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COVID – 19 drives largest energy demand shock since WWII

The IEA has warned that the COVID – 19 pandemic – and the resulting economic shock – will ‘dwarf’ the 2008 financial crash when it comes to reducing global energy demand.

Based on an analysis of over 100 days’ worth of data, the agency’s Global Energy Review predicts that there could be a record annual decline in carbon emissions of nearly 8% this year, as well as a 6% dive in energy demand.

The overall impact of the crisis on the energy industry will be determined by the length and stringency of lockdown measures designed to stop the spread of the virus. It is likely that the biggest falls will be seen in advanced economies – with demand set to drop by 11% in the EU and 9% in the US. According to the IEA, power consumption levels and patterns on weekdays under lockdown resemble those of a pre – crisis Sunday.

At the same time, stay – at – home measures are also driving a significant shift toward low – carbon energy sources most prominently wind, solar, and hydropower. Renewable are set to be the only energy source that will grow this year – largely because their low operating costs guarantee them priority access to grids, says the IEA.

This projected success comes amidst a series of global supply chain disruptions that have delayed project completions in a number of key regions. Regardless, solar PV and wind are on track to help lift renewable electricity generation by 5% in 2020, aided by higher output from hydropower. Nuclear – the world’s other major source of low – carbon power – is not likely to fare as well: It is on track to fall by 3% this year from the all – time high it reached in 2019.

After overtaking coal for the first time ever in 2019, low carbon sources are set to strengthen their lead this year to reach 40% of global electricity generation – a notable 6% ahead of coal. Following a decade of uninterrupted growth, the IEA also forecasts a record 5% fall in demand for gas – fired power. This marks the largest drop in consumption since the production of natural gas evolved at scale during the second half of the 20th century.

All told, the IEA predicts that the combined share of gas and coal in the global power mix will decline by 3% to a level not seen since 2001. This trend is largely responsible for the historic anticipated fall in greenhouse gas emissions. However, Dr Fatih Birol, the Executive Director of the IEA, warned that emissions reductions resulting from premature deaths and global economic trauma are ‘absolutely nothing to cheer’.

‘If the aftermath of the 2008 financial crisis is anything to go by, we are likely to soon see a sharp rebound in emissions as economic conditions improve,’ Birol says. ‘But governments can learn from that experience by putting clean energy technologies – renewable, efficiency, batteries, hydrogen and carbon capture – at the heart of their plans for economic recovery.’

Oil demand has also been hit dramatically by the coronavirus – with demand down nearly 5% in the first quarter, mostly thanks to curtailment in mobility and aviation, which account for nearly 60% of global consumption. By the end of March, global road transport activity was almost 50% below the 2019 average and aviation 60% below.

While Birol cautioned that it is still too early to determine the longer – term impacts of the pandemic, he did concede that the energy industry that emerges from it ‘will be significantly different from the one that came before.’

Historic carbon reductions for India as renewable bite

Emissions of carbon dioxide in India have fallen for the first time in 40 years amid the COVID – 19 pandemic, according to analysis published by the environmental website Carbon Brief in Mid – May. But researchers found that the virus is not solely to blame for the reduction, as competition from renewable and falling electricity use had already weakened the country’s fossil fuel demand over the preceding 12 months.

Daily data from India’s national grid showed that coal – fired generation fell by 15% during the month of March and by 31% in the first three weeks of April. At the same time, renewable energy generation grew by 6.4% in March, though it recorded a slight downward turn of 1.4% the following month.

The drop – off in energy demand observed in March as a result of the coronavirus was enough to drive thermal power generation growth below zero for the first time in three decades. Meanwhile, oil consumptions was also flat lining – leading to an overall emissions reduction of 1% for the fiscal year ending March 2020.

Costs are the key reason that coal – fired power was in decline before the onset of COVID – 19 and explain why it has borne the brunt of falling demand during the crisis, says Carbon Brief. Renewable technologies, such as wind and solar, have much lower operating costs than coal plants and therefore receive priority access to grids.

Oil consumption in India had also been decelerating since the start of last year, though this trend has now been exacerbated by virus – linked demand reductions from the transport sector. At the start of the country’s national lockdown, which began in late March, oil consumption had already fallen around 18% year – on – year.

With the correct level of ambition, investment and policy support, the current crisis has the potential to accelerate the energy transition in the country of 1.4bn people. Recent analysis by the IEA shows that in 2018, India’s investment in solar PV was greater than that invested in all fossil fuel sources of electricity together. This level of support has largely been driven by the fact that solar power is cheaper than coal.

According to Carbon Brief, an auction held during the lockdown period secured 2 GW of new solar capacity at an average of 2.55 rupees / kWh. An average cost of a unit of electricity from the country’s largest coal generator was 3.4 rupees / kWh in the financial year 2018-2019.

Global solar, wind and battery prices drop sharply – BNEF

New research from BloombergNEF (BNEF) has shown solar photovoltaic (PV) and onshore wind are now the cheapest sources of new – build generation for at least two – thirds of the global population.

Meanwhile, battery storage is now the cheapest new – build technology for peaking purpose of up to two – hours of discharge duration in gas importing regions, such as Europe, China and Japan. Up to now, gas – fired power stations have long been the de facto peaking technology in many countries, given the dispatch able nature of the energy they generate.

To arrive at these conclusions, BNEF analysts used information on 7,000 energy projects across 47 countries which started construction over the last six months. The firm's analysis shows that the global benchmark levelised cost of electricity (LCOE) for onshore wind and utility – scale PV generation has fallen by 9% and 4% since the second half of 2019 – to \$44 and \$50 / MWh, respectively.

At the same time, the benchmark LCOE for battery storage has tumbled to \$150 / MWh – a reduction of one half compared to two years ago. Onshore wind has seen its most significant drop in costs since 2015, mainly due to a scale – up in turbine size, now averaging 4.1 MW.

Bests – in – class onshore wind projects can be found in Brazil and the US, with LCOEs of \$24 and \$26 / MWh respectively, excluding subsidies such as tax credits. For solar PV, a new benchmark LCOE of \$38 / MWh has been achieved in China, BNEF attributes the fall to a rapid uptake in better performing monocrystalline modules. New – build solar in China is now almost level with the running cost of coal – fired power plants, at an average of \$35 / MWh.

This is significant, as China advances on its deregulation agenda, opening up competition in the power sector. BNEF predicts LCOEs as low as \$23 – 29 / MWh could be possible, assuming competitive returns to investors.

Tifenn Brandily, lead author of the report at BNEF, says that part of the dramatic improvements in the cost – competitiveness of solar and wind are due to the technologies getting better at extracting renewable resources.

'But our analysis also suggests that since 2016, auctions are forcing developers to realize cost savings by scaling up project size and portfolio,' Brandily adds. Larger scale enables them to slash balance – of – plant, operations and maintenance expenses – and have a stronger negotiating position when ordering equipment.'

The data used for the latest report came from actual deals over recent months, and therefore did not reflect what may happen to the LCOEs of different generation technologies as a result of the COVID – 19 pandemic.

'The coronavirus will have a range of impacts on the relative cost of fossil and renewable electricity,' predicts Seb Henest, Chief Economist at BNEF. 'One important question is what happens to the costs of finance over the short and medium term. Another concerns commodity prices coal and gas prices have weakened on world markets. If sustained, this could help shield fossil fuel generation for a while from the cost onslaught from renewable.'

Australia eyes green transformation with renewable, hydrogen

Australia has the unique opportunity to accelerate the transition to a renewable economy while creating new jobs for communities dependent on coal extraction, according to two new studies by leading NGOs.

The first report: Start with steel: A practical plan to support carbon workers and cut emissions finds that Australia can use wind and solar to make energy – intensive 'green' commodities, such as green steel, aviation biofuel and ammonia.

The document's authors, analysts from public policy think tank the Grattan Institute, claim that steel represents the best opportunity for exports and job creation in key regions, such as central Queensland and Hunter Valley, New South Wales (NSW).

The Institute argues, that such a strategy could solve Australia's climate conundrum', simultaneously reducing emission and reliance on fossil fuels whilst providing training and new job opportunities for 'carbon workers' who are concentrated in the key regions.

'Climate change is a wicked conundrum for Australia,' said Tony Wood, Energy Program director at the Grattan Institute. 'It's a threat to our health and to our agriculture and tourism industries – but tens of thousands of Australians work in industries that rely on fossil fuels.'

The report points to rapid reductions in the cost of renewable energy, which has given Australia a competitive advantage. The country has 4mn km² of high – quality land for coexisting wind and solar power – four times higher than in North America.

In early May, the Clean Energy Council (CEC), the country's renewable energy trade association, outlined a plan to bring forward hundreds of approved utility – scale wind and solar projects as a means of leading the country's recovery from COVID – 19.

According to the CEC, accelerating the development of these plants could deliver over \$50bn of investment, more the 30 GW of generating capacity and more than 50,000 direct jobs in construction, along with many more indirect jobs.

The Australian Renewable Energy Agency recently announced it had allocated \$1.7mn for a study by BP Australia to assess the feasibility of building a renewable hydrogen and ammonia production facility in Geraldton, Western Australia.

Under the study, BP would use grid connected power and procure renewable electricity through a power purchase agreement. Renewable hydrogen would then be used instead of natural gas to produce renewable ammonia.

Europe struggles to define terms of 'green' recovery

Many of Europe's largest companies are receiving financial assistance to cope with the impacts of the COVID – 19 pandemic but, according to EU rules published on 8 May, there will be no 'green strings' attached to bailout provisions.

To date, the European Commission has approved an estimated €1.9tn in state aid to provide liquidity for struggling companies, save jobs and enable research and development amid the crisis. The emergency provisions will be in place until the end of this year, with funds disbursed by individual member states.

Despite pressure from NEOs, the commission has not mandated that national governments impose green conditions on struggling corporation in exchange for bailout money. However, the rules do ask large firms to report on how the aid they received has been used to support green and digital transitions.

The Commission's aid framework was handed down just over a week after the Petersberg Climate Dialogue, an environmental diplomacy meeting of more than 30 governments, took place online. At the

virtual gathering, UN Secretary – General Antonio Guterres urged global governments to devote rescue funds to the energy transition.

‘Where taxpayers’ money is used to rescue businesses, it must be creating green jobs and sustainable and inclusive growth,’ Guterres told Peterberg attendees via videolink. ‘It must not be bailing out outdated, polluting, carbon – intensive industries.’

Subsequently, a group of around 100 European NEOs launched a written appeal asking EU leaders and member states to prioritise a sustainable COVID – 19 recovery in line with the Paris Agreement.

‘How we respond to the crisis will determine whether we succeed or fail in the fight against climate change, the loss of nature, widespread pollution and inequality, and create health benefits for all,’ reads the letter, which was co – signed by Climate Action Europe, Transport and Environment and the Greenpeace European Unit, among many others.

The letter urges lawmakers to impose strict sustainability conditions, monitored and enforced by the EU, on all forms of state support offered to companies. It also argues that fossil fuel producers and carbon intensive industries should not receive bailout funding. Meanwhile, the European Investment Bank should bring its leading policies into alignment with the goals of the European Green Deal.

World drilling first for Neptune Energy

Neptune Energy claims to have conducted the world’s first dual drilling operation from an integrated subsea template structure at the Fenja in the Norwegian North Sea.

In conjunction with the start – up of the Fenja drilling campaign in April, Neptune teams maximized the full capabilities of Seadrill’s West Phoenix drilling rig to drill two wellbores at the same time. While many drilling rigs are equipped with dual drilling capabilities, this was the first time that dual drilling has been executed from an integrated subsea template structure. This accelerated the drilling operations, reduced costs and lowered operational emissions, reports the company.

Neptune’s Director of Drilling and Wells in Norway, Thor Andre Lovoll says: ‘Several drilling rigs have two drilling facilities where these traditionally support one another. However, in the instance of our operations we decided to use these facilities independently to concurrently drill two wellbore. The experience of dual drilling on Fenja has been positive and could see this method adopted as a more standard practice in the future. The current challenger in the market encourage us to re – think the way we do things safely, efficiently and with lower carbon emissions.

Fenja is Neptune’s first operated development project on the Norwegian Shelf and is estimated to contain 97mn boe. Fenja will deliver around 40,000 boe/d at plateau.

Located in the Norwegian Sea, at a water depth of 320 metres, the subsea field will be developed as a tie – back to the Njord – A platform. At 36 km, it will be the world’s longest electrically trace – heated pipe – in – pipe subsea development, reports Neptune.

Green light for Northern Lights CCS investment

Equinor, Shell and Total have decided to invest in the Northern Lights projects in Norway’s first exploitation licence for CO2 storage on the Norwegian Continental Shelf. Plans for development and operation have Norwegian Ministry of Petroleum and Energy.

The investment decision is subject to a final investment decision (FID) by the Norwegian authorities and approval from the EFTA Surveillance Authority (ESA).

‘The Northern Lights project could become the first step to develop a value chain for carbon capture and storage (CCS), which is vital to reach the global climate goals of the Paris Agreement. Development of CCS projects will also represent new activities and industrial opportunities for Norwegian and European industries... and support goals to reduce net greenhouse gas emissions to zero by 2050, says Anders Opedal, Executive Vice President for Technology, Projects & Drilling at Equinor.

The investment decision concludes the study phase during with Equinor, Shell and Total worked closely with Norwegian authorities to conduct engineering studies and project planning, and drill a conformation well. The partners now intend to establish a joint venture company.

Northern Lights will be the first commercial – scale carbon transportation and storage project in Europe. It will be developed in phases. Phase 1 includes the capacity to transport, inject and store up to 1.5mn t/y of CO₂. Investment in subsequent phases will be triggered by market demand from large CO₂ emitters across Europe.

Equinor, on behalf of the partners, has already signed non – binding memoranda of understanding with several European companies for the development of value chains in CCS.

Phase 1 is expected to be operational in 2024 if the project receives a positive FID from the Norwegian government in 2020.

Neptune Energy and Wintershall Dea have reported the successful lift of the 740 tonne topside module for the Nova field in the Norwegian North Sea. The world’s largest crane vessel, Heerema Marine Contractors’ Sleipnir, safely transported the topside module onto the Neptune – operated Gjoa platform. Nova is being developed as a subsea tie – back, connecting two templates to the Gjoa platform and is due onstream in 2021. The Duva and Gjoa P1 fields, both operated by Neptune, will also be tied – back to Gjoa in the Future.

Shell is to sell its Appalachia shale gas assets to National Fuel for \$541mn. The current net production is 250mn cf/d. The deal also includes the transfer of the Shell owned and operated midstream infrastructure. The transaction is part of divesting non – core assets and in line with Shell’s shales strategy which focuses on development of higher margin, light tight oil assets.

Companies aiming to get the best possible output from existing North Sea assets, while deferring major new offshore projects, can now boost their efforts with new guidelines published by OGUK aimed at unlocking brownfield resource opportunities. The guidelines aim to help companies understand good practice in how to identify, rank, approve and carry out opportunities to optimize production in areas including well and reservoirs reviews, facilities reviews and reservoirs surveillance along with methods to set targets, measure progress to set targets, measure progress and assign budgets.

Asia – Pacific LNG companies revisiting strategies to tackle economic slowdown

LNG imports by the world’s top three consumers – Japan, China and South Korea – and other Asia – Pacific countries such as India have taken a hit due to reduced demand and economic slowdown fuelled by the COVID – 19 outbreak. Against this backdrop, LNG firms are re – examining their strategies to

combat the financial slowdown. This has led to long – term LNG supply contract re – negotiations and cargo deferments by the importing countries, causing supply overhang and resulting in lower LNG prices, says Global Data.

Haseeb Ahmed, Oil and Gas analyst at Global Data, comments: ‘Low gas prices and LNG supply glut have impacted LNG producers, who are rethinking their capex spends in the upcoming multi – billion – dollar gas projects. Woodside Energy decided to cut down its capex spending for the year 2020, which led to the delay in the final investment decision (FID) of Pluto LNG Train 2 project in Australia.’

‘The expansion of PNG LNG plant in Papua New, operated by ExxonMobil PNG, is likely to be delayed due to failed negotiations with the government and current market conditions.’

‘Similarly, the FID of the Barossa gas project, which will backfill the Darwin LNG, has been delayed due to low oil prices combined with the COVID – 19 pandemic. This also translates to the delay in the project start year as well, by a year. On the brighter side, despite reducing the workforce to stem the spread of the virus, Tangguh Train3 is likely to be finished as per schedule, as the project is nearing the end of construction.’

Ahmed concludes: ‘The global lockdown resulting in LNG cargo cancellations and leading producers limiting their LNG production could be the short-term impact on this sector. In the long-terms, the emergence of new importers such as Vietnam and the Philippines among other can be seen creating a bigger market for global suppliers in the Asia-pacific. LNG is also expected to play a major role in the energy transition from coal to gas in the region.’

Double-down on EV sales to tackle pollution that has left citizens more vulnerable, says T&E

Electric car sales rose dramatically in 1Q2020-right up until the COVID-19 crises shuttered dealerships across Europe, according to new industry data from the European Automobile Manufacturers Association (ACEA). While overall sales plummeted in March and April 2020, plug-ins reached a record one-tenth of new cars sold in March, reports the International Council on Clean Transportation (ICCT) and just under 7% for the first quarter. Meanwhile, as Europe tries to avoid a return to the air pollution that scientist say likely left citizens more vulnerable to the pandemic (as reported by the European Public Health Alliance (EPHA)), transport & Environment (T&E) has called on EU governments to promote sales of zero emission vehicles only.

Plug – in vehicle sales surged between 6.6% and 9.7% in Europe’s three biggest markets, Germany, France and the UK, in the first three months of this year. In Germany, where dealerships stayed open until 16 March, 9% of new cars sold that month were electric, according to the ICCT. As a result, the vast majority of carmakers – including Renault, BMW, and Fiat and Tesla through their combined pool – were compliant with the EU CO2 targets already in 1Q2020 before new EV models hit the market, it says. A few carmakers not yet in compliance are expected to catch up, including the VW Group which plans to bring its landmark ID.3 model to market very shortly.

Julia Poliscanova, Clean Vehicles and E-mobility Director at T&E, says: ‘The crisis struck at the health of our citizens and at our economies. But the recovery offers the chance to build the clean mobility of tomorrow, not go back to polluting combustion engines again, by supporting the sales and production of EVs, batteries and charging infrastructure.’

There are now almost 50 battery electric models on the European market, T&E analysis shows. Carmakers have invested billions in their production, which is set to reach around 3.5mn units in 2020/2021. A dozen battery gigafactories are also due to come online. T&E says any public support given directly to carmakers must be on the condition that they cease development of new combustion engines and invest in electric car production and battery supply chains. Public stimulus should also target charging infrastructure and battery manufacturing in Europe to create jobs fast, it says.

Cars in the EU27 emit 45% of transport CO2 emissions and their impact is still growing. To realize the ambition of the EU Green Deal, Europe will need at least 40% of new cars to be zero emissions in 2030, and will need to sell the last combustion engine car by 2035 at the very latest, concludes T&E.

Total targeting net zero by 2050

Total has adopted a new ambition to get to net zero emissions by 2050, covering the company's global business across its production and energy products used by customers.

The company plans to achieve its target in three steps;

- Net zero across Total's worldwide operations by 2050 or sooner (Scope 1+2).
- Net zero across all its production and energy products used by its customers in the EU, Norway and the UK by 2050 or sooner (Scope 1+2+3).
- A 60% or more reduction in the average carbon intensity of energy products used worldwide by Total customers by 2050 (less than [27.5gCO₂/MJ](#)) – with intermediate steps of 15% by 2030 and 35% by 2040 (Scope 1+2+3).

The ambition is supported by Total's strategy to develop as a broad – energy company, with oil and gas, low carbon electricity and carbon – neutrality solutions as integrated parts of its business. The company believes this low carbon strategy provides a competitive advantage which creates long term value for its shareholders.

Commenting on the news, Valentina Kretschmar, Wood Mackenzie Vice President of Corporate Research says: 'Total has joined the European majors' net zero carbon club, committing to achieving carbon neutrality from Scope 1, 2 and 3 emissions – significantly increasing its previously stated targets.'

'Total has led energy transition efforts among the majors and is the largest spender, accounting for almost 60% of the European majors' total M&A spend in renewable, or nearly \$5bn since 2016. The company's deeper commitment to meeting carbon targets shows its unwavering strategic direction towards diversification into clean energies, despite low oil prices and the implementation of cost – cutting measures across its oil and gas business.

'The move is a positive development for the energy transition within the oil and gas sector, which we expect will accelerate in a post – coronavirus world, especially in Europe. The EU Green Deal, as well as the UK's aim to achieve net zero carbon by 2050, will continue to increase pressure on companies to commit to clean energy and develop carbon mitigation strategies.'

- In other news, Total reports that it is stepping up its research into carbon capture, utilization and storage (CCUS) technologies by signing a multi – year partnership with UK start – up Cambridge Quantum Computing (CQC). The partnership aims to develop new quantum algorithms to improve materials for CO2 capture.

Oil prices climb above \$30/b on demand optimism

Both Brent and WTI oil prices rose on 18 May 2020, as Petroleum Review went to press, reaching above \$30/b for the first time in two months as the oil balance seemed closer. Producers are significantly throttling back output and, with demand increasing, the market is on a slow path towards recovery, according to some market analysts.

OPEC became the spearhead of balancing efforts in May as the supply cut agreement came into effect. Three members of OPEC – Saudi Arabia, Kuwait and the UAE – subsequently went beyond the agreement, by announcing that they will enact deeper – than – agreed production cuts starting from June.

Shut – ins outside of OPEC have also contributed to the decline in supply. Rystad Energy Senior Oil Markets Analyst Paola Rodriguez Masiu notes: ‘Faced with meager demand and unattractive low prices, production curtailments came faster and deeper than initially anticipated. US operators have already announced crude production shut – ins of at least 1.2mn b/d in May – June, and frac activity in the US has dropped about 62% on a standard – month basis in April, and won’t recover before 3Q2020.’

‘Optimism on the demand side of the oil equation has also helped prices climb further, with gasoline demand coming back as governments ease confinement measures. This will help. But the physical market is not completely ‘out of the woods’. We still see a 13.7mn b/d implied liquids (crude, condensate, NGLs, others) stock builds in May 2020. Although significantly down from the all – time – high 26.7mn b/d implied builds in April 2020, the market will need to absorb crude into storage both onshore and at sea. In addition, there is significant downside risk related to two events, the resurgence in COVID – 19 outbreaks, and deteriorating compliance to OPEC + cuts as demand comes back.’