled.’

One of the characteristics of successful, independent explorers is quickly exiting plays where they have limited early success, she says, ‘Traditionally, majors have held their acreage to the end of term, but we expect them to adopt the swift turnaround approach of their smaller, nimbler cousins. Many of the areas the majors have added are ultra – frontier, giant blocks, added for minimal commitments. This trend of fast turn of new acreage may not become apparent in 2020, but instead materialize in the next three years or so.’

Globally Wood Mackenzie expects 500-600 wildcats to be completed during 2020, adding around 15bn boe of resources, in line with industry performance since 2014. Investment should hold steady at between \$25-30bn, similar to that spent in 2019. However, spend could slip by as much as 5-15% as cost efficiencies continue.

Tischuk says the Americas will continue to see increased levels of exploration this year, particularly Brazil and Mexico, as will sub – Saharan Africa. Total has high hopes for South Africa after making the giant Brulpadda gas condensate discovery in 2019. The company plans to drill up to four exploration wells in the county in 2020, three targeting oil in the deepwater Outeniqua Basin. The company will also drill its giant (2bn barrel) Venus oil prospect in deepwater Namibia. Shell and Kosmos are also among the companies hunting giants offshore Namibia in 2020.

‘Drilling in Guyana will continue both in the prolific Stabroek block and beyond it. In Suriname, where Apache made the giant Maka Central discovery at the end of last year, we expect wells on four blocks in 2020, operated by Apache, Petrons, Kosmos and Tullow,’ she notes.

Russia may once again see some of the largest volumes overall as domestic companies continue their exploration of giant gas plays in the Arctic offshore and emerging offshore oil plays in the far East.

‘The move from Big Oil to Big Energy is under way, but building materiality will take time,’ Tischuk says.

‘How will the majors sustain themselves through the energy transition? Exploration budgets may shrink for those that choose to focus on resource exploitation. Others, however, will shift their portfolios to the lower end of the cost curve and focus on high – impact exploration.’

Overall, the NOCs are well placed to step into the space left by retreating IOCs. Resource – rich NOCs have advantaged positions at home, but many have lofty expansion goals that will be tough to meet with domestic drilling alone. Qatar Petroleum is one that has already sought to go international. Wood Mackenzie expects other NOCs to follow Qatar Petroleum’s lead in looking for international exploration opportunities.

Increasing output and investment are key for Chinese NOCs as they look to meet steep growth targets, says the market analyst. International exploration will be required given the scale of future production decline, and high – impact acreage capture in Latin American and West Africa is likely. Meanwhile, gas exploration will be key for Southeast Asian NOCs looking to grow into the energy transition by adding cleaner energy to their portfolios.

Tischuk says that exploration success will continue to be concentrated in the hands of relatively few companies. Fewer companies are drilling fewer wells and the corporate landscape has narrowed by 50% since 2013. Many of the companies being squeezed out are small independents and private equity backed companies that lack the cash or the risk appetite to stay in the longer – term exploration game. Exploration merger and acquisition (M&A) levels will likely remain low in 2020.

The government of Papua New Guinea (PNG) has called – off negotiations on the development of the ExxonMobil – operated P’nyang gas field.

Eni has announced a new oil discovery on the Saasken exploration prospect in block 10, locked in the mid – deepwater of the Cuenca Salina in the Sureste Basin, offshore Mexico. According to preliminary estimates, the new discovery may contain 200-300mn barrels of oil in place.

Riverstone, one of Cuadrilla’s private equity backers, has sold its 45% holding in the company to AJ Lucas, an Australian – listed company that already owns 48% of Cuadrilla, for a nominal sum.

### **New shallow gas discovery likely to play pivotal role in UAE gas market**

The UAE has announced the discovery of 80tn cf shallow gas resources in place within the area between Saih Al Sidirah and Jabel Ali in the Emirates of Abu Dhabi and Dubai respectively, which will help the nation meet its goal of achieving gas self – sufficiency and plans to transition from a net importer of gas to a potential net exporter.

The announcement was made during the signing of a strategic cooperation agreement between the Abu Dhabi National Oil Company (ADNOC) and Dubai Supply Authority (DUSUP) to continue to explore and develop shallow gas resources in this area in a joint project named Jebel Ali.

The discovery of the 80tn cf of shallow gas resources was made within an area of 5,000 sq km between the two emirates, with ADNOC drilling more than 10 exploration and appraisal wells – the first time the company has explored for hydrocarbon resources in Dubai. ADNOC is utilizing both conventional and unconventional drilling and completion technologies and methods to access the trapped gas, including horizontal drilling and hydraulic fracturing to enable optimal productivity while reducing the number of drilling rigs required. The gas produced will be supplied to DUSUP, to support Dubai's economic growth ambitions and enhance its energy security.

As part of ADNOC's 2030 strategy, the company also plans to tap gas from its gas caps and substantial unconventional gas reserves, as well as new natural gas accumulations, which will continue to be appraised and developed as the company pursues its exploration activities.

The discovery announcement came less than three months after Abu Dhabi's Supreme Petroleum Council (SPC) announced increases in hydrocarbon recoverable reserves of 7bn barrels of oil and 58tn cf of conventional gas, moving the UAE from seventh to the sixth position in both global oil and gas reserves rankings with total of 105bn barrels of recoverable oil, 273tn cf of conventional gas and 160tn cf of unconventional gas resources, says ADNOC.

According to Wood Mackenzie, the Jebel Ali discovery is 'hugely significant' for the UAE. Commenting on the news, Liam Yates, an analyst on its Middle East upstream team, the find ranks as the largest global gas discovery since Galkynysh (South Iolotan), the Turkmen field discovered in 2005. 'The shallow nature of the find will mean that development costs will be much lower than some of Abu Dhabi's sour gas resources,' he notes. 'A discovery of this scale will be a clear priority for development, but the timing will be dependent on where it fits into the UAE's gas market. Large volumes of gas are associated with oil production, which is on the rise. In addition, ADNOC is pushing ahead with other major gas developments, such as the Hail and Ghasha project. The UAE will also need to honor its gas import commitments from the Dolphin project. But longer term, the field is likely to play a pivotal role in the UAE's gas market and could lead to additional gas exports from the country.'

Meanwhile, Rystad Energy cautions that it is too early to conclude on Jebel Ali's total volumes considering the find covers an area of 5,000 sq km and will need more appraisal wells to pinpoint the exact extent of the hydrocarbon spill point. However, the market analyst adds: 'Even if this new discovery turns out to have only 8tn cf of recoverable resources – one – tenth of the preliminary official estimate – that would still be enough to enable the UAE to become energy independent by 2030, potentially removing its reliance on import volumes from neighbouring countries like Qatar. We also see a decline in domestic gas demand after 2030 that will further limit the need for imports.'

### **Oil demand shock following China's coronavirus outbreak**

The coronavirus is significantly impacting oil demand in China as travel by road, rail and air across the country has collapsed following quarantine measures and restrictions implemented by the Chinese government in a bid to stop the disease spreading.

According to BloombergNEF: 'The demand shock has forced domestic refiners to cut their operation rates. State – owned Sinopec may reduce run rates by 20% points, while the smaller independents are operating below 50% utilization. The longer that the epidemic goes on and people refrain from travel, the greater the impact will be on the profitability of Chinese refiners and the global crude balance. By comparison, the SARS outbreak in 2003 caused air passenger numbers across East Asia and the Pacific region to decline by 2.3% year – on – year.'

Meanwhile, Rystad Energy notes that while the coronavirus outbreak in China 'will curb global oil demand growth by at least a quarter this year', the production cuts of 600,000 b/d proposed by an OPEC+ committee are 'far from enough to balance the market'. Its analysis indicates that both the first and second quarters of 2020 will see global oil production surpluses. 'Our estimate shows that the first quarter of the year will see producers left with a stock build of 700,000 b/d. Our previous estimate was for a more or less balanced first quarter with a 100,000 b/d surplus. The second quarter threatens to build oil stocks by 1.3mn b/d unless production is reduced further. The means that even if the OPEC+ output cuts are implemented in the second quarter, there will still be a sizeable surplus of 700,000 b/d.'

'The economic shut down in China will cause the largest negative oil demand shock since 2008. Even though the chaos unfolding in Libya has wiped out most of its oil production, and even if OPEC's output cuts are fully applied, they will not be enough to fill the demand gap now exacerbated by the coronavirus,' says Bjornar Tonhaugen, Rystad Energy's Senior Vice President and Head of Oil Markets.

Wood Mackenzie expects the coronavirus outbreak to have a much bigger impact on China's petrochemicals industry than the SARS outbreak in 2003. Principal Consultant Kelly Cui says: 'We believe the market should recover from late 2Q2020, mimicking the post – SARS trend of a bounce in demand for consumer goods. However, given the tighter restrictions on transport movement, delayed recovery in operations and higher rate of contagion compared to SARS, the coronavirus outbreak will have a greater impact on all markets – including petrochemicals.'

Wood Mackenzie notes that sluggish demand from end – use plants and restricted transportation are forcing upstream feedstock plants to lower their operating rates. It reports that Sinopec – SK Wuhan Petrochemical – the only petrochemical plant located in Wuhan – has lowered the operating rate of its 800,000 t/y cracker by 10%. A 300,000 t/y cracker expansion in this plant, scheduled for completion in July, will also have to be delayed.

### **Reimagining BP and the energy sector**

BP's new Group Chief Executive Bernard Looney ambition for BP to achieve net zero greenhouse gas (GHG) emissions by 2050 or sooner in response to the climate emergency. 'The world's carbon budget is finite and running out fast. We need a rapid transition to net zero', Looney said, as he announced plans including a major structural overhaul, increased investments in low carbon energy technology, and a decrease in fossil fuel spending.

The ambition is supported by 10 aims, the first five to get BP to net zero and the next five to help the world get to net zero:

- Net zero across BP's operations on an absolute basis by 2050 or sooner.
- Net zero on carbon in BP's oil and gas production on an absolute basis by 2050 or sooner.
- A 50% cut in the carbon intensity of products BP sells by 2050 or sooner.
- Install methane measurement at all BP's major oil and gas processing sites by 2023 and reduce methane intensity of operation by 50%.
- Increase the proportion of investment into non – oil and gas businesses over time.
- More active advocacy for policies that support net zero, including carbon pricing.
- Further incentive BP's workforce to deliver aims and mobilize them to advocate for net zero.
- Set new expectations for relationships with trade associations.

- Aim to be recognized as a leader for transparency of reporting, including supporting the recommendations of the TCFD.
- Launch a new team to help countries, cities and large companies decarbonize.

To deliver the ambition, Looney explained that BP will ‘fundamentally reorganize to become a more focused, more integrated company’ by replacing Upstream and Downstream with four business groups – Production & Operations; Customers & Products; Gas & Low Carbon Energy; and Innovation & Engineering.

BP’s new ambition to be a net zero company by 2050 or sooner covers the GHG emissions from its operation worldwide, currently around 55mn tCO<sub>2</sub> e/y, and the carbon in the oil and gas that it produces, equivalent currently to around 360mn tCO<sub>2</sub> emission a year both on an absolute basis. Taken together, delivery of these aims would equate to a reduction in emission to net zero from what is currently around 415mn tCO<sub>2</sub> e/y.

‘The world’s carbon budget is finite and running out fast; we need a rapid transition to net zero,’ said Looney. ‘We all want energy that is reliable and affordable, but that is no longer enough. It must also be cleaner. To deliver that, trillions of dollars will need to be invested in replumbing and rewiring the world’s energy system. It will require nothing short of reimagining energy as we know it. This will certainly be a challenge, but also a tremendous opportunity. It is clear to me, and to our stakeholders, that for BP to play our part and serve our purpose, we have to change. And we want to change – this is the right thing for the world and for BP’.

### **Energy transition: evolution or revolution?**

The pace of energy transition varies considerably among 15 leading international oil and gas companies according to a new report commissioned by research consultancy CMS, reports Brian Davis. The European major (especially Shell and Repsol) have made far more progress than their American counterparts, while national oil companies are more constrained in their ability to diversify, often due to more stringent government policies and regulatory frameworks.

In 2018, the majors sampled invested \$6.6bn in renewable, equivalent to roughly 3% of their combined capex budgets. Typically, companies with larger oil reserves were less diversified in renewable energy, says the report.

The oil and gas majors commonly focus on renewable investment in wind and solar technologies, while very few have stakes in hydroelectric and geothermal energy sources.

Key drivers for the transition were the declining costs of renewable, investor and customer pressure and government regulations, alongside a new risk allocation strategy, given oil price volatility and the strong geopolitical risk related to traditional oil and gas production.

Significant challenges are also highlighted in terms of changing regulatory environments (such as UK plans to ban the sale of new diesel and petrol engine cars by 2035 at the latest), competition from renewable energy firms and uncertainty surrounding returns from renewable compared to the higher margins from traditional oil and gas resources. ‘These are challenges that could restrict such future investment by the industry,’ the report comments. Looking ahead, the oil and gas major’s journey is still ‘in its infant stages’ in terms of the energy transition, and there is ‘much uncertainty about the trajectory going forward, although the direction of travel is clear.’

Under a conservative ‘existing policies continue’ scenario, the sample of oil and gas companies interviewed suggested that their investment in renewable could grow from \$7bn to \$10bn by 2030. However, a more ambitious ‘rapid energy transformation’ scenario could see this investment figure rise to \$30bn by 2030, accounting for 10% of their total combined annual capex.

The report addresses four main strategies for the energy transition.

- Emissions reduction and improved efficiency.
- Portfolio diversification.
- Integration of renewable technologies into oil and gas companies.
- Continued focus on oil and gas.

Speaking at the launch of the energy transition report, Jonathan Woolf, Partner in the CMS energy team, noted: ‘We are seeing an industry in flux, faced with the biggest change since the oil price explosion in the 1970s. Today there is a correlation between proven resources and investment in the renewable sector, and consolidation will be pretty dramatic,’ He continued: ‘Everybody is doing something, but some are more defensive.’

Independent oil and analyst Beth Mitchell suggested: ‘Integration of climate change has moved from the edge to a central issue for the oil and gas sector.’ She emphasized that major investors like Blackrock, with a \$30bn fund, insist climate change must be integrated in investors’ portfolios. ‘Climate change is now central to company funding’, she said, given investor concerns about physical risks, legislation / regulation and the need for mandatory sustainability disclosure standards coming for all companies.

The report highlights the plummeting cost declines of renewable energy technologies. While at the same time, decreasing costs have placed the oil and gas industry in a more competitive environment against other power companies that are purely focused on renewable. Indeed, wind and solar are now cheaper than traditional forms of electricity resources. This has underpinned many oil and gas major’s strategies to integrate renewable into their oil and gas operations.

Mitchell anticipates that significant money will go from oil and gas to invest in new transformation companies. ‘The transition won’t be linear, but s – curves. So, make sure your data is robust and invest low on the cost curve. Nevertheless, oil and gas will be here for a long times,’ she says. ‘The renewable model will be very different from oil and gas. Diversification is always risky. And the last round of round of oil and gas diversification was not an unalloyed success,’ she noted. ‘Wait a bit, you don’t have to be early. Nobody knows what the ultimate scale of these new renewable businesses will be.’

### **BP declares net zero by 2050 ambition**

Britain’s biggest oil firm, BP, has declared it will be a ‘net zero carbon’ company by 2050- meaning it now has the most ambitious emissions target of any major fossil fuel producer worldwide.

At a news conference in London on 12 February, the firm’s newly appointed CEO, Bernard Looney, said that the company was aiming to ‘earn back the trust of society’ following an increasing backlash from shareholders and environment activities alike.

Looney's promises covers the emissions from BP's global operations, which currently amount to some 55mn tonnes of CO2 equivalent each year, as well as the emissions from the combustion of the oil and gas it produces, totalling 360mn tonnes CO2 annually.

'This is what we mean by making BP net zero. It directly addresses all the carbon we get out of the ground as well as all the greenhouse gases we emit from our operations,' Looney said in a statement. 'These will be absolute reductions, which is what the world needs.'

However, the oil and gas extracted by other companies that is then processed and resells. Instead, BP has vowed to reduce the carbon intensity of these products by 50% by mid – century.

The company was vague about schedules – it said it will increase the proportion of its investments in non – oil revenue streams 'in time'. Last year, BP allocated an estimated \$500mn - \$750mn for the acquisition of various clean and renewable technology start – ups. Meanwhile it spent over \$14bn on its existing fossil fuel businesses.

The company has also committed to cutting the methane intensity of operations at its major oil and gas processing sites by half.

Over the next decade, BP is projected to invest \$71bn in exploring for new oil and gas, but Greenpeace has warned that these resources cannot be burned if society hopes to keep planetary warming below 1.5°C.

In a blog released ahead of Looney's speech, the environmental organisation stated that production from existing oil and gas fields needs to be cut – by 9% and 6% respectively – if the 1.5°C target of the Paris Agreement is to be adhered to. This would mean leaving some resources, which have already been discovered, in the ground.

Environmentalists also criticized BP's announcement over its lack of a specified timeline for renewable investment and a dearth of information on changes it plans to make during this decade. BP has said it will reveal more detail when it unveils its new corporate strategy in September.

'This will certainly be a challenge, but also a tremendous opportunity,' Looney said. 'It is clear to me, and to our stakeholders, that for BP to play our part and serve our purpose, we have to change. And we want to change – this is the right thing for the world and for BP.'

The company will be reorganized into four new business groups, including one responsible for gas and low carbon energy.

Earlier in February, Equinor also launched a 'Climate roadmap' of its own. The Norwegian oil major, which is majority state – owned, has promised to halve the net carbon intensity of the energy it produces by 2050. In the meantime, it will also work to raise its renewable energy capacity tenfold by 2026, primarily through the expansion of its offshore wind portfolio.

Spain's Repsol is the only other oil and gas firm to have set a net zero targets. Like BP, it is eyeing a 2050 deadline, though it has also set carbon intensity reduction goals at key dates along the way. The first is a 10% improvement by 2025.

**Energy – related carbon emissions 'flat lined' last year – IEA**

Following two years of growth, global carbon dioxide emissions stagnated at 33 Gt in 2019, according to the latest figures from the International Energy Agency (IEA). This contradicts the findings of the Global Carbon Project, an international group of climate scientists, which predicted late last year that emissions would rise to 37 Gt.

The IEA credits declining emissions from electricity generation in advanced economies for the slowdown. The expanding role of renewable, fuel switching from coal to natural gas and a higher percentage of nuclear power generation have all contributed to the decarbonisation of power grids in industrialized nations. Emissions from the rest of the world grew by almost 400mn tonnes last year, with almost 80% of the increase coming from countries in Asia where coal – fired power generation continued to rise.

The US saw the largest emissions decline on a per – country basis, with a drop of 2.9%, or 140mn tonnes. Meanwhile, CO<sub>2</sub> emissions from the European Union fell by 5%. Natural gas also produced more electricity than coal for the first time ever last year, while wind energy nearly reached a par with coal – fired electricity.

Power sector emissions from advanced economies have declined to levels last seen in the late 1980s, when electricity demand was one – third lower than it is today, says the IEA. Coal – fired power generation in these countries also declined by nearly 15% as a result of growth in renewable. However, there are concerns that these gains could be short – lived from a global emissions perspective, as developing countries up their coal capacity.

According to Global Energy Monitor, China is currently building nearly 100 GW of coal capacity, while India has 37 GW of new coal in the pipeline.

‘We now need to work hard to make sure that 2019 is remembered as a definitive peak in global emissions, not just another pause in growth,’ said Dr Fatih Birol, the IEA’s Executive Director. ‘We have the energy technologies to do this, and we have to make use of them all.’

The UN’s annual Emissions Gap report, issued late last year, found that global emissions would need to fall by 7.6% each year between now and 2030 to keep global warming to 1.5°C. To reach the 2°C threshold, the upper limit of the Paris Agreement, they would have to fall by 2.7% annually for the next decade.

### **Coal power plants outside European borders ‘supply electricity to the EU’**

Countries outside European borders are increasingly supplying electricity to the EU while simultaneously avoiding the bloc’s carbon price, according to a new report from climate think tank Sandbag. The report; The path of least resistance – how electricity generated from coal is leaking into the EU Emissions Trading System (ETS) are increasingly importing electricity in this manner, with many more planned links to coal – fired plants outside Europe.

The continuation of this practice will effectively undermine EU emissions cuts and will incentive further use of coal in neighbouring countries, turning them into ‘offshore carbon havens’, suggests the report.

Net electricity imports to the EU have risen dramatically – from 3 TWh in 2017 to 21 TWh in 2019. All the imports are from countries that have zero or near – zero carbon pricing, such as Turkey, Morocco,

Ukraine and Bosnia and Herzegovina. Imports are likely to rise further as plans exist to increase the interconnectivity between EU and non – EU states by 31% by 2030.

The key EU countries most exposed to coal power imports are Greece, Finland, Spain, Croatia and Romania, says the report.

Furthermore, by 2025, Sandbag estimates that up to 57 GW of new coal power is being planned or will be constructed in countries connected to the EU ETS. This includes 34 GW in Turkey, 11 GW in Egypt, 4 GW in Bosnia and Herzegovina and 2 GW in Serbia.

‘Europe’s carbon price is driving a new wave of coal plant building just beyond its borders,’ said Dr Chris Rosslowe, Electricity Analyst at Sandbag. ‘The solution isn’t too complicated though: a border tax on the carbon in this imported electricity. With this one new emissions – cutting influence of the EU beyond its borders, and help neighbouring countries build clean energy faster.’

Sandbag’s proposed tax would be a border carbon adjustment on gross electricity imports into the EU ETS region. It says this would defend the integrity of EU climate policy by preventing offshoring of power sector emissions and would also create an incentive for neighbouring states to decarbonise and / or align climate policies, accelerating the spread of carbon pricing.

### **Efficiency and gas drive decade of US energy transformation**

The United States overhauled how it produces, delivers, and consumes energy over a significant decade of change, says a new report from BloombergNEF (BNEF) and the Business Council for Sustainable Energy (BCSE). In the process, the country saw 10 straight years of economic growth, while cutting both power sector CO<sub>2</sub> emissions and consumer energy costs to their lowest levels in a generation.

The report: Sustainable Energy in America Factbook details how the US achieved a 25% rise in GDP since 2010, while primary energy demand rose by only 6.6% in the same period. It identifies natural gas, energy efficiency and renewable energy as key drivers of this transformation.

Over the decade, natural gas became the primary source of US power generations, providing 38% of the country’s electricity in 2019 compared to 24% in 2010. The US increased its export capacity to exceed its import capacity, building stronger trade relationships around the world. In 2019, the US exported more gas than it imported says BNEF.

Meanwhile, an increase in the number of states and cities adopting energy use policies such as the International Energy Conservation Code (IECC) or energy efficiency resource standards (EERS) has contributed to an 18% improvement in US energy productivity since 2010. Federal programmes have also helped high efficiency appliances reach mass markets.

Since 2010, renewable energy has become the cheapest new generation source in many US power markets, says the report. The US has over double the renewable power generating capacity today than it did a decade ago. Solar capacity in 2019 was 80 times greater than what it was at the end of 2009.

‘The transformation we have seen in the last decade has far exceeded expectations,’ said Lisa Jacobson, President of the BCSE. The facts show that we grew the economy, improved energy security, and cut emissions at the same time – all while making energy more affordable to consumers.’

Improvements can also be seen elsewhere; the report highlights:

- Battery technology is now a tenth of its cost in 2009;
- There are nearly over 85mn smart meters in US homes and businesses, up from 9.6mn a decade ago; and
- The number of residential natural gas customers grew by 8% in the last decade while overall residential consumption of gas rose by 5% due to energy efficiency.

Despite this success, some problem areas remain. The transport sector saw a 5% rise in emissions in the decade to become the largest contributor, accounting for 29% of the total in 2019. Last year, federal agencies also proposed weakening fuel economy standards for passenger vehicles, rolled back lightbulb regulations, and delayed issuing a permit for the nation's first major offshore wind farm.

### **Total plans 2 GW entry into Spanish solar market**

French oil and gas giant Total has announced it is entering the solar power market in Spain, with agreements to develop nearly 2 GW projects in the country. Operating through an owned affiliate company, Total Solar International, the company will work with local developers Powertis and solarbay Renewable Energy on two separate schemes.

The first is a joint venture to install 800 MW of solar capacity alongside Spanish solar developer Powertis, and the second is an agreement to wholly acquire a 1.2GW portfolio of early – stage projects from Solarbay. The Solarbay projects will be located in Andalusia, Argon and Castile – La Mancha.

The addition to Total's renewable portfolio will contribute towards its target of operating 25 GW of renewable electricity generation projects by 2025. Currently, Total's gross low carbon power generation capacity worldwide is close to 7 GW, of which 3 GW are from renewable energies. Total also states that low carbon businesses could account for 15-20% of its sales by 2040.

'Spain benefits from a solar recourse that is unparalleled in Europe,' said Julien Pouget, Senior Vice President Renewable at Total. 'Its photovoltaic market is one of the most dynamic in Europe, with an expected capacity increase from 6 GW to nearly 40 GW by 2030. Total is pleased to enter on this fast – growing market through partnerships with local developers.'

The first project to these pipelines is set to begin operation by the end of 2020, with the ambition that all projects of both portfolios will be in service in 2023