

Coal's Familiar Foes Set to Pull Down Prices in Europe This Year



European coal faces another depressing year as natural gas floods the region and clean-energy policies reduce demand for the dirtiest fossil fuel.

Coal use across seven European economies fell to historic lows last year, pushing benchmark rates down by almost a third to \$62 a ton. The prospects for 2020 are looking equally bleak, with analysts from S&P Global Platts and Capital Economics predicting prices plunging to the \$50 mark, the lowest in four years.

It's the latest indication that the economics for burning coal have collapsed in little more than a year since the commodity hit \$100 a ton. Europe's goal of zeroing out carbon emissions by the middle of the century along with ever-cheaper wind and

solar power and falling gas prices all point to drastic reductions for generators that burn coal.

“Although we saw coal generation pushed to minimum levels in the second half of 2019, it should fall again year-on-year in the first half of 2020 due to low gas and stable carbon pricing,” said Joe Aldina, S&P Global Platts’ head of coal analytics.

For most of last decade it was more profitable to burn coal than gas in Germany, Europe’s biggest economy. That relationship was turned on its head last year as imports of liquefied natural gas and mild weather pushed down prices for the cleaner fuel, encouraging utilities to switch away from coal.

Dark spreads indicating the theoretical profit for burning coal to make power in Germany have been falling further behind spark spreads for using gas. The trend, according to Bloomberg analytics, becomes especially acute later this year.

Gas Glut

Part of the reason is the abundance of natural gas. Ample flows from pipelines along with near-record levels of LNG shipments arriving in Europe have left storage sites brimming.

The gas glut may worsen after last month’s deal between Russia and Ukraine to keep gas flowing to Europe. Construction of another direct route to Europe, the Nord Stream 2 pipeline to Germany, is expected to finish this year even though the U.S. imposed sanctions on the project.

“The gas transit agreement between Russia and Ukraine and soon-to-be completed Nord Stream 2 pipeline, allied with the prospect of higher U.S. LNG exports means that the European market will be awash with gas supplies in 2020,” said Franziska Palmas, assistant economist at Capital Economics.

While European year-ahead coal prices have slumped, the penalty for using the fuel has increased as the cost of carbon emission permits surged five-fold since 2017. At the same time, benchmark month-ahead gas contracts have slumped to 42% below the 10-year seasonal average.

“I don’t expect coal to fall below \$50,” said Elchin Mammadov, an analyst at Bloomberg Intelligence in London. “Which is why I don’t think there will be gas-to-coal switching. If anything, it’ll be the other way round given that gas will likely stay cheap throughout the year.”

The pessimistic outlook for coal view is not unanimous. Perret Associates expects a global surplus of the commodity to swing into deficit by the end of this year as India and countries in the Pacific Rim region make up for a drop in demand in Europe.

Top quality oil sold near \$100 a barrel on new ship fuel rules



Just shy of \$100 a barrel – that’s the cost of a type of crude that’s become prized thanks to the scramble for cleaner-burning fuels.

Australia’s Santos Ltd. this week sold a cargo of March-loading Pyrenees, a dense and low-sulfur oil, at a premium of about \$31 a barrel over Dated Brent, according to traders who took part in the tender. That’s the equivalent to just under \$100 a barrel given that the global benchmark is trading at about \$65.

Demand for so-called heavy-sweet oil like Pyrenees has surged in recent months due to cleaner global ship-fuel standards, known as IMO 2020, which took effect Jan. 1. The new rules have boosted the value of these crudes that are low in sulfur and also viscous, which makes them better for marine engines. Low-sulfur marine fuel, another IMO compliant type of oil, cost about \$640 a ton this week in Singapore, the equivalent of about \$95 a barrel.

Santos had sought a target price of \$32 a barrel or more over Dated Brent, according to traders. The company has a minority stake in the Pyrenees project, which it acquired through its 2018 purchase of Quadrant Energy.

“New IMO 2020 environmental regulations for shipping bunker fuel are driving the low-sulfur fuel oil market,” a Santos spokeswoman said in an emailed statement. “Heavy sweet crudes like those from our Van Gogh and Pyrenees fields are well suited for fuel oil blending to meet the new environmental requirements and are currently in very high demand.”

Pyrenees is also particularly valued because of its relative scarcity, with production of about 15,000 barrels a day pumped from fields off Western Australia, according to BHP Group, the majority owner and operator. A cargo to load this month was sold in November at more than \$17 a barrel over Dated Brent. Another Australian heavy-sweet crude, Van Gogh, sold at a premium of as high as \$19 to Dated Brent in December.

Parsley boss says shale drillers will finally deliver returns in 2020



Enter text here This is the year when shale drillers are finally going to deliver solid returns to investors that have grown weary of the industry's decade-long cash burn, the head of explorer Parsley Energy Inc said. Why? Because for the first time the producers behind the US shale boom are collectively showing restraint in capital spending at a time when crude prices are rising and struggling oil-service providers are lowering their rates, Parsley chief executive officer Matt Gallagher said in an interview. In the past, explorers would instead have taken advantage of that to drill at full throttle again. "It's the proof-in-the-pudding year," Gallagher said. "We've been telling generalists in the financial community that you're going to get a payday for investing in this great renaissance." Whether investors will be easily convinced is yet to be seen. After Wall Street poured more than \$200bn in a growth-focused, debt-driven shale patch in past years, most drillers have yet to produce free cash flow that would ensure healthy returns.

The S&P index of exploration and production companies fell 11% last year, even as oil jumped 34% in New York. But Parsley might have more reasons to be optimistic than others. The Austin, Texas-based company on Thursday won shareholder approval to acquire rival Jagged Peak Energy Inc for \$1.8bn. Its shares fell 1% to \$18.27 at 10.34am in New York as an easing of fears of disruption to Middle Eastern supplies pushed West Texas Intermediate, the US benchmark, toward its biggest weekly loss since July. It's a deal that Gallagher had to hit the road and man the phones for in order to convince investors of its potential. After an initial negative reaction that sent the stock plunging 11% the day the deal was announced, the shares have rebounded 20% since. That's about double the gain for S&P's E&P index over the same span, at a time when the market has mostly punished buyers.

Even as he works to integrate Jagged Peak into Parsley, Gallagher reiterated that the newly merged company is a good takeover target. "It'd be very attractive to a lot of companies," Gallagher said, declining to name possible suitors. "I don't think that anything done in this deal would negate that." Gallagher, who took over as CEO from Parsley founder and chairman Bryan Sheffield last year, expects a continued throttling back of US oil growth, to an expansion of about 500,000 barrels a day in 2020, with even slower growth through 2025. That's roughly half the annual growth expected by the US Energy Information Administration. American output ended 2019 at a record level of nearly 13mn barrels a day, more than any other nation and up from less than 12mn at the start of last year, according to weekly EIA data. This will finally be the year that investor skepticism is eased, Gallagher predicts.

ANALYSIS – TurkStream to strengthen Turkey’s energy hub position



With Hungary, Bulgaria and Serbia to depend on TurkStream, Turkey’s importance to increase in terms of energy security

Yunus Furuncu completed his bachelor’s degree and master’s degree at the Vienna University of Economics and his Ph.D. at Duzce University and works as a researcher at the energy desk of the Foundation for Political, Economic and Social Research (SETA).

ISTANBUL

The inauguration of the TurkStream natural gas pipeline project, which will begin carrying natural gas from Russia to Europe via Turkey on Jan. 8, 2020, is considered a further step in Turkish and Russian relations in terms of energy.

The project, which has two lines, each of which has a carrying capacity of 15.75 billion cubic meters of natural gas, is particularly important for southern European countries. It will mark the first time that Russian natural gas will reach Europe via Turkey. The TurkStream project transfers natural gas directly to Turkey, which the country takes from the West Line, and it means a new route for European countries. Thus, Turkey has strengthened its position as a country that contributes to the energy security of Europe.

Turkey's energy security increasing

Turkey's claim of being an energy hub has been strengthened by the TurkStream project, which enables the country to directly take the natural gas coming from the West Line. TurkStream, which will be operated by a company established by BOTAS and Gazprom, is an important route for meeting the natural gas needs of Europe. The project, which increases the mutual dependency between Ankara and Moscow, positively contributes to the advancement of cooperation for future relations between the countries. Thus, TurkStream is significant for revealing that energy sources strengthen cooperation and ensure economic benefits rather than causing conflicts.

The West Line, one of the routes coming from Russia, reaches Turkey by passing through Ukraine and Bulgaria. Political and economic tensions between Russia and Ukraine sometimes lead to an interruption of natural gas transmission from the West Line to Turkey.

This situation poses a great risk for the Turkish economy. Transmitting the annual 14 billion cubic meters of gas from the West Line to Turkey over the first line of TurkStream, without changing terms and conditions of the existing agreements, means reducing this risk. Thus, gas will be directly transmitted from Russia to Turkey without the need for intermediate countries, and the problem of being exposed to potential interruptions caused by third parties will be

eliminated. As a result, Turkey's energy security has increased with this project.

Since the pipelines in Ukraine have reached the end of their service life, they must be repaired and replaced. Some 20,000 kilometers of a total 33,000 kilometers of transmission pipelines are more than 33 years old. A major resource is needed to further operate the pipelines which span approximately 13,000 kilometers and are 11 to 33 years old. Under these conditions, the fact that Russia acts reluctant and is willing to invest in other directions except for maintenance and repair poses another great risk to the countries that benefit from those pipelines.

Even if the TurkStream project is not carried out, it is understood that the West Line will fail to perform its former function in the future. Therefore, the problem of a lack of infrastructure that would arise in the future has been eliminated with TurkStream.

Impacts on dependency

It is understood that Turkey bought an average of 26.4 billion cubic meters of natural gas per year from Russia between 2011-2018. The lowest amount was 24 billion cubic meters in 2018. It is seen that the EU countries import an average of 40% natural gas from Russia. This rate increases to 100% in some EU countries. Turkey continues to take significant steps to decrease its dependency on Russia. Benefitting more from renewable energy sources in Turkey has led to a decrease of the gas rate coming from Russia from around 60% to around 48% in 2018. Moreover, in case of full usage of the capacity of natural gas coming from TANAP allocated for Turkey in 2020, this rate is expected to fall to around 40%.

Turkey consumes an annual average of 50 billion cubic meters of natural gas and procures 99% of this amount from abroad. Not depending on one resource, it puts forward strategies

prioritizing diversifying source countries with new pipelines such as TANAP as well as routes.

Likewise, Turkey, which aims to reach a storage capacity for around 10 billion cubic meters of natural gas in 2023, has the technical capacity to procure half of the natural gas it consumes as LNG (liquefied natural gas). Turkey, which follows the policy of reducing natural gas usage rates in electricity generation, increases its standing as a regional actor by participating in international energy projects. While all these developments decrease Turkey's dependency on Russia, it increases Russia's dependency on Turkey compared to the past with the TurkStream project.

It is understood that the natural gas structure in the Balkans will change to a certain extent with the arrival of TurkStream to the region. It is stated that the West Natural Gas Pipeline will become dysfunctional due to TurkStream. As Hungary, Bulgaria and Serbia will meet their increasing natural gas demand with TurkStream, Turkey's importance will increase in terms of those countries' energy security. Also, the BOTAS and GAZPROM partnership, which will operate the second line that will reach Europe, means that Turkey will economically benefit from TurkStream.

US sanctions and possible results

It is claimed that TurkStream does not align with the strategic goals of the U.S. and the EU's Third Energy Package legislation. On the other hand, the U.S. shows that it is against TurkStream with its CAATSA (Countering America's Adversaries Through Sanctions Act) sanctions. The U.S. Congress increased its pressure on TurkStream and Nord Stream 2 with the National Defense Authorization Act for Fiscal Year 2020 it passed in December 2019 and by supporting some sanctions. The implementation of items targeting ships involved in laying pipes on the seabed in these projects may be on the agenda in 2020. However, as Turkish firms do not

carry out the sea part of the project, it is not possible to directly implement U.S. sanctions on Turkey. On the other hand, since the TurkStream project was initiated earlier than CAATSA's enactment, it should not be involved in these sanctions.

While TurkStream brings Ankara and Moscow closer, it also presents gains for Turkey concerning Syria and Libya, which are important issues of foreign policy. The progress and increase in this cooperation will provide significant flexibility to Turkey in foreign policy.

On the other hand, transmission of natural gas, which the EU demands, through Turkey to the EU and the increase of the amount that is carried by time are seen as a result of this cooperation. The EU will have to import more natural gas if Norway's reserves, which are seen as an insurance due to its closeness to the EU, expire in a short time. While the U.S.' external natural gas dependence rate was 47% in 2000, this rate increased to 55% in 2017.

It is foreseen that this rate will increase to around 70% in 2030. For this reason, Turkey stands out as one of the most reliable routes at the point for meeting the EU's energy needs.

Projects such as TurkStream and TANAP have emerged to meet Europe's natural gas needs. Increasing the number of these projects contributes positively especially to security and economic issues at regional and global levels. New cooperation with countries close to this geography, such as Turkmenistan, which has the largest proven natural gas reserve in Central Asia, may be established. Turkey, which is one of the key countries that will play an active role in transmitting Turkmen gas to Europe, can display its playmaker role easier with the experience it gained through TANAP and TurkStream. Therefore, it can be said that Turkey's leadership role in energy is being strengthened in terms of the realization of

international projects.

*Opinions expressed in this article are the author's own and do not necessarily reflect the editorial policy of Anadolu Agency.

Germany tells US to back off over Russian pipeline



BERLIN – Germany on Thursday warned Washington to mind its own business after US lawmakers gave initial approval to a bill that would sanction contractors working on a Russian pipeline to Germany.

“European energy policy is decided in Europe, not in the US,” Foreign Minister Heiko Maas said on Twitter.

“We reject external interference,” he said.

The 9.5 billion euro (\$10.6 billion) Nord Stream 2 pipeline will run under the Baltic Sea and is set to double shipments of Russian natural gas to Germany.

The German-Russian Chamber of Commerce (AHK) said the pipeline was important for the energy security of Europe as a whole and called for retaliatory sanctions against the United States if the bill passes.

“Europe should respond to sanctions that damage Europe with counter-sanctions,” said AHK chief Matthias Schepp.

Supporters of the 1,230-kilometer (760-mile) line say it will be a reliable source of cheap energy but critics warn it could end up vastly increasing Russia’s political influence in Europe.

The EU joined in criticizing proposed US action.

EU Trade Commissioner Phil Hogan said Brussels “opposes the imposition of sanctions against any EU companies conducting legitimate business”.

“The (European) Commission objective has always been to ensure that Nord Stream operates in a very transparent and in a non-discriminatory way with the appropriate degree of oversight,” he said.

Germany’s Schepp said the sanctions would end up affecting European companies more than Russia.

Half of the project is financed by Russian gas giant Gazprom, with the rest covered by its European partners: Germany’s Wintershall and Uniper, Anglo-Dutch Shell, France’s Engie and Austria’s OMV.

Despite its own diplomatic tensions with Russia, including over the murder of a former Chechen rebel in Berlin earlier this year, Germany has repeatedly defended the long-running project.

The German economy ministry said it was awaiting the result of a US Senate vote expected next week on the bill – part of much wider US defense legislation.

US President Donald Trump has already said he would sign off on the measures if they are approved.

The bill requires the US State Department to report back within 60 days with the names of companies and individuals involved in pipe-laying for Nord Stream 2 and TurkStream, another pipeline from Russia to Turkey.

The sanctions envisioned by the bill include asset freezes and revocation of US visas for the contractors.

One major contractor that could be hit by the sanctions is Swiss-based pipeline laying company Allseas, which has been hired by Gazprom to build the offshore section.

The power of Gazprom and therefore the Russian state is at the center of concerns about the pipeline in the United States and in eastern and central Europe.

Europe is Russia's main customer for natural gas and critics fear the pipeline, which has an annual capacity of 55 billion cubic meters, will increase its reliance.

Countries like Ukraine, a major transit country for Russian gas, also fear they could lose influence.

Russia had hoped to launch the pipeline in late 2019 but the completion has been delayed by difficulties in obtaining permits from Denmark.

In October, Copenhagen gave Russia a permit to build a section of the pipeline on the Danish continental shelf in the Baltic Sea.

Russian Deputy Prime Minister Dmitry Kozak told reporters last month that he expected the pipeline to become operational in

World on course to burn more coal, threatening climate goals



Coal consumption is set to rise in the coming years as growing demand for electricity in developing countries outpaces a shift to cleaner sources of electricity in industrialised nations. While use of the most polluting fossil fuel had a historic dip in 2019, the International Energy Agency anticipates steady increases in the next five years. That means the world will face a significant challenge in meeting pledges to reduce greenhouse gas emissions that cause global warming. “There are few signs of change,” the agency wrote in its annual coal report released in Paris yesterday. “Despite all the policy changes and announcements, our forecast is very

similar to those we have made over the past few years.” While this year is on track for biggest decline ever for coal power, that’s mostly due to high growth in hydroelectricity and relatively low electricity demand in India and China, said Carlos Fernandez Alvarez, senior energy analyst at the Paris-based IEA. Despite the drop, global coal consumption is likely to rise over the coming years, driven by demand in India, China and Southeast Asia. Power generation from coal rose almost 2% in 2018 to reach an all-time high, remaining the world’s largest source of electricity. The steady outlook for coal comes in spite of waning demand in industrialised nations. Europe has set a goal of zeroing out carbon pollution by the middle of the century, which would mean drastic reductions for coal. In the US, competition from natural gas has cut into demand for coal, despite President Donald Trump’s vows to revive the industry. The story is different in Asia, which will more than make up for reductions elsewhere. India, with a population of more than 1.3bn, will see coal generation increase by 4.6% a year through 2024 to help power its growing economy. In Southeast Asia, coal demand will grow more than 5% annually. China, which accounts for almost half the world’s consumption, will also have modest growth with usage peaking in 2022. “How we address this issue in Asia is critical for the long-term success of any global efforts to reduce emissions,” Fatih Birol, the IEA’s executive director, wrote in a foreword to the report. Any new coal plants added to meet the growing power demand in these countries will likely be in use for decades. Even as China’s coal consumption slows and then declines after 2022, emissions from the fuel would need to rapidly decline in order to meet climate targets. Under current policies, the world is set to warm almost 3 degrees Celsius (5.4 degrees Fahrenheit) by the end of the century. That’s double the rate scientists say is needed to constrain the worst impacts of climate change. To prevent those increases, it would be necessary to use technology that captures and stores carbon as it’s emitted from power plants, the IEA said. While the technology is expensive and untested

at scale. But with coal here to stay, it may be the only option to reduce emissions.

StanChart boosts clean energy target and nudges clients on coal



Standard Chartered Plc plans to facilitate \$35bn of funding for clean technology by 2025, joining rival banks including Goldman Sachs Group Inc that are stepping up their climate-change promises. The London-based bank also vowed to only support those clients who are moving to generate less than 10% of their earnings from thermal coal by 2030, according to a statement on Tuesday. The new target extends the previous 2016 goal that foresaw \$4bn of green funding by 2020. "There has not been sufficient investment into this sector across emerging Asia, Africa and the Middle East," the bank said. Chief executive officer Bill Winters said Standard Chartered is the first bank active in emerging markets to "confirm that we will be out of thermal coal by 2030." Emerging markets are the focus of Standard Chartered's business, and

generally rely more heavily on coal to generate electricity than developed countries do. The bank also said it will withdraw from three coal-fired power projects that it agreed to finance before revising its policies last year. On Monday, Goldman Sachs announced a revision to its own policies, pledging to avoid directly financing new thermal coal mines and upstream Arctic oil exploration. Standard Chartered also released a report detailing its progress aligning its lending portfolio with the goals of the Paris Agreement, which aims to limit global warming to significantly below 2 degrees. Standard Chartered's plan to withdraw support from clients that aren't transitioning away from coal will be implemented in phases, starting in January 2021. In 2018, the bank said it would prohibit direct financing for new coal-fired power plants.

EU Overcomes Nuclear Divide to Reach Key Green-Finance Deal



The European Union agreed on a landmark green-finance regulation, advancing the bloc's push to embed environmental goals in standards for banks, money managers and insurers.

EU lawmakers approved an accord on the list of sustainable activities late Monday, following an agreement by the bloc's member states earlier in the day. Policymakers had to overcome last-minute divisions over the kinds of technologies that should be eligible to be classified as green, with nuclear-energy proponents, including France, seeking revisions to an earlier version of the proposed rules.

"With this deal, we now have a common language and new rules for financial markets," Pascal Canfin, a French member of the EU parliament, said in an email. The final compromise means both nuclear and gas "are neither included nor excluded in principle" from parts of the list, and – like all other activities – would feature only if they comply with the so-called "do no significant harm" principle, he said.

The EU's definitions of sustainable activities for investment purposes, dubbed "taxonomy," are the centerpiece of its plan to regulate the fast-growing market of green finance, in the hope of directing trillions of euros to fund a radical

overhaul of the region's economy. It's meant to define what's green and what's not, an effort that could find a range of uses and serve as an example for governments around the world.

The back-and-forth over the rules shows what kind of obstacles the EU has to overcome to meet its ambitious climate targets. Leaders last week agreed that the bloc should achieve zero net emissions by 2050, paving the way for a flurry of legislation that's needed for the unprecedented clean-up of the economy.

Green Investment

The agreement on the taxonomy is a vital step as it's meant to help countries shoulder the cost of fighting global warming. "This is the much-needed enabler to get green investments to flow and help Europe reach climate neutrality by 2050," Valdis Dombrovskis, the European Commissioner in charge of financial-services policy, said on Twitter.

Monday's agreement on the green investment catalog is just the first step of the process, setting out the overall framework. The concrete list of activities will be drawn up based on recommendations by a panel of experts and adopted by the European Commission, the EU's executive arm.

All financial products will need to make clear to which extent they comply with the new framework, though issuers can opt-out if they don't pursue any environmental goals. The first set of definitions will be applied from the end of 2021, with the rest following a year later.

"We are delighted that there is progress in the approval of the EU taxonomy," Nathan Fabian, chief responsible investment officer at Principles for Responsible Investment, said in an email. "Investors in Europe and around the world see the taxonomy as a major reform in investment practices and are keen to understand their obligations under the framework."

Gazprom and Ukraine agree on gas transit, settle legal issues



Bloomberg/ Moscow

Gazprom PJSC and Ukraine reached an agreement that will allow Russian gas to flow to Europe via its neighbour through the end of 2024 and settle all of the related legal disputes.

Ukraine's gas company, Naftogaz PJSC, will organise the transit of Russian gas through the country, with a booked pipeline capacity of 65bn cubic meters for 2020 shipments, Gazprom chief executive officer Alexey Miller said in a statement yesterday.

In 2021-2024, the booked capacities will reach 40bn cubic meters a year, he said. The companies also agreed to mull the possibility of gas transit through 2034, according to a protocol, signed late Friday evening in Minsk. An extension

for the following 10 years may be on the same terms as the five-year deal, according to Ukraine's Energy Ministry.

"The transit via Ukraine will continue and the strategic nature of the transit was understood by everyone and I believe it would help us open a new chapter in this relationship," EU Commission Vice President Maros Sefcovic told Bloomberg yesterday.

The bilateral agreement paves the way for the continuation of Russian gas flows to Europe via Ukraine, which has been the key transit route for Gazprom even amid the legal spats and political tensions between the two nations.

It also supports Europe's energy security as Russia has been the European Union's dominant and often cheapest energy supplier, providing some 37% of the fuel to the region last year. The current 10-year transit deal between Russia and Ukraine expires January 1. "There are very precise deadlines until when everything should happen," Sefcovic said. "I have no doubt that everything will go smoothly as of January 1 because there was full understanding of what needs to be done."

Russia and Ukraine reached the deal as the US administration imposed sanctions on Russia's future subsea gas-export pipeline, Nord Stream 2. The \$11bn pipeline is just weeks away from completion, but it has faced criticism from the US, and it wasn't immediately clear if the pipeline work can be completed without the input of AllSeas Group SA, which said it would halt operations.

Talks to find a deal between Russia and Ukraine intensified in recent days as the deadline loomed. "To be honest we have done almost the impossible in three months," Ukraine's Energy Minister Oleksiy Orzhel told reporters in Kiev yesterday.

Under the deal, Gazprom and Ukraine have agreed not to start any new gas lawsuits against each other and to cancel all their current legal claims that haven't been subject to court rulings, according to Miller. The Russian gas giant will also pay to Naftogaz \$2.9bn awarded by the Stockholm arbitration in 2018.

The sum includes a \$2.6bn debt and fines accumulated thereafter, a spokesman for Gazprom said in a separate statement. "It is very important that these \$3bn in line with Stockholm arbitration will be paid in cash if we implement all the package of proposals before year-end," Orzhel said. At the same time Ukraine will withdraw its legal claims against the Russian company.

Last month, Naftogaz filed a lawsuit against Gazprom with a court of arbitration in Stockholm, asking to revise transit fees totalling more than \$12bn.

Gazprom and the Ukrainian government are also set to sign an "amicable agreement" on cancelling an antitrust claim that has reached about \$7.4bn, including fines. All the legal issues should be resolved by December 29, according to the protocol.

How cleaner ship fuel will raise costs, ease coughing



By Brian Wingfield/ London

Ship owners and refiners are facing the biggest change to their industries in a generation: strict environmental rules for vessel fuel that kick in on January 1, 2020. Technically, it's just a cap on sulphur content, but the repercussions are sweeping. Governments and companies across the globe have raced to prepare amid concerns about fuel shortages that could affect thousands of ships. Consumers, from cruise ships to truckers, will face higher prices. Some companies are already making a fortune. But the health benefits are expected to be substantial around the globe. If adopted widely – and enforcement is an open question – it may be the biggest single global change for air quality ever.

1. What are the new rules?

Fuel must have a maximum sulphur content of 0.5%, down from the current 3.5% limit in most cases. Known as IMO 2020, the regulation is set by the International Maritime Organization, a UN agency with responsibility for the safety and security of shipping as well as marine pollution by ships. Sulphur emissions are linked to acid rain and medical conditions such as asthma and heart disease.

2. Why does shipping cause pollution?

Because ships use heavy fuel oil – the gunk that's left over in the refining process once more valuable, less sulphurous products such as gasoline, diesel and jet fuel have been squeezed out of crude oil. Although IMO rules have progressively tightened sulphur limits since 2005, there's a long way to go: A Finnish study in 2016 estimated that air pollution from ships under current guidelines would contribute to more than 570,000 premature deaths worldwide between 2020 and 2025.

3. How are refiners affected by shipping rules?

Even though the rules apply specifically to ships, those vessels have to get their fuel from somewhere. Simply put, if

refiners can make more IMO-compliant fuel, they stand to make more money. Complex refiners, such as those on the US Gulf Coast, would benefit. So-called simple plants, which can't adjust as easily, could be at risk. Demand for so-called sweet (low sulphur) crude such as Brent is set to rise, at the expense of sour (high sulphur) crude produced mainly in the Middle East. Refiners' economics from making a range of fuels – from gasoline to jet fuel – are being upended.

4. Which fuel will shippers switch to?

As of now, they seem to be favouring a somewhat broad group of products called very-low sulphur ship fuel, or VLSFO. Another option is marine gasoil, a distillate-based fuel. For this reason, analysts expect distillate demand to increase when the rules take effect. However, no single, IMO-compliant benchmark fuel has emerged. The market is still evolving, and companies including Exxon Mobil Corp and Royal Dutch Shell Plc plan to offer a range of products. Shell has already made \$1bn from fuel oil trading this year.

5. Will there be enough compliant fuel?

It depends who you ask. In recent months, a flotilla of vessels storing compliant fuel has gathered near Singapore, the world's largest bunkering port. Shipping company Euronav NV has even filled a supertanker with oil to help it comply with the rules and sent it to the region – for a profit of \$52mn by one estimate. In other places, such as Gibraltar, there's been a back-up of vessels. Researcher EnSys Energy & Systems Inc – an early sceptic of fuel availability – thinks that even if there's enough compliant-fuel at the outset, stockpiles will wind down within months.

6. Do shippers have any other options?

Yes, they can install pollution-reducing scrubbers that can handle oil with a higher-sulphur content. But here's the thing: Fitting a scrubber can cost as much as \$6mn per ship. New orders for scrubbers have dwindled, and only 3,000 new

orders are expected to be installed by the end of the year, according to BloombergNEF. That means the vast majority of ships will need to switch to using more expensive, low-pollutant fuel.

7. How will these changes be enforced?

The IMO says it expects strict enforcement of the rules, and it's up to ports to make sure that happens. Some, such as Greece, have pledged strict adherence and potential sanctions for violators. Others, like Fujairah, the Middle East's main bunkering hub, are taking a much softer approach. In places like Denmark and Norway, drone aircraft are being used to sniff out those who run afoul of the IMO's mandate. Still, it's going to be tricky – about half of the IMO's members didn't sign up for the switch.

8. Who will suffer?

Potentially anyone who buys petroleum products – including cruise ships, trucking companies and automobile drivers. That's because the extra demand for cleaner fuel from shippers could mean refiners may produce lower quantities of products such as jet fuel and gasoline. Some shippers contend that the new rules have the potential to upend world trade, since the cost of compliance will be high for many.