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Editorial/A game changer in the White House

The Body Electric of America

The traditional geopolitical power of the United States, based on its dominance of the sea, land and air, can now also count on unprecedented domestic production of oil and gas--an energy revolution that shifts the geopolitical balance

Donald Trump is a revolutionary figure who, amid the real and apparent confusion of his politics, has upset the status quo. Giacomo Balla, "Costellazioni del genio," 1918, Milan, Museo del Novecento.

sing the body electric." While I was reviewing the drafts of this issue of WE, the first verse of a poem by the great American poet Walt Whitman kept playing in my mind, like a pop song refrain. All of the pages of WE are electric, they vibrate with energy, telling us what the future will bring. Unsurprisingly, this first issue of 2019 is dedicated to America, as we prepare for the great leap of the presidential elections in 2020. Donald Trump is on the horizon. No opponents are yet to be seen. They will come, voids in history are always filled. Meanwhile in the White House sits Trump, a revolutionary figure who, amid the real and apparent confusion of his politics, has upset the status quo, taking traditional ingredients and mixing them with Trumpism, upsetting the pieces on the chessboard and starting a new but old America First game. After meeting him, Sergio Marchionne, a visionary now sorely missed by the automotive industry, said: "He's a game changer." How right and how farsighted he was. Obama saved American cars from the Great Crisis of 2007-2008, Trump is trying to prevent the collapse of the American manufacturing industry. Deep down, they are more similar than you might think. The mission of an American president is to nourish that body, constantly rejuvenating it.

Tradition and scientific advances

"I sing the body electric." Whitman's verse keeps worming its way through my mind, and suddenly I remember a book by Ray Bradbury by the same title, an anthology of stories in which, using irony and paradox, the science fiction writer mixes the great themes of our technological society with the memories of provincial America, toying with the mysteries of family and machine, solving problems and complicating life. Technological transformation and scientific advances become the nail on which to hang a picture, presenting a vision you had never expected or seen before. This mixture of intimacy, psychological interpretation, technical evolution, biology and tradition is the playing field of today.

The main plot of this issue is power. Geopolitically, the U.S. is first of all a maritime power (in an age dominated by the virtual, one tends to forget how fundamental it is to control the seas), but also a power in space (the forgotten third dimension of the sky) and on land (the ability to project diplomacy and above all the infantry everywhere and quickly). These pillars create power in the classic sense.

Carl Schmitt's delightful book *Land and Sea* emerges here like a volcanic island, filled with metaphysical elements that lead man, the terrestrial being, to dominate all that is encompassed in the oceanic dimension. The "skimmers of the sea," first among them whale hunters, are the ones who possess this intimate essence. Unsurprisingly, the masterpiece of American literature is *Moby Dick*, the story of Captain Ahab's hunt for the White Whale, the story of an obsession, challenged by the immensity of the deep, mysterious and sensual ocean. The biblical tone of Herman Melville's novel emphasizes the power of the elements, nature, also the primary things that Whitman sings about: the "body electric" of America.

This body is above all historical (tradition is experience), this power feeds on energy, seeks it and, for the first time, sells it in competition with other countries for which until recently it was only the most important "customer." This is the new development in today's and tomorrow's scenario. That customer was (is) a partner and, in exchange for the energy, it provides (provided) technology and security, science and weapons. This exchange lasted for seventy years, then political and technological change became intertwined, caused a short circuit, technology leaped forward (not by very much in purely scientific terms, but by a lot in economic terms) and this exchange weakened. One part, America, no longer needed the other as much. Fracking fractured the ground and above all international relations. Thus the U.S. entered another "oceanic" dimension of its history, the ocean of American shale gas and oil, energy to consume and export. The future of this renewed power lies in the construction of networks—and security—to transport the energy produced all over the world. We are facing a major overturn in history. The U.S. has a potential dominance in the energy sector, but to make it solid and lasting it has to regain a terrestrial and maritime dimension (history echoes again). Terrestrial, by building infrastructure on its own soil (within the borders of the U.S.); maritime, by launching a fleet of ships that can cross the oceans faster than others (beyond the borders of the U.S.) and safely. Control of the liquid dimension is associated with that of the air, a system of satellites that can guide, signal and monitor.

U.S. shale changes international relations

The body electric releases energy, this expanding energy needs space, the U.S. is in conflict with other countries whose survival depends entirely on the raw material of energy. OPEC is the other player whose pulse and vibrations we need to keep measuring. Saudi Arabia and Russia are two poles of this galaxy. The Saudis are grappling with internal change and a struggle with other Middle Eastern countries, Russia is the permafrost titan and the fox in global diplomacy. Around them rotate other players worth keeping an eye on: Iran, with its flowering gardens and Shiites all over the world, Qatar and its gas, which has withdrawn from OPEC, the vibration of Oman, the hopes of Iraq and Libya, the promise of Algeria.

Price and transport, consumption and bilateral relations, a combination of the elements of power, are the Big Game being played in contemporary history. Sky, land, sea ... and fire. This last element is what changes the scene, energy. Its discovery, processing and transport are at the center of a furious battle and the U.S. continues to be the youngest power with the richest reserve of energy (once again history repeats itself).

Once the U.S. had decided to put its boots on the ground in Europe, the Second World War ended. Freedom was restored in Europe and the British Empire was no more. One maritime power was replaced by a new empire: America. A new maritime and terrestrial power had emerged: the United States. An age of deterrence started, the Cold War with Russia, but American dominance seemed unassailable. Then the pendulum of history swung and introduced us to an old acquaintance: the Celestial Empire, China. Ever since 2001—the year when Beijing joined the WTO—the American empire has watched the Dragon race ahead, continually wondering what to do about it. Donald Trump has dusted off an ever-present weapon in American policy: import tariffs. It's a story that began a long time ago, during the very first session of Congress in 1789, with the duties signed off by President Andrew Jackson in 1832 and so on through history. In all these comings and goings, as the hourglass of history fills and empties, seventy years after the war and peace of the twentieth century, here comes another conflict, this time economic and technological, and another empire has to protect itself and survive against the challenge of an ancient and remote but rejuvenated power. The British lost their empire, the Americans conquered it. Now they're trying to hold onto theirs.

The contradictions of freedom

The American Century is over, but the one that started in 2000 continues to see the U.S. as the main player, because the other players are either too small or lack freedom: the enzyme in every virtuous chemical reaction that takes place in human beings. The America of consumption, the Silicon Valley oligopoly, the Pentagon military complex, the creeping war between opposites, the unhappy masses, the "forgotten man," the armed hand, the mass nightmare of drugs, rich people who are too rich and poor people who are too poor, this contradiction of glaring lights, splendor and misery, remains the bulwark of freedom. In 1939, on his return to America after spending ten years in France, Henry Miller wrote a book called *The Air-Conditioned Nightmare*. One sentence from this book remains imprinted in my memory: "The blind leading the blind. It's the democratic system." The problem is that there isn't a better one. Beyond it is only a backward step in freedom.

This scenario of American immanence, of necessity and presence, is dominated by the subject of the environment, the most unpredictable and powerful, the most forgotten and underrated, the most exploited and least explained—an element of which man can only control a small part. The COP24 meeting in Poland revealed the weakness of today's leaderships in this respect. The division between advanced economies and those undergoing a full industrial revolution is a fact and, due to geopolitical asymmetries, the path to reducing greenhouse gases remains not only long, but increasingly arduous. The real decisive factor will be technology, and again the laboratories of the great American institutions provide hope. Perhaps we have more time—the modeling of the rise in the Earth's temperature and sea levels is constantly under review—but we certainly no longer have any alibi to at least do what is possible for us as humans. We can reduce emissions, not control solar cycles. But we must do it. The body electric lives on the Earth, our home.

Scenario/After uncertainty, it is now time for reconstruction

Halfway Point

At the end of the first two years of Donald Trump's term, it's time to review some major policy areas of his presidency, from relations with Saudi Arabia to disputes with China and OPEC over trade and oil

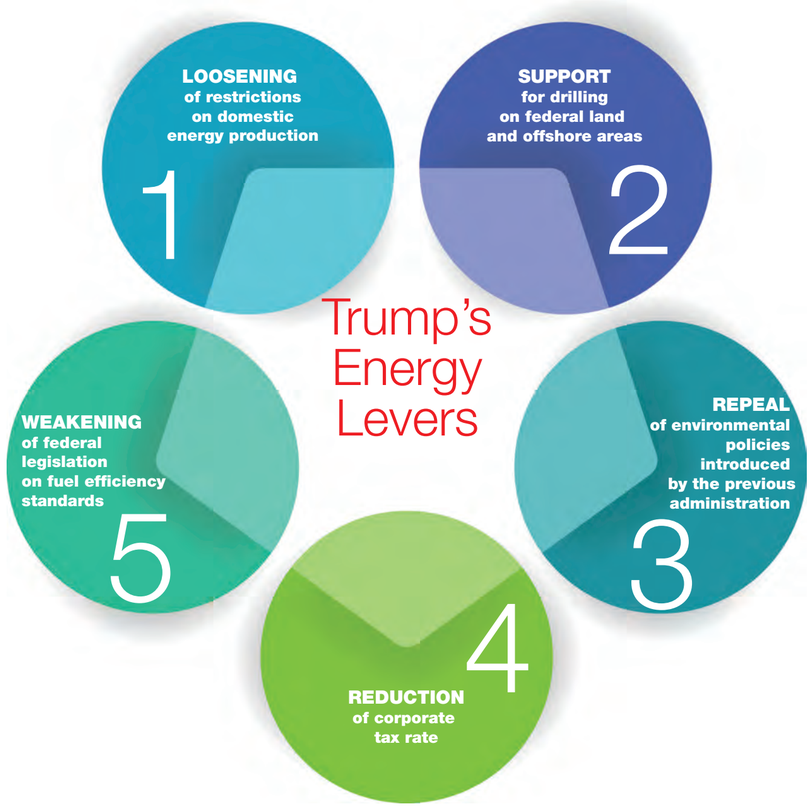
IAN BREMMER

President of Eurasia Group and GZERO Media, and author of the *New York Times* bestselling book, *Us vs. Them: The Failure of Globalism.*

ook past the incendiary tweets and controversial rhetoric, and you see a Donald Trump presidency that has already proven enormously consequential, both because of the person sitting in the Oval Office, and because of the geopolitical uncertainty of today's world. Trump assumed office just as the Pax Americana era of world history, one that largely coincided with the post-World War II era, was drawing to a close. It was inevitable that whoever followed Barack Obama as U.S. president would set the tone for the geopolitical era to come. So far, that tone has been one of increasing hostility, particularly between the U.S. and China, and across numerous fronts: trade, technology, and yes, even energy. As the Trump presidency nears the 2-year mark, it's time to consider some of Trump's biggest geopolitical successes and failures to date and to evaluate what that means for the world's energy future going forward.

Trump's nationalism creates global followers

Trump's critics believe the man can do no right while his fiercest supporters believe he can do no wrong. The reality, as always, lies some- →



where in the middle. Trump has broken decisively with his predecessors, Republican and Democrat alike, in their support of multilateralism and free trade as desirable ends unto themselves.

Trump's preference for striking one-on-one trade deals and holding the feet of traditional allies to the fire has resulted in some unquestionable short-term wins for the U.S., wringing concessions from stalwart allies like the E.U., South Korea and Brazil. Trump even managed to renegotiate the NAFTA trade deal with Canada and Mexico, a tough policy win for Washington even under the best of circumstances. Yet Trump's effect on the world goes far beyond striking trade deals more favorable to U.S. interests.

When Trump first came to power nearly a couple years ago, very few world leaders shared his nationalist outlook and nakedly-transactional approach to geopolitical relations. In less than 24 months, we have seen other leaders embrace "my country first" politics, both those we'd expect, countries like the Philippines, Turkey and Hungary, to those genuinely surprising, like Brazil and Italy.

The politics of resentment

The Trump presidency has made acceptable a type of identity politics that has been largely ignored since 1945. This is the politics of the aggrieved, a type of politics that's gaining momentum. Trump has played a critical role in its spread. But the Trump presidency has come with other significant costs to the U.S. as well. The general tenor of relations between the U.S. and its traditional key allies has deteriorated significantly, and it's unclear whether those frayed relations can be repaired, and, if so, to what degree. The Trump presidency has also been marked by knee-jerk policy decisions that have shown little long-term strategy backing them. Look at Trump's decision to pull out of the Paris Climate Agreement. The same goes for the Trans Pacific Partnership (TPP) trade deal, a behemoth free trade agreement that is set to go into effect this January, without the U.S. on board. Where it's harder for the rest of the world to trudge on absent the U.S., though, is in maintaining stable oil markets, both because the U.S. is a major energy player in its own right, and because its most significant foreign policy interests these days revolve around other major oil producers in the Middle East. For the time being, Trump has seemingly cast his lot with Saudi Crown Prince Mohammed bin Salman (MbS), maintaining that MbS's denials of any involvement in the affair of Washington Post columnist Jamal Khashoggi were credible despite the CIA's own assessment to the contrary. This support from Trump, while certainly welcomed in the Saudi Kingdom, complicates oil policy for the Saudis because Trump wants the Saudis to abandon their push for a coordinated OPEC production cut that's intended to prop up oil prices. The problem is that the Saudis do need higher oil prices ($70 Brent is the sweet spot) to ensure fiscal stability, which in turn undergirds the Kingdom's political and social stability. The fallout from the Khashoggi affair and the expected loss in foreign investment only makes it more critical for the Saudis to ensure a steady flow of oil revenues. When the Saudis decide to go ahead with production cuts, Trump won't be at all happy. But he'll likely bite his tongue given his other focus in the region, Iran.

A boon for oil producers

Trump needs both stability in global oil markets and a united front against Tehran, making Riyadh an indispensable partner in both those regards. But its far from clear that Washington turning the screws on Iran via oil sanctions will cause Iran's government to buckle under economic pressure and offer more concessions. If anything, its likelier to create more conflict in the region. Still, the Trump administration looks to press on with its Iran policy. The U.S. will lean on countries with waivers to cut back Iranian oil purchases. As of now, the market appears to be well supplied for next year, which is why OPEC+ is considering another round of production cuts. Meanwhile, Trump continues his push to loosen restriction on U.S. domestic energy production, to open up federal lands, including offshore, to drilling, to roll back Obama-era environmental policies, to reduce the corporate tax rate, and to weaken federal fuel economy standards, all of which are a boon to oil and gas companies. At the same time, Trump's trade agenda, with its focus on hitting China and steel imports, could slow global oil demand (more a China story) while at the same time making it more expensive for oil producers to build pipelines and needed infrastructure (more a steel story). Adding yet another wrinkle to the proceedings, plenty of U.S. states have shown a willingness to go their own way in setting their own climate and environmental policies in opposition to the Trump administration, including attempting to pass measures that would impact drilling. Thus, like Trump's approach to geopolitics, his approach to energy comes with both positives and negatives. Trump isn't going to change who he is at this point. In fact he may be the one point of predictability in our currently unpredictable world. It's up to energy producers to negotiate that as best they can.

International/First dismantle, then rebuild

The Policy of Rethinking

The White House has used retaliation as a tool to force trading partners and old allies to behave more reasonably, even violating the unwritten rule that the U.S. should not start a nuclear crisis on more than one front at a time

CHRISTIAN ROCCA

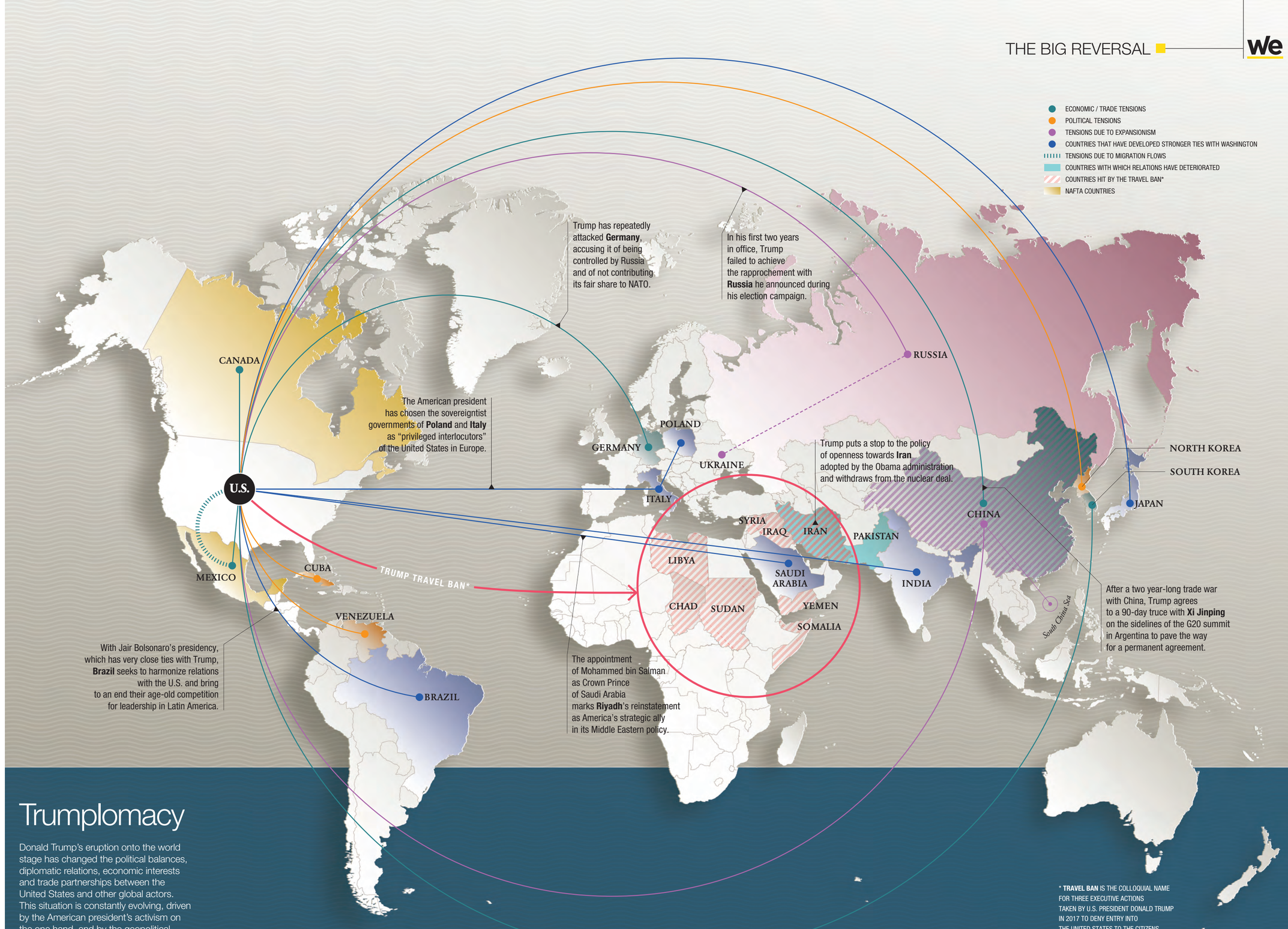
Columnist for La Stampa. Former editor of the magazine *IL - Idee e Lifestyle*, he has also been special correspondent and columnist for *il Sole 24 Ore* and U.S. correspondent for *Il Foglio*. Among his books: *Non si può tornare indietro - Cronache brillanti dall'Italia che cambia* (2015); *The Intelligence Lifestyle Magazine - Smart Editorial Design, Storytelling and Journalism* (2016).

he capacity to anticipate the geostrategic moves of Donald Trump's America is beyond any human or even artificial intelligence. All the more so now, as we are about to enter the second half of Trump's first term, the two-year period 2019-2021, with a new congress and a House of Representatives led by Nancy Pelosi's Democratic Party, which is not only unwilling to support his policy agenda but also looks set to keep the White House legal team and advisers busy with some ninety grueling investigations into the President's actions. America has suddenly become unpredictable, and the reason is that the Trump doctrine is Trump himself—Trump First, we might call it, albeit supported by the nationalist pillar of America First—and his aim is to restore America's lost greatness, in other words to Make America Great Again. One day the U.S. President declares a trade war on China, the next day he signs a truce; first he tears down the North American Free Trade Agreement (NAFTA), and then he →

drafts a new, almost identical one with a different name, USMECA; he re-imposes sanctions on Iran, but then grants waivers to allied nations that have trading links with Teheran. In every area where American geopolitical interests are involved, from North Korea to the politically sensitive issue of his relations with Vladimir Putin's Russia, confusion reigns. The only constant, at least at the time of writing, seems to be the solid alliance with Saudi Arabia, America's longstanding strategic bastion. After Barack Obama's attempt to shift the American-Saudi axis in the direction of Iran, Trump has returned to a more traditional security and energy policy. But this is where certainty ends. Trump is trying to build a new world order—although it seems more like a world disorder—the outlines and consequences of which are as yet unclear.

A world in search of alternative models

The world we know was established seventy years ago based on America's strategic insight that the most effective way to lead the world and secure social progress was by guaranteeing the free movement of persons, goods and ideas, and by spreading democracy. After 1989, that world extended to Eastern Europe and Asia, albeit with some limitations, and even made some tentative inroads into Africa, bringing shared well-being and improving the living standards for several billion people. Today, this model is facing a crisis, as it is not necessarily well suited to dealing with the far-reaching transformations of the global economy caused by the digital age and the growth of China. Trump might actually be the symptom rather than the cause of the problem. Whether or not he is the cure is too early to say. Be that as it may, while there are still no alternative models to the current system, Trump is proceeding to tear down the structure of relations, alliances and multilateral institutions that constitute the underpinnings of the world that emerged in the aftermath of WWII. Because he believes that structure is not useful for serving the principle of America First, he has embarked on a series of actions that include treating the G7 with contempt, tearing down the World Trade Organization (WTO), declaring trade wars against longstanding partners, engaging adversaries in dangerous conflicts, fueling tensions in the Middle East, from the Qatar issue to the question of Jerusalem, and even initiating two nuclear crises simultaneously, thereby violating one of the golden rules of American foreign policy which holds that the U.S. should not start a nuclear crisis on more than one front at a time. Trump's iconoclastic →



Trumplomacy

Donald Trump's eruption onto the world stage has changed the political balances, diplomatic relations, economic interests and trade partnerships between the United States and other global actors. This situation is constantly evolving, driven by the American president's activism on the one hand, and by the geopolitical upheavals characterizing this historical period on the other. The map shows the current trends.

* **TRAVEL BAN** IS THE COLLOQUIAL NAME FOR THREE EXECUTIVE ACTIONS TAKEN BY U.S. PRESIDENT DONALD TRUMP IN 2017 TO DENY ENTRY INTO THE UNITED STATES TO THE CITIZENS OF CERTAIN PREDOMINANTLY MUSLIM COUNTRIES.

THE ECONOMIC BOOST
For the time being, President Trump can count on an expanding economy, though the stock market, which initially rallied after tax cuts, has lately proven more volatile.

fury has shattered this cornerstone of America's national security, first by withdrawing unilaterally from the nuclear deal with Iran and then by meeting with the North Korean dictator Kim Jong-un, from whom he seems not to have obtained any more in return than what had already been formally agreed in 1990, with meager results. Trump is convinced he is a genius deal-maker, as he wrote in his book *The Art of the Deal*, i.e., the art of making deals that are actually good deals. He believes that the deal signed by President Obama and European leaders with the Iranian regime is very bad and that he can achieve a better one by using economic sanctions as a stick. This is more of an adolescent reflex action than a coherent doctrine, and its consequences on the world we live in are still unknown.

The impact of Trump's choices on global trade

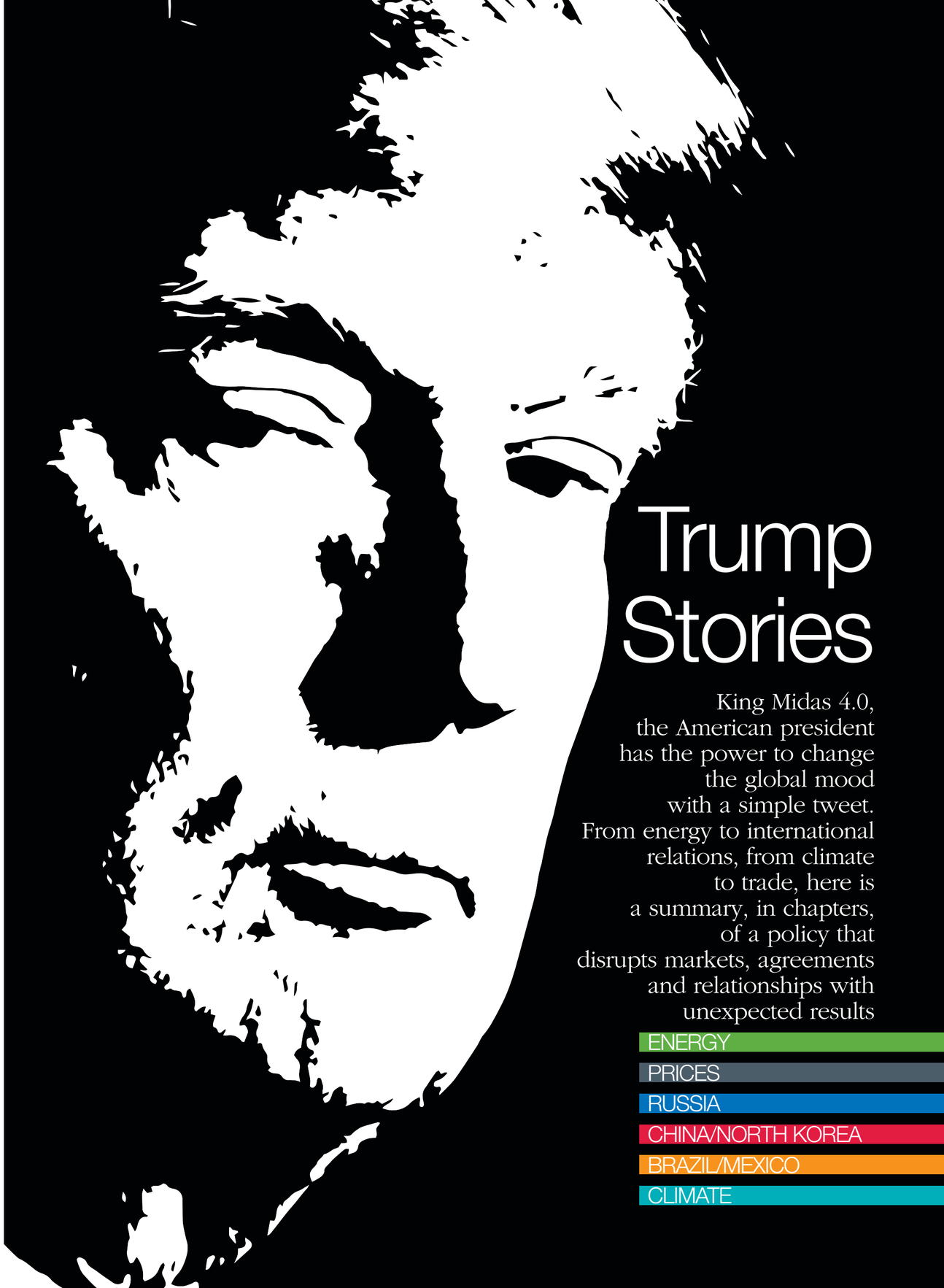
The issue of global trade is even more emblematic of Trump's way of handling international issues, and potentially the one that will have the greatest impact. At the June 2018 G7 summit held in Canada, Trump initiated four trade wars simultaneously: one against China over America's trade deficit, one against Mexico and Canada over the North American Free Trade Agreement (NAFTA), one against Europe and the rest of the world over tariffs, and one against the World Trade Organization over the rules of international trade. A few months earlier he had also withdrawn from the trade agreement with eleven Pacific countries, all of which are now ready to consider what China has to offer. Six months later, before and during the Buenos Aires G20 summit, he signed a new version of NAFTA, as Canadian Prime Minister Justin Trudeau defined it, and negotiated a trade truce with Chinese President Xi Jinping. This is Trump's classic business model, upping the stakes and threatening "fire and fury" from a dominant position, to cite his words with reference to North Korea, and then getting the most he can, almost a surrender, from a deal with his adversaries. But the rules of geopolitics are not the same as those governing the real estate business and, we might add, even during Trump's real estate years, his business ventures were not always brilliant successes.

Geopolitical payback for China and Russia

Trump's emotionally-driven policies are threatening to subvert the system of which, right up to his presidency, Washington was the guarantor and main beneficiary, along with its allies. The paradox is that those who stand to gain the most from this change in approach are not the United States, with companies like General Motors announcing layoffs and delocalization decisions, or the American consumer, who will see the price of many goods rising as a result of the protectionist backlash, but Russia led by Vladimir Putin and China led by Xi Jinping, the two chief adversaries of the United States and the main challengers of the post-WWII global order. Putin is reaping the benefits of his successful strategic campaign to divide the West and fuel global chaos, as he awaits the outcome expected in the coming months of the investigation conducted in Washington by Special Counsel Robert Mueller and the House Committee to determine the extent of the Trump team's involvement in putting into action the Kremlin's plan. As Barack Obama's National Security Adviser Susan Rice suggested, there is no evidence that Putin is dictating America's policy agenda, or that he did so in the past, but if that were the case it would be hard to imagine a better result for the Russian leader. China, for its part, is attempting to fill the political and trade vacuum left by Trump, and is actively courting Europe, first and foremost, but also Japan and other Asian nations. The President has still to roll out his grand plan to rebuild America's infrastructure, which is currently below standard for a superpower like the United States but which, with the new Democratic majority in the House, could be put back on track. In contrast, Beijing is financing the new analog and digital Silk Road. This project, involving the construction of highways, bridges, high speed trains and a fiber optic cable network for internet connectivity, built with 5G technology, will boost links between Chinese-led Asia and Western Europe and Africa. Obama made his own contribution to China's growing power by allowing Beijing to build new artificial islands in the Pacific that have become Chinese military outposts in waters where the American Navy has been protecting sea routes for over fifty years. There is a risk that in decades to come, control of trade will shift from the Americans to the Chinese, particularly when it come to digital communications, and it is not the same to have the rules of engagement dictated by Beijing's authoritarian regime rather than the world's greatest democracy. Clearly, there is still the possibility that all these tensions will be resolved, on the economic, political and nuclear front, but as each day goes by, it seems increasingly unlikely that Trump will backtrack, or that the European and Asian allies will continue to put up with the President's erratic behavior, or that China and Russia will decide not to take advantage of the global chaos that they have partly contributed to but which Trump has handed to them on a plate. All the more so since Trump is going to be kept busy by the Democrats and various investigations, defending himself against accusations of collusion with the Russians and the use his institutional position to bolster his personal business.

A booming economy and the energy driver

Trump can rely on a thriving economy and a stock market boosted by his tax cuts. He also claims that the global order works to the disadvantage of the United States, knowing all too well that American voters like this kind of message as they struggle to cope with the delocalization of factories and technological innovation. The President thus still enjoys support even after the poor midterm results, an indication that Trump's election was not an accident of history. The measure of America's troubles, according to Trump, is the balance of trade. If America imports more goods than it exports, that is unacceptable: the balance has to be restored and there needs to be reciprocity. Most economists, however, believe that the trade deficit is a misleading indicator of whether or not trade deals are beneficial to the countries that sign them, partly because the gap between imports and exports is determined by macroeconomic factors rather than by trade policies. Moreover, Trump's calculation of America's trade deficit, which stands at USD 800 billion, only takes into account goods and not services, including financial services, in which the United States runs a surplus.
Finally, there is the difficult issue of energy. The Trump Administration is seen as being very close to the energy industry based on a series of policies, including favoring exploration and drilling, doing away with environmental regulations imposed by Obama on automakers, supporting infrastructure development, including oil and gas pipeline projects, and withdrawing from the Paris climate agreement. But that is not exactly how it is: Trump's policy favors consumers. Via Twitter, Trump has put a great deal of effort into keeping oil prices low, probably winning political support from Saudi Arabia as a result and taking the credit for the reduction. This is despite the fact that low prices are damaging to the American shale gas industry, whose costs are higher and which, in order to be economically sustainable, needs higher final prices. Ultimately, Trump is unpredictable on everything, including energy issues. Whether this is a good thing or not, we can only wait and see.



Trump Stories

King Midas 4.0, the American president has the power to change the global mood with a simple tweet. From energy to international relations, from climate to trade, here is a summary, in chapters, of a policy that disrupts markets, agreements and relationships with unexpected results

ENERGY
PRICES
RUSSIA
CHINA/NORTH KOREA
BRAZIL/MEXICO
CLIMATE

1940 - Energy Dominance

The U.S. produces more than 60% of the world's oil. Japan and Germany depend on U.S. crude imports for their economic and military needs. The U.S. ability to fuel its allies and restrict its enemies access to fuel is a decisive factor in World War II.

2015 - Energy Abundance

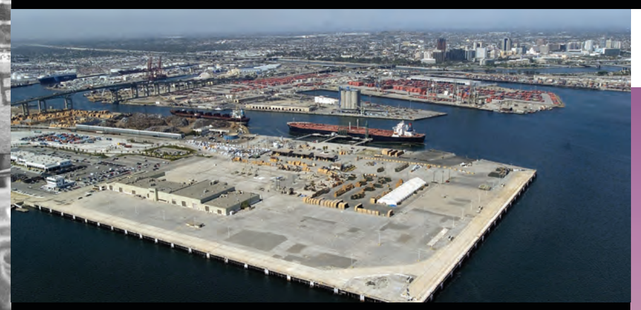
President Barack Obama signs a law revoking the 40-year ban on U.S. oil exports.

2017 - Energy Security Strategy

Trump outlines the guidelines for his agenda on energy leadership. The paper highlights "America's central position in the global energy system as a leading producer, consumer and innovator."

1970 - Energy Weakness

The U.S. is still the leading producer of petroleum, but instead of continuing to export, it now increases imports as a result of the constant decline in its output. Energy leadership is now just a memory.



2000 - Energy Impotence

Domestic American oil production continues to decrease and imports increase. At the same time, gas imports also grow, with LNG terminals built along the seaboards. In 2005 the U.S. imports 30% of its energy requirements.

2008 - Energy Revolution

Technological innovations, especially fracking and directional drilling, make oil and gas extraction from shale deposits in Texas, Pennsylvania and North Dakota economically realistic. Domestic American production increases and imports begin to fall. Energy independence is no longer a pipe dream.

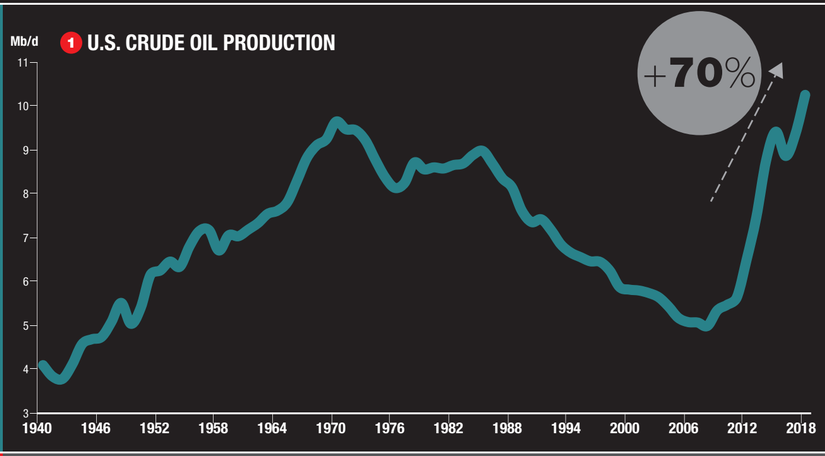
1940-2020: U.S. Dreams of Regaining Supremacy

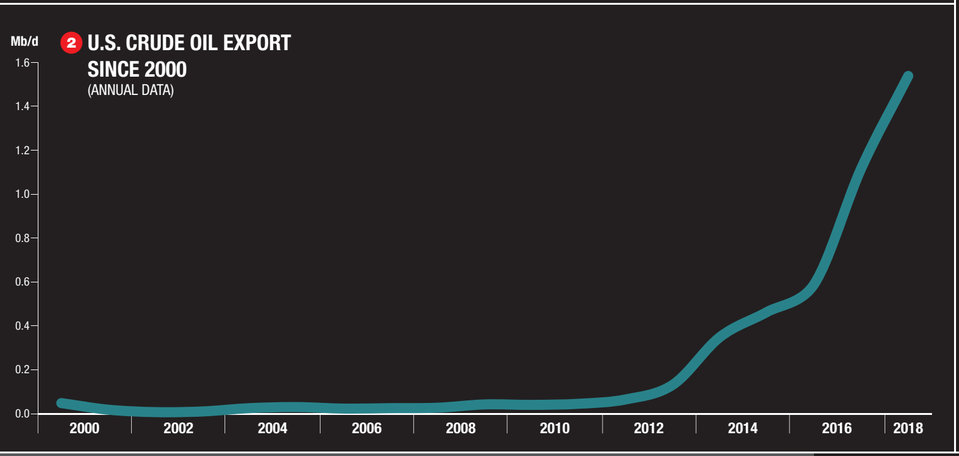
2020 - Energy Dominance?

The United States is now a net exporter of natural gas. By 2020, it will be the world number three in LNG exports, and regain leadership of global oil production. According to many experts, it will be energy self-sufficient by the early 2020s.

Source: Eni

CRUDE OIL



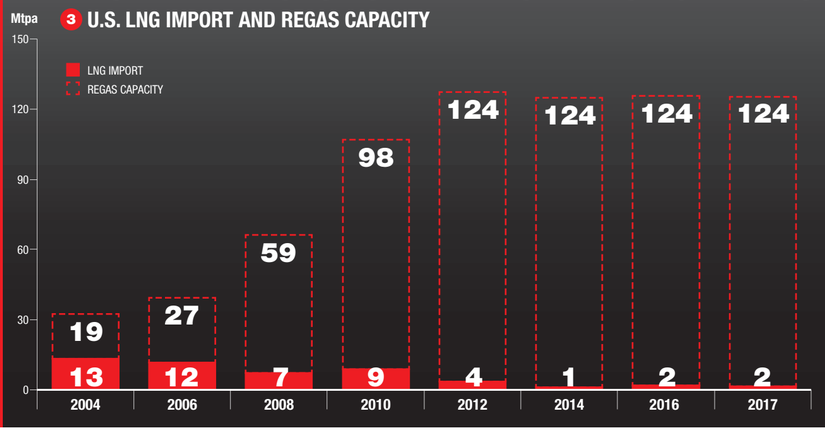


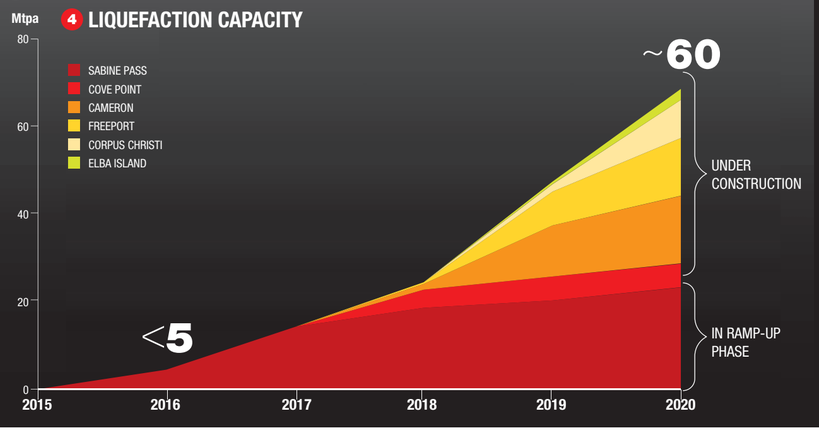
From importer to exporter

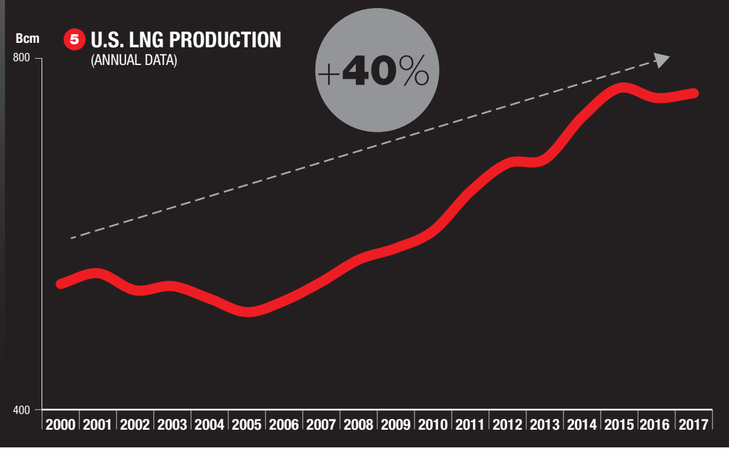
Thanks to the shale revolution, in recent years the U.S. has steadily increased oil and gas production (figures 1 and 5), transforming the country from a net importer to an exporter (2). Since 2010, LNG imports to the U.S. have plummeted and the country's huge regasification capacity has for the most part remained unused (3); conversely, the U.S. has considerably expanded its liquefying capacity, which has grown in a short time (between 2015 and 2018) from less than 5 million metric tons per annum (MTPA) to over 20 MTPA. In 2020, this capacity will reach 60 MTPA.

NATURAL GAS

THE SHALE REVOLUTION AND ITS IMPACT ON THE U.S. MARKET







The impact of Trump's policies on oil & gas production

The Energy Dominance Agenda: Myth Vs. Reality

The U.S. is in the process of regaining world leadership in energy, although this cannot be attributed to the policies of the current administration. In fact, the growth of hydrocarbon exports could be jeopardized by the president's aggressive approach

DOUGLAS HENGEL

He is a former U.S. diplomat who worked on global energy issues. He lectures at the Johns Hopkins School of Advanced International Studies and he is a Senior Fellow at The German Marshall Fund. During his diplomatic career, he was Deputy Chief of Mission at the U.S. Embassy in Rome from 2010 – 2013.

At the start of World War II, the United States was producing over 60 percent of the world's oil. Japan and Germany depended on oil imports from the U.S. for their militaries and economies, and America's ability to supply its allies with oil and limit Japanese and Germans access to the fuel was critical to victory in the war. That was energy dominance.

Jump ahead 30 years to the early 1970s. The U.S. was still the world's largest oil producer, but its output was declining and the U.S. was no longer an oil supplier to the world. Its petroleum imports were rising. U.S. energy dominance was history, and the Arab Oil Embargo of 1973/74 was a massive shock to the U.S. psyche and economy. Energy dominance had become energy weakness.

All American presidents from that point forward pledged allegiance to "Energy Independence" and eliminating U.S. dependence on energy imports from unstable regions of the world like the Middle East. Various programs were enacted over the years to reduce oil demand and increase production, including that of alternative fuels.

However, domestic oil production continued to decline and petroleum imports to rise through the middle of the first decade of the 2000s. Meanwhile, U.S. natural gas imports were also rising strongly and large liquefied natural gas (LNG) terminals were being constructed along the coasts to import LNG from Qatar and other gas exporters.

The U.S. energy security situation seemed dire and our growing import dependence fed a narrative of an America in decline.

In 2005, the U.S. imported more than 30 percent of its total energy needs, the highest amount ever. Energy weakness had transformed into near impotence.

Technology breakthroughs in oil and gas production, especially hydraulic fracking and horizontal drilling, changed that trajectory. Beginning just over ten years ago, production of natural gas from shale formations in Texas, Pennsylvania and elsewhere began to surge, followed a few years later by sharp increases in petroleum supply from tight oil deposits in North Dakota and Texas. Combined with restrained demand from efficiency measures and tougher vehicle fuel use standards, U.S. energy imports declined and some dared hope that the holy grail of energy independence might be attained.

Enter Donald Trump

Therefore, when presidential candidate Donald Trump entered the scene in 2015, the domestic energy situation was much improved and with it the strategic position of the United States. Policymakers in Wash- →

TOP PRODUCER
America is again the top global oil producer and likely to meet well over half of increased global demand both in 2018 and in 2019. In the picture, a field of 14 storage tanks that each hold 510,000bbls of oil at the Trans-Alaska Pipeline Marine Terminal in Valdez, Alaska.

ington were discussing how to leverage our newfound energy abundance to support U.S. foreign policy and national security goals. Companies that built facilities to import LNG now wanted to switch them to export abundant, cheap natural gas. The geopolitics of energy was shifting as countries that had been major energy exporters to the United States sought markets elsewhere. Our energy mojo was returning.

The shift from energy vulnerability to abundance occurred primarily under President Obama. While he may be better known for efforts to combat climate change, including the Clean Power Plan to reduce power sector emissions, stopping the Keystone XL pipeline intended to bring more Canadian tar-sands oil to the U.S., and toughening rules on methane emissions, Obama was also supportive of domestic oil and gas development. He signed legislation to end the ban on U.S. crude oil exports that dated to the 1970s, and his administration simplified the approval process to export LNG. More onshore and offshore areas were opened for drilling, including in the Arctic. Following BP's Deepwater Horizon disaster in the Gulf of Mexico, stronger safety measures were adopted, but Obama did not seek to severely restrict offshore drilling activity. Renewable energies were also strongly supported under an "all-of-the-above" energy strategy. Obama left a strong framework supportive of most domestic energy production, including the hydrocarbons sector.

Nevertheless, candidate Trump accused President Obama of blocking domestic production of oil and gas. In May 2016, he promised to develop an "America First" energy plan and declare "energy dominance" a strategic economic and foreign policy goal of the country.

While not defining what he meant by energy dominance, Trump said his proposals to overturn regulations and withdraw from the Paris Climate Agreement were aimed at increasing U.S. fossil fuel production so the country could "become, and stay, totally independent of any need to import energy from the OPEC cartel or any nations hostile to our interests." Ending the Obama Administration's purported "war on coal" was a key element of this agenda. In addition to furthering energy security, Trump spoke of creating trillions in new wealth and millions of new jobs through unleashing America's energy potential.

A return to dominance?

Following his first reference to energy dominance, Trump did not use the term in a policy-oriented way again until June 2017 during his administration's Energy Week. At that time he spoke of more steps to boost U.S. fossil fuel production and exports, while adding the goal of reviving and expanding nuclear power. Senior Administration officials wrote that energy dominance described "a self-reliant and secure nation, free from the geopolitical turmoil of other nations that seek to use energy as an economic weapon." It also meant enhanced U.S. leadership and influence and sharing our energy wealth through exports.

The President's National Security Strategy of December 2017 lays out the most comprehensive overview of the energy dominance agenda. The document highlights "America's central position in the global energy system as a leading producer, consumer and innovator" and declares the United States "will help our allies and partners become more resilient against those that use energy to coerce." The global energy order was to pivot away from OPEC and Russia back to the United States where it belonged.

To this end, the Administration defined its priority actions to include reducing energy development barriers, promoting exports, protecting energy infrastructure, attaining universal energy access and furthering America's technological edge. Climate is mentioned defensively—U.S. leadership on climate is required to counter "an anti-growth energy agenda that is detrimental to U.S. economic and energy security interests." The energy dominance agenda sounds very much like the old energy independence agenda plus exports.

Judging the energy dominance agenda

So how has the Trump administration done in realizing its energy goals? Leaving aside whether "dominance" has been achieved (whatever that may be, it will not look like the pre-World War II period), the President has followed through on his pledges. More federal lands and offshore areas are being opened up to energy production, many environmental regulations are being eliminated, Obama's Clean Power Plan is being replaced, the U.S. is exiting the Paris Climate Agreement and some energy infrastructure projects stopped under the Obama Administration have been green-lighted.

Oil and gas production continues to soar. The United States, which passed Russia to become the largest producer of natural gas in 2009, is now a net natural gas exporter and by 2020 will be the third largest exporter of LNG in the world—and perhaps the largest by the mid-2020s.

America is again the top global oil producer and likely to meet well over half of increased global demand both this year and next, putting great pressure on OPEC and Russia to re- →

STOP TO SUBSIDES

The Trump administration has announced that in 2020 or 2021 it will cut incentives for the purchase of electric vehicles and for renewable energy sources. Today, those who buy a plug-in electric vehicle can count on subsidies ranging from 2,500 to 7,500 dollars.

duce their output to balance the market. Many forecasters expect the United States to be self-sufficient in oil by the early 2020s. This will not make the United States immune to volatility in oil prices, but perhaps the United States is on the verge of becoming the dominant energy power again.

How much of this primacy, however, can be attributed to the Trump Administration? It is hard to argue that any of the steps taken in the two years of his presidency—including tax relief under the 2017 Tax Cuts and Jobs Act—have had much of an impact on U.S. energy production so far, although they might in the future. Many of the regulatory relief measures announced by the Administration have been halted by court challenges, and others must go through a lengthy legal process before they become effective. Efforts to roll back vehicle fuel efficiency standards could damage the energy dominance agenda by leading to greater fuel consumption at home and therefore less to export.

The Trump Administration's efforts to assist the coal and nuclear industries have so far fallen short. Proposals by Energy Secretary Perry to favor coal and nuclear power to ensure electricity security were rejected by regulators. Nuclear reactors and coal-fired power plants continue to close, victims of plentiful, low-cost natural gas and increasingly cheap solar and wind power. U.S. coal consumption is at its lowest level since 1979 and falling.

The persistent growth of U.S. oil and gas output is mainly driven by favorable economic and market conditions. One can argue that the economic policies pursued by the Trump Administration have spurred economic growth and therefore also the energy industry, but they have not improved the situation much over the trends under the Obama Administration. At the same time the Trump Administration's trade agenda could present a speed bump, or worse, for the U.S. and global economy with a knock on negative impact on the U.S. energy resurgence.

For example, Trump's tariffs on steel and aluminum imports and import quotas are detrimental to the energy dominance agenda.

These tariffs significantly raise costs for pipelines, LNG terminals and other energy infrastructure. Some critical steel components are not made in the U.S., so import quotas could cause significant delays to projects as well.

The threat of the trade agenda

U.S. energy exports and supremacy also are threatened by tariffs or other restrictions from trading partners. With China soon to replace Japan as the largest LNG importer, long-term contracts with Chinese natural gas importers and Chinese direct investments could be critical to U.S. LNG projects reaching final investment decisions. China can use this as leverage in trade discussions with the U.S. Threats emanating from Washington to China and other trading partners could spur more purchases of U.S. energy, but they could also raise the perceived risk of relying on imports from the U.S. So over the longer term a positive impact on the U.S. energy outlook from regulatory and tax relief could be offset by political and market uncertainty from trade tensions.

On the diplomatic front, President Trump has gone full-in on asserting U.S. dominance, while demonstrating clearly why U.S. energy preeminence has not been reached. His tweets addressed to Saudi Arabia and OPEC to increase production appear to have had the desired effect earlier this year. At the same time, though, the fact that he did this underlines that the U.S. is not anywhere near energy dominance, that only the Saudis and a few others in OPEC control spare production capacity that can quickly make a difference in market balances and drive prices. Thus these countries have the real power in oil markets. The dominance asserted by President Trump with his orders to OPEC is more of a geopolitical one based on U.S. military and other strengths and aligned interests (e.g., combatting Iranian influence) than producing the desired effect on oil production and prices thanks to U.S. energy supremacy. If we were preeminent, we would not need the Saudis or OPEC. President Trump also does not control the U.S. oil and gas industry, unlike Russian President Putin, who can direct Russian companies, and the Saudi King, who has the final word over the activities of the country's national oil company, Aramco.

One risk to President Trump's energy dominance program is the wholesale rollback of environmental and safety regulations, even rules that many energy companies support. Steps the Trump Administration is proposing or undertaking to relax rules should be analyzed carefully lest they negatively impact the industry's social license to operate and thereby actually undermine energy production. A clear defect in this agenda is that it focuses solely on increasing domestic energy production, even if it is not clear he can do much to make that happen beyond what market forces and technological progress are already doing. Jettisoning U.S. leadership on climate and clean energy threatens to undermine America's future energy strength. China dominates the solar photovoltaic and wind turbine industries and has the clear goal of controlling the battery and electric vehicle markets. Meanwhile the Trump Administration talks about ending subsidies for electric vehicles and renewables. Does the United States want to depend on China for the critical energy technologies of the future like we now depend on OPEC? If we really seek to be dominant, we need to lead in clean energy as well. In sum, the United States has risen in a little over ten years from an energy insecure superpower to the top of the energy standings. Dominance may be beyond our grasp, but energy is again a strategic asset for America. Staying at this level of superiority, however, requires a broader perspective and focus than simply increasing the production of fossil fuels.

President Trump, visiting the Andeavor refinery in Mandan, North Dakota, explains his tax reform to energy workers.

Without allies, Trump's strategy won't work

A Slogan is Not a Policy

Efforts to put America First tend to spark episodes of economic isolationism and hamper trade cooperation. U.S. Energy Dominance works better as a slogan than a policy

MOISÉS NAÍM

He is a distinguished Fellow at the Carnegie Endowment for International Peace, in Washington, D.C. and a founding member of *WE*'s editorial board. His most recent book is *The End of Power.*

In December 2017, the Trump administration released its National Security Strategy. It predicted that "For the first time in generations, the United States will be an energy-dominant nation." The Strategy document outlined five priority actions needed to attain this objective: 1. Reducing Barriers to Energy Production by promoting clean and safe energy resources, while limiting regulatory burdens that encumber energy production and constrain economic growth; 2. Promoting Exports of energy resources, technologies, and services, helping allies and partners to diversify their energy sources and bringing economic gains to the U.S.; 3. Ensuring Energy Security by working with allies and partners to protect global energy infrastructure from cyber and physical threats; 4. Attaining universal energy access to affordable, reliable energy, including highly efficient fossil fuels and nuclear and renewable energy in order to reduce poverty, foster economic growth, and promote prosperity and 5. Fur- →

thering America's technological edge through nuclear technology, next-generation nuclear reactors, better batteries, advanced computing, and carbon-capture technologies while continuing to lead in innovative and efficient energy technologies."

This new policy seeks to complement two traditional goals of America's energy policy: security of supply and independence from foreign sources. The goal is no longer just to make the U.S. more energy secure and independent but also energy dominant. This aim is, of course, aligned with President Trump's overarching "Make America Great Again" theme.

How realistic is this objective? In recent years, new technologies have propelled the U.S. to the status of energy super-power. It now rivals and often surpasses the production of the traditional hydrocarbon behemoths, Saudi Arabia and Russia, and has become one of the world's top exporters.

It is only natural that the successful performance of recent years would nurture the United States' ambition to be one of the world's energy leaders. Once energy security and independence were no longer aspirational goals but concrete realities, wanting more seemed the logical next step. And "more" means the ability to determine the trends of global energy markets and perhaps become the world's price setter and production sheriff.

Surely this is an alluring possibility for American policy makers, and even more so for politicians. Under closer scrutiny, however the global dominance vision proves to be more problematic as a policy than it is as a slogan.

The dominated will resist dominance

In September 2017, the U.S. Secretary of the Interior Ryan Zinke stated "Under President Trump, we will put America first, and we will put America's energy first." He saw no conflict between the two policies. But as many analysts have noted, America First may lead to America Alone, for energy dominance may be impossible to achieve without the active support of foreign allies. Few industries are more global in nature than the energy industry. Its structure, organization and functioning do not mix well with protectionism, isolationism or America Alone.

The goal of making the U.S. the planet's energy hegemon is presented by the Trump administration as a low-cost and largely friction-free policy that doesn't need external support or foreign allies. It assumes that other nations, consumers and competitors, technology suppliers and energy companies will accept without a fight the new energy order imposed by Washington. Or that the cost of these frictions is small and worth paying if this leads to a world whose energy markets are dominated by the U.S. The validity of these assumptions is questionable.

For example, the recent strains between the U.S. and Europe on trade and military cooperation are largely byproducts of the America First policy. These strains could prove a deterrent to the expansion of U.S. energy exports to the European energy markets. The recent and partly successful oil and gas forays that the U.S. has made into European nations have already triggered a reaction from Russia, a formidable competitor to the U.S. in the energy markets of Europe and Asia. Kremlin spokesman Dmitry Peskov has called these attempts by the U.S. "unfair competition" and vowed to fight them. Although American oil and gas exports to Europe will certainly allow European nations to reduce their significant dependence on Russian fossil fuels, they are unlikely to replace the oil and gas infrastructure already in place linking Europe and Russia. Other large energy producers will not be passive observers of America's attempts at cornering this critical industry.

U.S. actions related to putting America First tend to spark episodes of economic isolationism and hamper trade cooperation, and this could become a formidable obstacle to the expansion of U.S. oil and gas exports, a fundamental requisite for the proposed energy dominance. As Bethany McLean the author of *Saudi America: The Truth about Fracking and How It's Changing the World* has noted, the U.S. needs to keep harmonious relations with the outside world. She writes "In a world where over 40 percent of the S&P 500's revenues come from outside the U.S., the American economy is dependent on the global economy."

Energy Dominance depends on fracking

U.S. proven oil reserves, at some 50 billion barrels, would last about 10 years at the current rate of production. However, shale oil resources that are yet undeveloped are very significant and could sustain large production levels for decades, thus allowing the U.S. to seek a dominant role in these markets. Therefore, resources are not the problem. Economics is.

In contrast to the state controlled production decisions of OPEC countries, U.S. oil production is driven by private companies, whose decisions on production levels and prices are more likely to reflect purely economic calculations. The continuous increase in oil production required to make the U.S. the dominant player cannot be guaranteed. In Saudi America McLean details the multiplicity of economic and geological factors that could limit the dramatic expansion of shale oil production needed to support a policy of Energy Dominance. These limitations include the rapid decline in production typical of shale oil producing wells and the significant capital resources required to support expansion.

Moreover, other nations also have significant reserves of shale oil and gas and they too could boost their production and add to downward pressures on prices, and U.S. energy dominance may need high prices to sustain enormous levels of shale oil and gas production. High prices are difficult to sustain with booming production levels.

America's Energy Dominance is bad for the environment

The March 2017 executive order of the U.S. president on the Promotion of Energy Independence and Economic Growth revoked most of the provisions that previous administrations had enacted to deal with global warming and the impacts of climate change, as well as the regulations concerning carbon emissions standards. It also rescinded the 2013 Climate Action Plan and the 2014 Strategy to Reduce Methane emissions. The new presidential document also ordered an immediate review of all Environmental Protection Agency actions that "potentially burden the development of domestic energy resources, particularly coal, oil, nuclear and natural gas resources." These decisions, together with the withdrawal of the U.S. from the 2015 Paris Accord, signaled a total reversal of the U.S. government's previous acknowledgment of global warming as a major threat to the planet. It also affirmed the decision to expand production of contaminant fossil fuels such as coal and oil.

These decisions have placed the U.S. in a collision course with most other countries, which are both more "green" and the intended clients of a major export drive of coal, oil and gas by the new U.S. administration. As the global environmental crisis becomes more acute, the pressure will build for the U.S. government to water-down or even abandon these carbon-intensive energy dominance aspirations.

An infrastructure designed for energy interdependence, not dominance

Although the U.S is already the world's leading oil producer, at some 11 million barrels per day (mbpd), the country still depends on net imports of about 4 mbpd, mostly from Canada, Mexico and Saudi Arabia. For geographical and logistical reasons the U.S. also exchanges about 2 mbpd with neighboring Canada and Mexico. This has been going on for decades and as a result a massive and complex logistical and distribution infrastructure has developed that tightly intertwines companies located in these different nations.

Energy dominance will require a different kind of infrastructure. The still significant size of U.S. net energy imports and the necessary energy interchanges with its neighbors create a situation of energy interdependence unlikely to be easily or substantially revamped in the foreseeable future.

Today's industry is fragmented and hard to monopolize

The current global energy picture shows an abundance of exportable energy resources in the hands of both the traditional OPEC oil-producing nations and an array of new actors. No less than 20 countries in Africa, Latin America, the Middle East and Asia, both OPEC and non-OPEC members, already export volumes of 500,000 barrels per day or more. They all have long-term, solid commercial relations with some of the most important energy consumers such as China, Germany, India, Japan and South Korea.

The world of the "Seven Sisters," the large, vertically-integrated oil "majors" that controlled all aspects of the global hydrocarbon industry is long gone. It has been replaced by a global, complex and rowdy ecosystem that includes all kinds of new players–from independent oil companies, to agile fracking players and from fast-moving traders, private equity firms and hedge funds to companies that manufacture wind and solar systems or large scale batteries. Making them play by a single script mandated by Washington is going to be a very hard, if not impossible, undertaking.

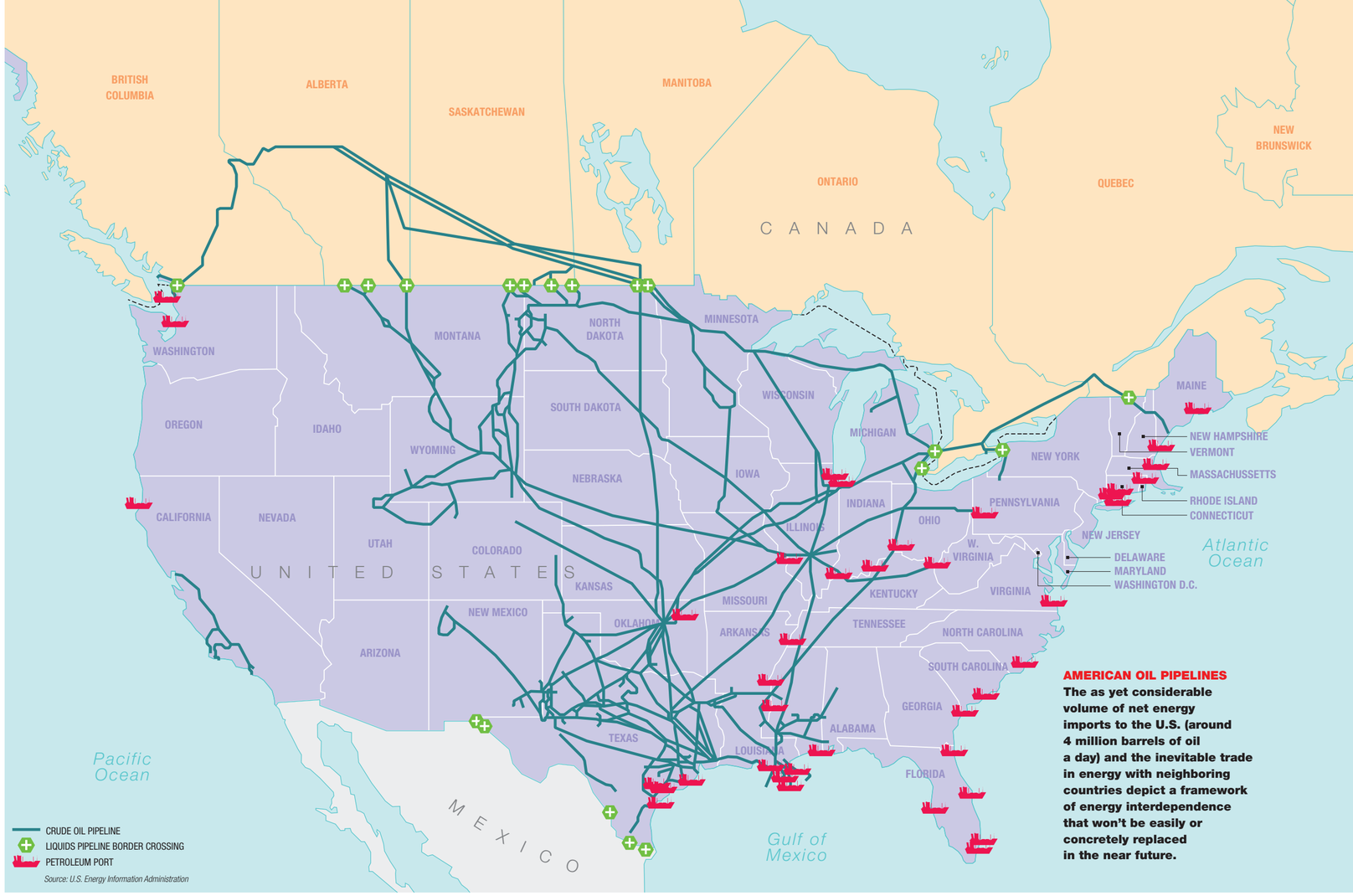
An approach politically driven and thus highly unstable

Public statements by members of the current administration suggest that the policy of Energy Dominance is a decision essentially based on political and ideological considerations rather than in hard-nosed, economic criteria. In justifying the policy, Secretary of Interior Zinke has bluntly stated that: "The Obama administration had too much environmental regulation, which was ideologically motivated and which unfairly targeted fossil fuels." In an op-ed in the *Washington Times*, Secretary Zinke, Secretary of Energy, Rick Perry and then Environmental Administrator, Scott Pruitt stated that dominance meant "freedom from the geopolitical turmoil of other nations that use energy as an economic weapon. An energy dominant America will increase its global leadership and influence."

In other words, the U.S. would now go from playing the anvil to being the hammer. Such a reversal of roles, if at all possible, would be expensive and take significant time to take place. The expansion of domestic oil production and the construction of oil and gas export facilities that will be needed to fulfill the aspiration of dominance will take years or, even decades, if the frequently dramatic oscillations which take place in the global energy market are duly taken into account. For the policy to materialize it would need to be shared by future administrations, which is a low-probability scenario.

In summary

Energy dominance means being able to influence or determine the global production, distribution and pricing of energy and to become the world leader in exports of oil, gas and coal. To accomplish this objective, the U.S. would be starting from nearly zero. It is a net importer of oil, scaling up natural gas exports will require major changes in infrastructure and current coal exports only represent about 0.5 percent of the world's total consumption. U.S. Energy Dominance works better as a slogan than a policy.



AMERICAN OIL PIPELINES

The as yet considerable volume of net energy imports to the U.S. (around 4 million barrels of oil a day) and the inevitable trade in energy with neighboring countries depict a framework of energy interdependence that won't be easily or concretely replaced in the near future.

PRICES

A Story of Prices, Geopolitics and... Tweets

MAY 8 Donald Trump announces the withdrawal of the U.S. from the Iranian nuclear deal signed in 2015 by the P5+1 countries (USA, Russia, China, France, U.K., Germany). The consequent return of U.S. secondary sanctions on the Islamic Republic creates new uncertainties. The price per barrel jumps to over 80 dollars.

SEPTEMBER-OCTOBER In view of the sanctions coming into force in November, several European and Asian countries anticipate cuts to Iranian imports.

OCTOBER 3 The International Monetary Fund reviews its estimates for the growth of the global economy downward, from 3.9 to 3.7% for both 2018 and 2019. The Fund emphasizes the recessive impact of the trade war launched by Donald Trump. New peak for Brent, which rises above 85 dollars.

SEPTEMBER-NOVEMBER USA, Russia and Saudi Arabia vie for the title of top producer, achieving historic records and bringing the sum total of their production to around 34,000 barrels a day.

DECEMBER 7 OPEC and its "allies", led by Russia, agree on new production cuts (1.2 million barrels/day) from January 2019.

JANUARY-MAY OPEC compliance with the cuts approved in 2016 exceeds 150%, which means that member states have reduced production by 600,000 barrels a day more than was agreed at the meeting in Vienna. The average price of Brent is around 70 dollars a barrel during the period under consideration.

JUNE 22 The OPEC summit ends with an undertaking to supply more oil to the market: the member states undertake to return the overall compliance level to 100%. The production cuts will therefore be realigned with the ones originally agreed: 1.2 Mb/g for OPEC, rising to 1.8 with the Russia's contribution.

NOVEMBER 2 The eight biggest importers of Iranian oil (China, India, South Korea, Turkey, Greece, Japan, Italy, Taiwan) are temporarily exempted from the sanctions: they will able to continue importing from Iran for a maximum of six months.

30 Jun

Because of Iran and Venezuela, I am asking that Saudi Arabia increase oil production. Price too high! ...he has agreed

20 Sep

The OPEC monopoly must get down price now!

21 Nov

Oil prices getting lower. Great! Thank you to Saudi Arabia, but let's go lower!

12 Nov

Hopefully, OPEC will not be cutting oil production. Oil prices should be much lower!

20 Apr

Oil prices are artificially Very High! No good

5 Dec

Hopefully OPEC will be keeping oil flows as is , not restricted.... world doesn't need higher oil prices!

The tweets have been posted by President Trump on his account @realDonaldTrump

BRENT PRICE ($/BL)

90
85
80
75
70
65
60
55
50

DEC 17 JAN 18 FEB 18 MAR 18 APR 18 MAY 18 JUN 18 JUL 18 AUG 18 SEP 18 OCT 18 NOV 18 DEC 18

The impact of geopolitics on prices

The Law of Unintended Consequences

The announcement of U.S. sanctions against Iran has had an unwanted and seemingly unexpected effect: increased Saudi and Russian influence on the international market

NAZRIN MEHDIYEVA

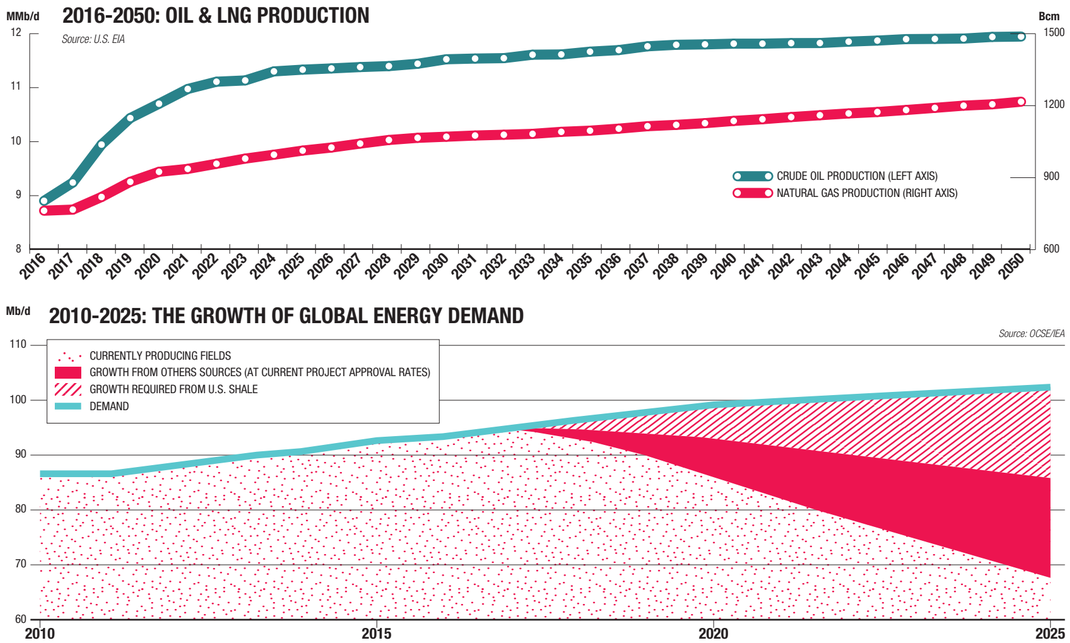
She is a geopolitics and energy security specialist, working with governments, international institutions and energy majors. She has held senior positions in the private sector and at Oxford University. She is the author of *Power Games in the Caucasus* and, most recently, co-author of *Beyond Blood Oil: Philosophy, Policy and the Future.* She is a regular contributor to many prestigious publications.

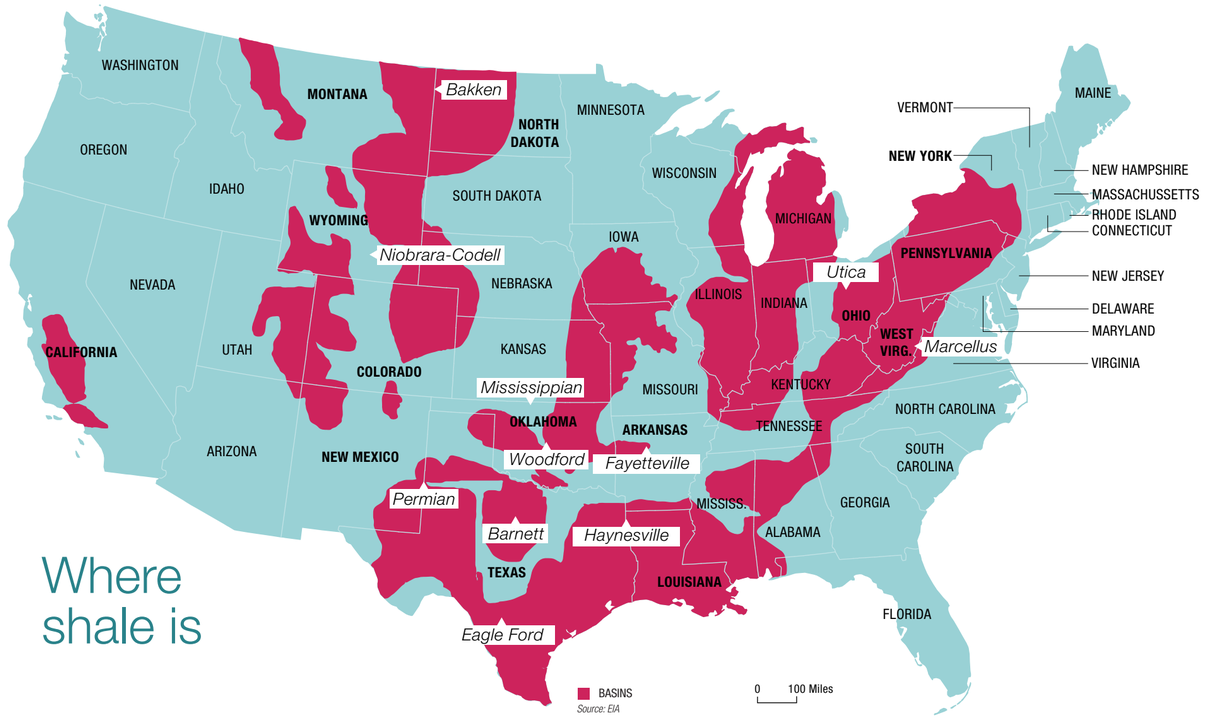
Predicting international oil prices is a dangerous business. In 2018, geopolitics dominated market discussions with a vengeance. A plethora of factors have demonstrated that despite the "tsunami of shale" from the United States, the geopolitics of oil will remain paramount to understanding the market.

Random vs premeditated

Geopolitical factors that affect the oil market can be classified broadly into two categories. The first are unpremeditated events, which are inflicted on the global market as a result of internal crises within states, instability and regime change, armed conflicts or terrorist activities. As in every year, examples of such events in 2018 abounded. Among the most notable were attacks on pipelines in Nigeria, which led to the loss of 150,000 barrels per day (bpd) of Bonny Light crude and a declaration of force majeure on exports; the loss of 850,000 barrels per day in shipments from Libya after the forces of military strongman Khalifa Haftar recaptured ports and transferred control over them from the U.N.-backed government in Tripoli to a separate entity controlled by the self-styled Libyan National Army in Benghazi; and, the deepening crisis in Venezuela, which led the output to collapse to around 1 million bpd from nearly double that volume a year earlier.

The second category of geopolitical factors comprises those events that are





LACK OF INVESTMENTS

Energy demand is set to grow by more than 25 percent by 2040, requiring more than $2 trillion a year of investment in new energy supply. Meeting this growth in the near term means that approvals of conventional oil projects need to double from their current low levels. Without such a pick-up in investment, U.S. shale production would have to add more than 10 million barrels a day from today to 2025.

calculated and intentional, such as military interventions, sanctions and output quotas. In 2018, the most prominent examples of these included the U.S. withdrawal from the multilateral nuclear treaty with Iran and the reimposition of sanctions; the decision by OPEC states and their non-OPEC allies to increase production ahead of the U.S. sanctions notwithstanding the opposition from Tehran; and the waivers on the import of Iranian oil granted by the U.S. Treasury hours before the sanctions regime was due to come into effect.

Intentional actions with unforeseen effects

Despite being purposeful and announced in advance, the premeditated geopolitical interventions in the market frequently produce a range of unforeseen consequences. Consider Saudi Arabia's "pump-at-will" policy. Championed by Saudi Energy Minister Ali al-Naimi between 2014 and 2016, it sought to drive U.S. shale producers out of business by collapsing the oil price. During this time, Riyadh stopped coordinating output within OPEC and instead flooded the market with additional oil. While this policy forced many U.S. shale producers into administration, those that survived did so by cutting costs below what had been previously thought possible for unconventional hydrocarbons producers. This outcome was contrary to the original intent of the Saudi intervention and, despite a policy reversal in 2016, it has continued to shape the market.

By mid-2018, the lean and increasingly competitive U.S. shale survivors had grown to represent half of U.S. oil production, a massive increase from the meager 10 percent that they contributed in 2011. Indeed, the United States hailed a key milestone of 11.3 million barrels per day in August, when U.S. production was higher than that of Saudi Arabia and Russia, which in that month reported daily output at 11.2 million and 10.4 million barrels, respectively. Propelled by gains in shale output from the Permian basin and the Bakken field, the threshold of 11 million barrels per day was reached sooner than expected by the U.S. Energy Information Agency, which has since revised its U.S. production forecasts upwards. According to the new set of data, U.S. crude output is expected to add 1.1 million barrels per day by the end of 2019, increasing average daily output from 10.9 million to 12.06 million barrels. The United States is thus on the path to become the world's largest supplier of crude, overtaking Russia and Saudi Arabia. Yet in recent analysis, the executive director at the International Energy Agency, Fatih Birol, has argued that shale alone could not be relied on to head off global shortages, which would result from the current low level of investment in conventional reserves and growing demand. The IEA's latest Word Energy Outlook, published in November, predicts energy demand to grow by more than a quarter between 2017 and 2040. This figure doubles if no improvements are made to the current levels of energy efficiency. At the current levels of investment in conventional reserves, shale producers would have to raise output equivalent to "one Russia" in the next seven years if they are to stave off supply shortages. That, in Birol's words, would be nothing short of a "small miracle."

The power to swing

Despite the massive output gains, the U.S. has not emerged as a swing supplier to the market. Pipeline congestion has created a situation where strongly growing output cannot be transported out of the production region, and, even when additional volumes are evacuated by rail car and trucks, a related problem of insufficient export infrastructure means that the United States is constrained in the volume of crude that it can ship to global markets. These bottlenecks prevented U.S. producers from delivering larger crude volumes internationally when oil prices began to rise following production cuts by OPEC and non-OPEC states in 2016-17. They continued to act as a constraint in 2018 when prices spiked at over $86 per barrel in October, as the market braced for hard sanctions on Iran. Repeated demands from the White House, communicated most frequently by President Donald Trump via twitter, that Saudi Arabia and Russia increase production to keep a lid on prices was tantamount, in the view of Moscow and Riyadh, to U.S. acknowledgement of its inability to balance the market.

As the main states in the system with spare capacity, Saudi Arabia and Russia increased their cooperation. Deemed unthinkable less than four years ago, the two states publicly flaunted their "complete alignment" of interests at the OPEC meeting with non-OPEC allies in June. Between May and late September, OPEC output had been raised by almost 1 million barrels per day, despite falling supply from Iran and Venezuela. Russian production too was growing, reaching a new post-Soviet record every month. Yet the psychological impact of the impending U.S. sanctions on Iran was a driving factor that raised Brent prices to $86 per barrel in October—their highest level since 2014.

The unwanted, and seemingly unexpected, consequence of Trump's announced decision for a "zero-tolerance" sanctions regime on Iranian oil increased Saudi and Russian leverage in the international market. While Riyadh had long played the role of a swing supplier on the global scale, Moscow was less accustomed to the limelight. For its senior officials, this was a chance to tout Russia's "responsible partnership approach," in which Russia increased output to help balance the tightening market. The contrast was made with the United States whose "irresponsible policy," Russian officials said, produced higher prices. In their assessment, the prices within the $60-$80 per barrel range, which President Donald Trump found unacceptably high, suited Russia just fine. In analyzing the root cause of the higher prices in October, President Vladimir Putin stated that "the activities of the U.S. administration" were to blame, most notably the expectation of sanctions against Iran, political problems in Venezuela and the destruction of the state in Libya. He declared that Russia would be prepared to continue to grow output—from the post-Soviet record of 11.4 million barrels per day achieved in October—thanks to newly developed East Siberian fields, such as Rosneft's Yurubcheno-Tokhomskoye, Taas-Yuriakhskoye and Suzunskoye.

Rhetoric and defiance

Moscow also felt vindicated in its argument that U.S. sanctions represented an act of geopolitical interference in the market and a means of economic warfare designed by Washington to promote the export of U.S. shale hydrocarbons. This argument, first postulated following the imposition of U.S. sanctions on Russia in the aftermath of Moscow's illegal annexation of Crimea in 2014, became entrenched in the Kremlin's rhetoric. It appeared to receive more credence internationally following the announcement of the sanctions on Iran in May, particularly as U.S. Treasury delegations began to negotiate the sale of U.S. crude to India and China, to replace Iranian supplies before the imposition of sanctions in November. Indeed, U.S. oil exports to India soared to record highs of 347,000 barrels per day in June, rising from 8 million barrels in all of 2017 to 15 million in the first seven months of 2018.

Yet, in the following months, the attractiveness of U.S. crude diminished due to the strengthening of the U.S. dollar and the reduction of the Brent premium to WTI. Tehran's decision to offer insurance on cargo and tankers operated by Iranian companies as well as oil discounts also played a role. Speaking in October, Indian Oil Minister Dharmendra Pradhan stated that India would continue to purchase oil from Iran following the end of the sanctions' wind-down period on 4 November. Pradhan added that India was considering setting up a payment system to buy Iranian oil using Indian rupees. The sentiment was shared by the E.U., which also suggested setting up a Special Purpose Vehicle to "facilitate legitimate financial transactions" with Iran, including those in oil.

Russia continued to denounce U.S. sanctions as unilateral and illegal, insisting that it would continue to trade with Iran post-November.

China, which on average took 377,000 barrels per day of U.S. crude in the first seven months of 2018 and ranked as the first or second (after Canada) top destination for U.S. crude, responded to the escalating trade war with the United States by dropping U.S. oil imports to zero in August. Even after Beijing excluded crude from its list of tariffs, Chinese importers did not purchase any U.S. oil amid fears that the exclusion was temporary and implemented only to facilitate the delivery of those cargos to which the parties had already committed. To make up the shortfall, Chinese importers turned to other suppliers, including Iran, shipping in a record 874,000 barrels per day of Iranian crude in August.

Chinese refiners pointed to contractual obligations with Iran as a reason to continue buying Iranian crude throughout the rest of the year, while the country's Foreign Ministry issued a statement asserting the "reasonable" nature of Beijing's ties with Tehran, which were not in breach of →

U.N. resolutions. Indeed, an unprecedented volume of 22 million barrels of Iranian crude was loaded on the supertankers of the National Iranian Tanker Co for delivery to the Chinese northeast port of Dalian in late October and early November. This was far in excess of the monthly volumes of between 1 million and 3 million barrels of Iranian crude that the port has typically received since 2015. The move was clearly in anticipation of looming U.S. sanctions and aimed at using Dalian's vast commercial storage facilities for subsequent sale to Asian customers, as was the case in the last round of sanctions in 2014.

As the November deadline approached, the Administration's position of imposing zero-tolerance sanctions on the purchases of Iranian oil became untenable. This led to the issuance by the U.S. Treasury of "temporary" waivers, which were granted to all major buyers of Iranian oil, including China and India. The adoption of "soft" sanctions was a face-saving measure for the Administration in the light of its inability to enforce the initially proclaimed policy.

The Saudi Dilemma

The waivers undermined the U.S. stance and complicated life for Saudi Arabia as the kingdom had raised production to record levels, pumping 11.3 million barrels per day in November. In conjunction with record-high production in Russia and the U.S., waivers resulted in a steady decline in the price of Brent from $73 per barrel on 5 November—the day when the sanctions went into effect—to under $60 by the end of the month. To balance its budget, Saudi Arabia needs international oil prices to average $73 per barrel in 2019. While this break-even point is lower than the $83 per barrel in 2018, in the situation of oversupply, created by the combination of soft sanctions on Iran and record-high oil output from Saudi Arabia and Russia, it means that, to balance the market, Riyadh needed not only to cut its own production but also convince other players within and outside OPEC to follow suit. This was achieved on 7 December in Vienna when OPEC and their non-OPEC allies agreed to cut production by 1.2 million barrels per day for six months starting in January. Russia's Energy Minister stated that his country's production would fall by 228,000-230,000 barrels per day, or about 2 percent. The agreed reductions are very close to the 1.3 million barrels per day cuts recommended ahead of the meeting by OPEC's Economic Commission Board but went against the wishes of President Trump who demanded no change in production and lower prices.

The U.S. Dilemma

The timing of U.S. sanctions on Saudi Arabia would be hard to get right. On the one hand, announcing tough measures but watering them down later, the way the Administration was forced to do in the case of Iran, would damage the U.S. reputation. On the other hand, introducing tight sanctions before U.S. export infrastructure is expanded sufficiently for shale producers to deliver additional volumes to the market would lead prices to skyrocket internationally and hurt the U.S. economy, because U.S. prices at the pump continue to be set by developments on the global oil market.

Indeed, the IEA analysis shows that, given the current inadequate level of investment in conventional oil projects, the market would encounter shortages even without sanctions on a key supplier, such as Saudi Arabia. Any sanctions on Riyadh would undoubtedly exacerbate this situation immeasurably, requiring U.S. shale producers to increase production on a level of a big, not small, miracle. Thus, in the oil market, geopolitics will continue to rule the day. The current oversupply was initially set in motion by the U.S. geopolitical intervention in the form of the announced tough sanctions on Iran. The impact of this intervention will continue to reverberate through the market.

The decision by OPEC+ in December to cut production will test the political resolve of Riyadh and Moscow to hold ranks for any sustained period of time and allow the market to balance at the cost of the loss of their market share.

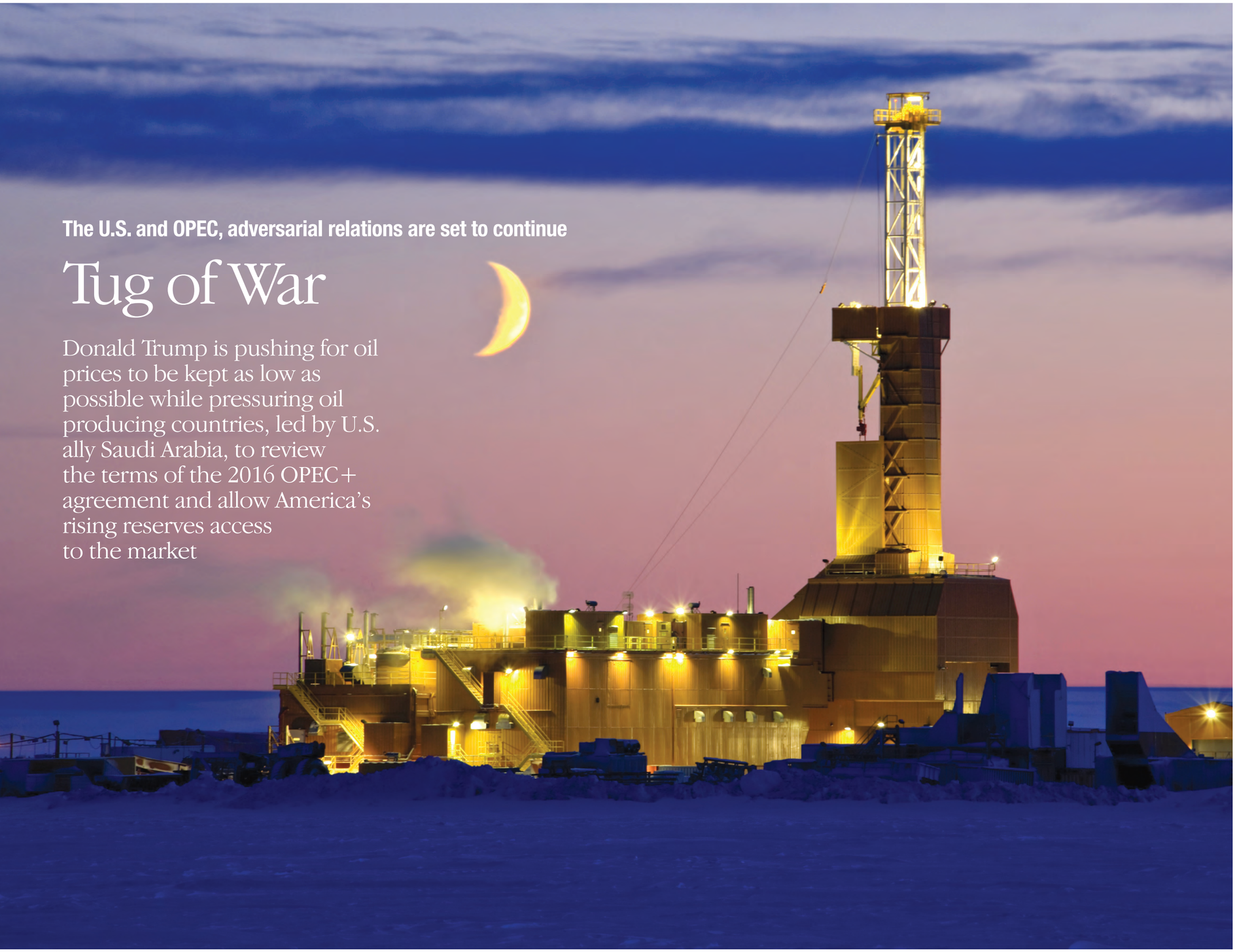
The decline of Rohani

The new direction of U.S. policy under Donald Trump has created serious difficulties for Iranian President Hassan Rohani, whose 2014 election had raised great hopes in Western countries, and especially in Barack Obama's U.S. 2018 marked a decline in Rohani's popularity, both at home and abroad, due to the renewed confrontation with Washington, the lack of an expected economic recovery in the wake of the 2015 nuclear agreement, and the failure of efforts to reform the Iranian political and economic system, which is still dominated by the Revolutionary Guardians, the Pasdaran.

In his relationship with the United States, Rohani finds himself constantly having to react to the initiatives taken by the Trump administration which, in denouncing the nuclear agreement and renewing the sanctions against Tehran, has strengthened the role of the Pasdaran, who are back in charge of dealing with the hottest foreign policy issues, Syria, Iraq and Yemen. Rohani is also having to deal with a new economic crisis that risks bringing the country to its knees, with the rial losing two thirds of its value against the dollar between January and September this year and dozens of Western companies having to cancel contracts for billions of dollars due to U.S. sanctions.

The final phase of Rohani's first term has been marked by an extraordinary wave of anti-government demonstrations which, for the first time, have included slogans against Tehran's interventionist policies in Middle Eastern crises, and explicit criticism of the financing given to paramilitary groups such as Hezbollah and the Yemeni Shiite Houthi rebels, as well as the Syrian regime. Despite the silence in the Iranian media, protests and demonstrations took place throughout 2018. In mid-November, thousands of people, from steel mill workers to teachers, staged a series of demonstrations on a national scale, supported by the conservative fringes, chanting slogans against the president, who is accused of bringing Iran back to the brink of a crisis because of his overtures to the West. Finally, the president is facing internal security issues, as demonstrated by the increasingly frequent attacks against Iranian security forces, particularly in the border regions where the Sunni minority is the strongest.

SIMONE CANTARINI



The U.S. and OPEC, adversarial relations are set to continue

Tug of War

Donald Trump is pushing for oil prices to be kept as low as possible while pressuring oil producing countries, led by U.S. ally Saudi Arabia, to review the terms of the 2016 OPEC+ agreement and allow America's rising reserves access to the market

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or oil markets and OPEC's key policymakers, 2018 has been an unusual year. The success of the 2016 OPEC+ cuts agreement that saw a landmark deal between OPEC and several key non-OPEC oil producers to restrain output and stabilize oil prices at a higher level opened a new chapter in oil diplomacy. It proved that coordination across the OPEC/non-OPEC divide, especially between Saudi Arabia and Russia, was not only possible, but offered a sustainable new format for oil market management. Stronger than expected global oil demand growth and adherence to the cuts by OPEC+ in 2017 delivered a price recovery that saw Brent prices average over USD 54 in 2017 and extend to highs above USD 80 in Q4 2018. But if OPEC worked hard to create a new framework for supply management, a new oil price driver was about to enter the stage. President Trump's decision to pull out of the Iran nuclear agreement and reimpose sanctions on Iranian oil exports was not unexpected. But a lack of detail about the policy created fresh uncertainty on supply, helping to sustain a geopolitical risk premium that saw prices crest well above USD 80 in the autumn. Yet it was Trump's controversial public criticisms of OPEC and its actions and his regular commentary on the oil price, delivered publicly by tweet, that created the highest level of confusion among OPEC producers and within the oil market itself. Trump seems to have the capacity to pull the oil market in sharply different directions.

The 2016 deal–a historic success

These developments came after a period of historic success for the producer group. In early 2018, there was no enthusiasm for abandoning the cuts prematurely. Despite evidence that oil stocks had moved below the five-year average, the hunt was on to establish new benchmarks that would justify cuts being left in place. OPEC's assessment in late 2017 was that the cuts, which had delivered record compliance levels above 100 percent on the back of both disciplined supply restraint and unplanned outages and declines across several member countries, should extend through the whole of 2018. This analysis was underpinned by the view that it took a lot of time and effort to seal the 2016 output cut agreement and it would be safer to overtighten the oil market than risk a return to the oversupply situation that created record stock builds from 2014 to 2016 and sent oil prices to historic lows below USD 40.

Early in 2018, the demand picture looked particularly strong, and while →

A long relationship

Common interests in oil and security have bound the U.S. and Saudi Arabia for more than eight decades, though the period has not been without times of strain.
At times, the rifts have been serious, notably in 1973, when Saudi Arabia's opposition to the U.S.'s support of Israel in the Arab-Israeli war led it to impose an oil embargo. But through it all, the relationship has been viewed as mutually beneficial and always gotten back on track. Below are some of the landmark events that have defined relations between these historical allies.

1933 The Standard Oil Company of California (now Chevron) wins a sixty-year concession to explore eastern Saudi Arabia, making its first discovery in 1938.

1944 Standard Oil and Texas Oil Company (Texaco) form a partnership in Saudi Arabia and together found the Arabian American Oil Company, or Aramco; Exxon and Mobil later join the consortium. Since 1980, the company, now known as Saudi Aramco, has been entirely owned by the Saudi government.

1945 U.S. President Franklin D. Roosevelt meets with King Abdulaziz aboard the U.S.S. Quincy off the coast of Egypt. Saudi Arabia will remain officially neutral during World War II but allows the Allies to use its airspace.

1973 Saudi Arabia imposes an embargo on its sales of oil to the United States in response to Washington's support for the Israeli military during the Arab-Israeli war in October.

1991 A U.S.-led coalition expels Iraqi forces that have occupied Kuwait. More than half a million American troops flood into the region, many of them based in Saudi Arabia.

2000-2005 During the second intifada in Israel, Riyadh tables the Arab Peace Initiative, whereby Arab countries could normalize relations with Israel in exchange for its withdrawal from the occupied Palestinian territories and a "just solution" for Palestinian refugees. Elements from this initiative are adopted by the Bush and Obama administrations.

2017 King Salman appoints Mohammed bin Salman as crown prince of the Saudi Kingdom. That same year, bin Salman launches his Vision 2030 initiative, which aims to diversify the Saudi economy and boost foreign investment. The Trump administration has generally supported the new Saudi leadership.

2018 The Saudi royal court denounces the U.S. decision to recognize Jerusalem as the capital of Israel.

the U.S. supply was growing strongly, there was no sign at that point of the extent to which North American growth estimates would have to be upgraded. In March, the view according to OPEC's monthly oil market report was that the call on OPEC crude would be 32.6mn b/d in the year, with demand growth at 1.6mn b/d and non-OPEC supply growing by 1.66mn b/d, of which the the U.S. alone was expected to contribute 1.46mn b/d.
But by the end of the year, some of those forecasts had been sharply amended to account for much stronger U.S. liquids supply growth and downgraded demand growth due to concerns about the prospects for the global economy on the back of the U.S-China trade war, a deterioration in the outlook for some emerging economies, and the impact of the higher oil prices on demand. While the November report held the 2018 call on OPEC crude unchanged at 32.6mn b/d (the forecast for 2019 was lower at 31.5mn b/d), the non-OPEC supply growth forecast for the year had been lifted by a total 650,000 b/d, mainly on the back of a 600,000 b/d upgrade to U.S. liquids growth, which now stands at 2.06mn b/d. Russian supply had been upgraded to annual growth of 70,000 b/d from an earlier forecast for a decline of 160,000 b/d. That level of non-OPEC supply growth is forecast to be mostly sustained in 2019, according to OPEC's own forecasts, at 2.23mn b/d, creating a sharply lower demand for OPEC crude.

OPEC+ reinvents oil diplomacy

But if the market balancing mission looked tough, the policy infrastructure appeared capable of handling the challenge. The 2016 OPEC+ cuts deal was significant beyond its impact on physical oil balances. It sent a strong message to markets that major producers had reinvented oil diplomacy in a new image—a structure that delivered market credibility and in which longtime OPEC heavyweight Saudi Arabia was able to be influential, to the point where it had persuaded Russia to join it. Not only did this multilateral element send a strong message, but the consistency and commitment with which Riyadh was prepared to pursue its market aims was underlined by its readiness not to exit the deal prematurely.
Yet Riyadh's efforts to maintain output targets were to be derailed by two important developments. President Trump's impact on oil markets occurred in two ways.
First, he announced the U.S. withdrawal from the JCPOA, the nuclear deal that had lifted sanctions on Iranian oil exports and freed up Tehran's access to global financial markets, banking and investment in return for restrictions on its nuclear program. The decision, announced in early May, was by that point expected, Trump having made it clear in late 2017 that he would no longer agree to certify Iran's compliance with the deal. On the face of it, the move supported the OPEC+ mission of tightening supply, implying the loss of Iranian exports over time, a shift that would contribute significantly to the bullish market narrative that dominated from this point until early October.
U.S. officials let it be known that their approach to Iran sanctions would be draconian and zero-sum compared to the approach adopted by President Obama. The White House declared it wanted to see Iranian oil exports reduced to zero, an attempt to strangle the Iranian economy, correct Iran's regional behavior and even bring about regime change, according to senior administration figures.
Saudi Arabia played a significant role here, assuring the U.S. it would make up for any supply shortfall created by the loss of Iranian barrels. The possibility that Iran oil exports would be completely choked off, with a resulting loss of some 2.4mn b/d, upheld the bullishness of oil markets through the summer, bullishness inspired by the belief that the November re-imposition of sanctions on Iran by the U.S. would result in a precipitous collapse in Middle East oil supply. Many market players doubted whether OPEC spare capacity was sufficient to make up for losses of that size.
Russia, as Saudi Arabia's key non-OPEC partner in the 2016 cuts deal, also made OPEC and Saudi oil diplomacy more complicated from June onwards, making clear that while it was prepared to nominally remain within the cuts framework, it would no longer restrain supply growth. Effectively this was an exit from the deal after the May presidential elections that had returned President Putin for a fresh term in office. Moscow was certainly content to soft-pedal its weakening adherence, speaking in supportive terms but essentially allowing companies to implement their delayed growth plans. Given Moscow's readiness to underline its readiness to maintain cooperation, this was less of a challenge than President Trump's attacks on OPEC.

Trump's litany of complaints

President Trump launched his first Twitter salvo against OPEC in April, accusing the group of keeping oil prices "artificially high" despite abundant oil supplies. The tweet, published just as OPEC officials and ministers were meeting in Jeddah, was a hammer blow to the organization. Certainly U.S. feedback on OPEC policy was nothing new, but the blunt, undiplomatic and public way it was delivered took OPEC officials by surprise. And it was just a start, as Trump continued to launch a barrage of complaints against OPEC over the subsequent months, deriding the organization in campaign speeches ahead of the U.S. midterm elections.

A watershed called bin Salman

The appointment of Mohammed bin Salman, son of the Saudi King Salman, as heir to the throne in June 2017 marked a watershed in Saudi and foreign and domestic politics, restoring Riyadh as a strategic U.S. ally in Middle Eastern politics and launching an unprecedented reform path in the Kingdom with the "Vision 2030" plan. The young prince's rise to power coincided with the removal from the command centers of figures closer to the late King Abdullah and with an increasingly aggressive policy towards Iran, consolidated with the election of Donald Trump.
The American leader chose Saudi Arabia as the inaugural stage of his first trip abroad in May 2017, ending the policy of openness towards Iran that had characterized the presidency of Barack Obama (2009-2017) that had led to the nuclear agreement being signed in July 2015, an agreement that was strongly criticized by Saudi Arabia and Israel. The relationship between the young crown prince, the president of the United States and the latter's son-in-law, Jared Kushner, has also contributed to a gradual rapprochement between the Sunni Gulf monarchies and the State of Israel in opposition to Iran, and in favor of the re-imposition of sanctions against Tehran by Washington.
Mohammed bin Salman's rise to power coincided with a clear break with Qatar on June 5, 2017, which led to a redefinition of the Gulf Cooperation Council, led by Saudi Arabia and the United Arab Emirates, with implications for OPEC as well. Qatar's decision, announced last December 3, to pull out of the Cartel in 2019, appears to be a direct consequence of that redefinition by Mohammed bin Salman. On the energy front, the politics of the young heir to the throne and his faithful entourage have been no less aggressive. The announcement in 2016 that the oil giant Aramco might be listed on a stock exchange, which has not yet happened, and a general review of the entire sector, has allowed Riyadh to establish relationships with foreign partners other than the United States, in particular China and Russia. The relationship with Moscow and personally with President Vladimir Putin, Iran's main ally, was one of the most important moves by Mohammed bin Salman. The agreement signed at the end of 2016 to cut production between OPEC and the ten countries outside the Cartel led by Russia has resulted in an unprecedented level of cooperation between Riyadh and Moscow, cooperation based on a common interest in managing the price of crude oil.

SIMONE CANTARINI

Qatar's Isolation and the Agreement to Cut Production

The country's announcement that it is to withdraw from the cartel of petroleum exporting countries in January could have significant geopolitical effects. Qatar has been isolated by many of its neighboring states, who claim that Doha supports political Islam in the region. Meanwhile, the OPEC summit in Vienna ended with the decision to cut production by 1.2 million barrels per day

Qatar has announced it will withdraw from the Organization of Petroleum Exporting Countries (OPEC) by January 2019. Officials of the Gulf State, an OPEC member since 1961, said they intend to focus on gas production. Qatar, one of the world's largest natural gas exporters, has been boycotted by many Saudi Arabia-led Arab nations who accuse Doha of financing terrorism. Qatar's Minister of State for Energy Affairs, Saad al-Kaabi, underscored that his country's decision to leave the international body is not driven by geopolitical considerations.
The announcement came within a few hours of the opening of the Vienna OPEC summit held on December 6-7 that ended with the decision to cut oil production by 1.2 million barrels per day. Qatar's withdrawal from OPEC is not expected to have a major impact on oil prices, since the country only produces 0.6 million barrels per day and ranks 11th among the cartel's members.

The Vienna OPEC meeting

To implement the reduction agreed in Vienna, OPEC members will cut production by 800,000 barrels per day, while Russia-led oil producers will cut the remaining 400,000 barrels per day. Ahead of the Vienna meeting, Russian President Vladimir Putin said he was confident, as Saudi Crown Prince Mohammed bin Salman had agreed to extend output cuts. Russia is one of the largest oil producing countries outside the OPEC cartel. Donald Trump said the United States, also not a member of OPEC, was in favor of maintaining current levels of production.
Within a few hours of the announcement of the deal reached in Vienna, oil prices increased by 5.2 percent, trading at USD 63.11 a barrel, and rose again by 4 percent last week following the announcement of a truce in the trade war between the United States and China. The aim of curbing oil production is to avoid falling oil prices. As to how output cuts will be shared among OPEC members, the reduction could be carried out entirely by Saudi Arabia, or it could be shared fairly among the various member countries, with Libya, Iran and Venezuela–which is to assume the presidency of OPEC next year–all set on maintaining their current levels of production. OPEC members were in a similar situation in 2014 when oil prices started to fall from USD 100 a barrel. Many analysts have underscored the need for Saudi Arabia to comply with requests to curb its output at this sensitive time, as the country faces the political consequences of the Jamal Khashoggi case. An alternative solution for Saudi Arabia could be to maintain their oil production as high as possible and request other OPEC members to implement the cuts. In recent months Libya and Nigeria have been increasing their oil production, and the former in particular has doubled its output to 1.3 million barrels per day.

Qatar's isolation

The other point on the agenda of the Vienna meeting was Qatar's withdrawal from OPEC. In June 2017, Bahrain, Saudi Arabia, Egypt and the United Arab Emirates severed diplomatic relations with Qatar. These countries' major airlines will stop flying to Doha, and Qatar's diplomatic missions have been closed or significantly curtailed. Qatar's Al Jazeera television broadcasts have been permanently banned and its offices shut down. All these countries except for Egypt have also banished Qatari citizens from their national territory. These measures have won praise from U.S. President Donald Trump, whose policy it is to further Saudi Arabia's interests in the region. American foreign policy in the Middle East has resulted in the imposition of new U.S. sanctions against Iran in August and November 2018, and in Washington's withdrawal from the Iran nuclear deal signed in Vienna in July 2015. The U.S. Administration, however, has granted a six-month exemption from U.S. sanctions to eight Iranian oil importing nations, resulting in higher than expected Iranian oil production.

A troubled region

Tensions in the region continue to be high. Britain and France requested a United Nations Security Council meeting to discuss the medium-range ballistic missile test carried out by Iran on December 1, 2018. U.S. Secretary of State Mike Pompeo accused Iran of test-firing the missile in violation of U.N. Security Council resolution 2231 on the Iran nuclear deal. Washington's position is that any possible agreement on Iran's nuclear program should include restrictions on Iran's ballistic program among the points of negotiation. Also, as a result of the new American sanctions, Iranian crude oil production has fallen to 3.4 million barrels per day in recent months. Qatar's announcement that it is to withdraw from OPEC by January could have significant geopolitical consequences. The country has been isolated by many neighboring states who claim it has supported political Islam in the region. On the one hand, Qatar's departure is not expected to have a major impact on oil prices. On the other, the decision taken at the Vienna meeting to cut oil output, despite uncertainty over its implementation and Trump's opposition, could contribute to significantly increasing oil prices, as Russia and Saudi Arabia wish.

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Journalist and specialized researcher in the Middle East (Bocconi University of Milan and London).

The attacks did not seem to be purely rhetorical, and OPEC officials feared there was substance and the possibility that U.S. legislators would carry forward the draft NOPEC bill, which sought to allow OPEC countries to lose sovereign immunity from potential prosecution under U.S. antitrust law. The NOPEC bill has seen several incarnations since 2008 and, given its rare bipartisan support in Congress, is seen by OPEC officials as a genuine threat to the organization.
President Trump's call for OPEC to maintain a higher oil supply and bring prices lower was a key challenge to OPEC's efforts to establish a credible market management message ahead of the June OPEC meeting. Not only did Saudi Arabia have to contend with the de facto departure of Russia from the cuts, but it had to appear receptive to the U.S. message increasing supplies to keep a cap on the oil price, while at the same time working to prevent an uncontrolled slide in oil prices. This then became the genesis of the conflicted Saudi policy that has resulted in a few U-turns and made credible market messaging so much more difficult in the run-up to the 2018 December OPEC meeting. Aside from the U.S. pressure to send oil prices lower, even after declining by more than 30 percent since the early October peaks, the U.S. announcement of widespread waivers on Iranian oil sanctions took the market and OPEC oil producers by surprise. The absence of any coordination on this volte-face in U.S. policy took Saudi Arabia by surprise, as it had already opened its taps to reassure markets and accommodate the U.S. Iran policy and was now faced with a bearish oil market that would require it to rein in the surge. In November 2018, Saudi output exceeded 11 mb/d, 1 mb/d above its OPEC quota. Even in the face of the recent price fall, Trump continues to urge Saudi Arabia not to change course and cut output, congratulating himself for providing American citizens, but also other net oil importers, with a "tax cut."

Saudi choices are getting harder and harder

Intervention from the White House has left Saudi Arabia facing multiple new challenges, many of which emanate from the U.S. A constant challenge for OPEC has been to identify the nature of the shock hitting the market. If the declines in the oil price are temporary, driven for instance by speculative demand pressures and by deterioration in expectations, then Saudi Arabia's push to cut output to stabilize market expectations and reverse the oil price decline could result in higher and more persistent price gains. On the other hand, if the declines in oil price are driven by structural shifts in supply-demand, then Saudi Arabia may be reluctant to cut oil output as this would result in reduction in market share and revenues, as any temporary gains in the oil price will fade. So how Saudi Arabia perceives the shock is one of the key determinants of its output decision. The rapid growth in U.S. shale supply and the resulting shift in trade flows, its short-term investment cycle, and its responsiveness to price signals represent new structural features in the oil market, features which complicate OPEC's management of the oil market. Another structural change is the increased uncertainty in the prospects of global oil demand growth as governments pursue more aggressive climate change and air pollution policies and as technological advancements are expected to reduce the share of oil in the transport sector.
However, the U.S. impact on the oil market is not only confined to developments in U.S. shale. President Trump's capacity to influence →

In Libya, Everything is at Play

The Tripoli stabilization plan, agreed at the Palermo conference, is the result of the change in the geopolitical scene in the Middle East caused by Donald Trump's accession to the White House

Seven years after the outbreak of civil war, Libya finally seems able to aspire to stability. At the Palermo conference last November, a plan was agreed to for the approval of a new constitution and therefore the election of a new parliament and eventually a new head of state. This result—still subject to numerous variables—has been made possible by the profound change that Donald Trump's arrival at the White House has brought to the geopolitical scene in the Middle East.

Obama's policy alienated the Saudis and Israelis

During Barack Obama's first term, with Hillary Clinton at the Department of State, Turkey was able to greatly extend its influence over the area, supporting the "Arab Spring" thanks to Qatar's financial and media support, with its satellite broadcaster Al Jazeera playing a key role in the organization of the riots. In his second term, Obama instead turned the attention of U.S. diplomacy to Iran, aiming at an agreement to control the nuclear program in Tehran. In both the first and second stages, Washington raised the ire of two traditional allies, Saudi Arabia and Israel, who were intimidated by the growth of the Muslim Brotherhood, the stability of Egypt and the expansion of Iranian influence in Syria and the Gulf.
In an attempt to prevent an agreement with Iran, the Saudis and Israelis founded a bank in François Hollande's France. By vigorously opposing the agreement with Tehran, the French President achieved significant contracts in the fields of Saudi energy and defense, and a privileged relationship with General Khalifa Haftar, a strongman in Cyrenaica, the eastern coastal region of Libya. However, the picture has now changed completely.

Trump upsets the apple cart and the old alliances return

In May 2017, Donald Trump made his first trip abroad to Riyadh, revolutionizing United States foreign policy and rebuilding the traditional system of alliances in the Middle East, based on a very strong relationship with Israel and Saudi Arabia. This decision was favored by the rapprochement in previous years of the two countries, which had found ground for dialog in defending Egyptian stability, in contrast to the expansion of Turkey and Iran. The breakthrough slowly became effective in Libya, and these positive developments contributed to the agreements reached in the energy field between Italy and Egypt, with Russia and Qatar later coming on board.

Macron becomes ruthless

Since summer 2017, French President Emmanuel Macron, has been reacting to the new structure in the region. His attempts to speed up the planning of the presidential elections in Libya have crystallized the situation, rewarding Haftar and France itself, which is aiming to develop its own energy industry in Cyrenaica. However, Macron has not been supported by Trump, who has kept a low profile on Libya and has instead offered support to the elaborate stabilization plan drafted by the United Nations representative, Ghassan Salamé, a plan which is supported by Italy.

Signs of peacemaking

The new geopolitical framework has made it possible to launch concrete dialog between the various Libyan factions, in particular between Sarraj and Haftar. On October 7, 2018, the Libyan Prime Minister announced a government reshuffle, notably the nomination of Fathi Bashagha to the helm of the Ministry of the Interior. A representative of the powerful militias of Misrata—a city historically linked to Ankara, due also to the strong ethnic Turkish minority there—Bashagha should be able to reassure his fellow citizens in the face of a general understanding between Tripoli and Benghazi. In November, Abdullah al-Dersi was also appointed to head the Libyan intelligence services. A native of Cyrenaica, the new head of the secret services had already been put forward for the position in 2015 by the Tobruk House of Representatives, and has worked together with the Ministry of the Interior of the unrecognized Benghazi-based "transition" government.

Toward a new Constitution

Together with the progress made in Cairo on the creation of national armed forces, these signs of reconciliation made it possible to achieve the first concrete results on the road to the stabilization of Libya, at the Palermo conference. The only—albeit significant—exception was Turkey, whose Vice-President Fuat Oktay quit the conference over a dispute with the Egyptian leader Abdel Fatah Sisi. The conference participants endorsed the new United Nations action plan, which projects the convocation of a national conference, the approval of a new constitution, and the celebration of parliamentary elections in spring 2019. Until then, the Sarraj government will remain in charge in Tripoli. This is the only Libyan entity to have managed to lift the UN embargo on the purchase of arms. "There is no need to change the horse while crossing the river," noted Haftar, recognizing the strengthening of his rival.

Next steps

The new UN plan notes the "failure" of the Tobruk House of Representatives, the parliament that meets in eastern Libya, in securing a constitutional framework for the elections which, according to the French plan, should have taken place on December 10, 2018. The "roadmap" foresees the strengthening of security in Tripoli by replacing the militia with regular police forces, the recognition of the Central Bank and the National Oil Corporation as institutions common to the whole country, the dissolution of the militia, and the creation of national armed forces. On the domestic front, the Libyan High Council of State in Tripoli and the House of Representatives, the parliament in Tobruk, are trying to reach an agreement to appoint a new executive authority in Libya. The idea is to reorganize the current presidential council led by Prime Minister Sarraj, appointing a president and two members and a new separate government. "We'll see if a real deal can be reached," Salamé said to the Security Council.

ALESSANDRO SCIPIONE

and even take credit for oil market moves remains undimmed. This has created a conflict for Saudi Arabia. On the one hand, the Kingdom needs oil prices to regain upward momentum in order to meet its revenue targets and continue its spending on welfare and the reform agenda that is crucial to the country's long-term economic well-being. Unlike in 2014, when Saudi Arabia decided not to cut output in face of a structural shock to market fundamentals (slowdown in demand growth, rise in U.S. shale production, and the return of many disrupted countries to the market), the Kingdom's current financial buffers are thinner and the prospects for its economy and the private sector are weaker, while government spending keeps rising. At the same time, Riyadh can't be seen to be pushing oil prices to high levels, and at a minimum not be seen as a leading voice for sharp output cuts. This represents a fundamental shift in market perceptions about Saudi oil policy as the market doubts that Saudi Arabia can make its output decisions independent of pressure from Trump. These constraints may require the Kingdom to change how it acts and signals to oil markets.

The future conditions

Looking ahead, two factors will remain uppermost: U.S. policy on Iran and President Trump's capacity to preserve the strategic relationship with Saudi Arabia amid pressure for some form of sanctions from Congress. On the former, the U.S. focus on countering Iran's influence in the region appears to be undimmed, even if the tactical pathway has become confused due to the sanctions waivers. On the latter, President Trump is keen to preserve its strategic relations with Saudi Arabia and has little enthusiasm for putting arms sales to Saudi Arabia on the table for discussion. As such, one should assume that core strategic relations between the U.S. and Saudi Arabia remain cemented in place, even if the bilateral relations have suffered in the wake of the Khashoggi affair. Saudi Arabia itself will need to continue to perform a delicate balancing act. It must keep oil prices moderate enough to avoid censure from the White House, avoid slowing down demand growth, and moderate U.S. shale supply growth, but also put in place long-term policies that secure the kingdom's finances. Until real economic reform and economic diversification is enacted, Riyadh cannot afford to abandon its short-term market-balancing efforts, efforts which will become increasingly difficult.

RUSSIA

Hello Vladimir...

November 14, 2016 – During their first official phone call, President Trump and President Putin agree on the “extremely unsatisfactory state of relations” between Russia and the United States.

Congratulations

March 20, 2018 — Trump congratulates Putin on his re-election in a phone call and discusses a potential summit with his Russian counterpart, despite questions about the legitimacy of the campaign and Russia’s alleged efforts to manipulate the 2016 U.S. election.

The first time together

July 7, 2017 – Trump and Putin hold their first bilateral meeting on the sidelines of the G20 summit in Germany. During their meeting, which lasted two hours and twenty minutes, the two presidents discussed Syria, cyber security, North Korea and Ukraine.

We All Loved Each Other So Much

Witch Hunt

July 16, 2018 – On the morning of the Helsinki meeting with Putin, Trump tweets, “Our relationship with Russia has NEVER been worse thanks to many years of U.S. foolishness and stupidity and now, the Rigged Witch Hunt!”

The canceled meeting

November 29, 2018
Following renewed tensions between Russia and Ukraine, Trump canceled a meeting with the Russian president that was scheduled to take place during the G20 in Buenos Aires. The two did exchange a few words on the margins of the family photo and later during the dinner with all the leaders.

Peaceful relations

November 11, 2017 – Informal talks between Trump and Putin on the sidelines of the Asia-Pacific Economic Cooperation (APEC) summit in Danang, Vietnam. In a tweet after the meeting, Trump wrote: “When will all the haters and fools out there realize that having a good relationship with Russia is a good thing, not a bad thing?”

The Trump-Putin relationship is more difficult following the midterm election results

The Thaw Can Wait

In his first two years in office, the U.S. president has failed to achieve the rapprochement with Russia he promised to seek during during the 2016 campaign, and there is reason to believe that concrete results on this front will elude him over the next two years

FABIO SQUILLANTE

Editor-in-chief of *Agenzia Nova*, of which he was founder, was correspondent from Moscow for the Italian agency *Ansa* and for the newspaper *La Stampa*, for which he also followed the activities of the EU Institutions from Brussels and Strasbourg. He was responsible for the regional service of the *AdnKronos* agency.

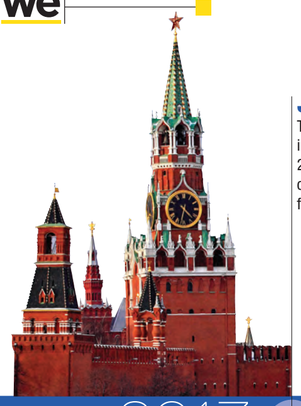
ad his party performed well in the mid-term elections, Donald Trump would probably have accelerated relations with Russia, trying first to avoid nuclear rearmament, and then seeking collaboration on other plans, with a view to gradually overcoming the economic sanctions imposed on Moscow.

The president's party continues to control the Senate, so it is unlikely that the investigation into the relations between members of his staff and emissaries of Vladimir Putin will end with a conviction. The House, however, is now firmly controlled by the Democratic opposition, which will certainly redouble its investigative efforts, aiming at impeachment or, at the very least, making Trump unpopular enough to stop his being re-elected. It is a difficult game to play for the Democrats but also for the president, who had to give up a planned bilateral meeting with Putin at the G20 summit in Buenos Aires.

Domestic and international factors

Just a few days before the summit, on November 25, two Ukrainian patrol boats and a tugboat were forcibly detained by the Russian Navy at the entrance to the Kerch Strait, which separates the Crimea—annexed by Moscow in 2014—from the Russian region of Krasnodar. At least three Ukrainian sailors were injured in the action; the 24 members of the crews were arrested and 15 of them sentenced to two months in prison for crossing the border illegally. The Ukrainian reaction was very tough. President Petro Poroshenko invoked NATO intervention in the Black Sea and declared a state of war in all the regions bordering with Russia and Moldova. Moscow accused him of wanting to prevent free elections in the presidential elections to be held in March, because the regions in which the state of war is in force are essentially Russian-speaking. The polls, moreover, show Poroshenko to be in trouble and seem to favor his rival, Julija Timoshenko, who was vigorously supported by Hillary Clinton when she headed the State Department.

The day after the Russian-Ukrainian naval confrontation, Trump's former lawyer, Michael Cohen, who is involved in the "Russiagate" investigation, changed one aspect of his previous testimony, stating that Trump had intended to build a hotel in Moscow when he was already a candidate for the White House. The two facts—the naval confrontation and Cohen's new testimony—prompted Trump to cancel the meeting with Putin, which had been carefully prepared by National Security Adviser John Bolton during a recent visit to →



January 13
The economic sanctions imposed on Russia in 2014 for its annexation of Crimea are extended for one year.

June 20
The U.S. imposes sanctions on 38 individuals and entities.

July 30
In response to the approval of new sanctions by the U.S. Senate on July 27, Vladimir Putin orders America's diplomatic staff in Russia to be cut from 755 to 455.

August 2
Trump signs the bipartisan bill introducing fresh financial sanctions over Russian interference in the 2016 American elections. After signing the bill, the President releases a statement saying that the bill is "flawed" and adding that "it improperly encroaches on executive power, disadvantages American companies and hurts the interests of our European allies."

August 31
In retaliation for Moscow's decision to cut U.S. diplomatic presence in Russia, the Trump administration orders the closure by September 2 of three Russian diplomatic facilities in San Francisco, Washington D.C. and New York.

October 31
The Trump administration draws up a list of individuals or organizations that are "part of, or operate for or on behalf of, the defense or intelligence sectors of the Government of the Russian Federation" to be sanctioned from January 29.

January 26
21 individuals and 9 companies are added to the list of sanctions against Russia for its annexation of Crimea from Ukraine and its support for separatist rebels.

March 2
Economic sanctions against Russia are extended for one year.

2017

2018

March 15
The United States makes first use of the CATSAA law for "Countering America's Adversaries" passed on January 29. Sanctions are imposed on 18 Russians (13 of whom are under investigation for Moscow's alleged meddling in the 2016 American presidential election) and one company, Internet Research LLC, known as the "troll factory."

March 26
The United States orders 60 Russian diplomats to leave the country.

March 29
Russia orders 60 U.S. diplomats to leave the country.

April 6
The United States designates 24 Russian oligarchs close to Putin for visa bans and asset freezes.

July 5
Russia extends the food import ban from the U.S. and the European Union until the end of 2019.

August 27
The United States imposes a ban on arms sales, arms sales financing, U.S. government credit or other financial assistance and exports of national security sensitive goods.

September 20
The U.S. State Department adds 33 Russian defense and intelligence officials to the list of sanctioned individuals.

September 26
The U.S. Department of Commerce imposes sanctions on 12 Russian companies alleged by the agency to be acting against the interests of the United States.

Two Years of Actions and Reactions

Moscow. The two did manage to exchange a few words on the sidelines of the summit. During the press conference at the end of the Buenos Aires summit, Putin himself gave the U.S. president his version of the facts in the Kerch Strait. It is nevertheless clear that the Democrats—and others besides them—intend to do everything they can to hinder the development of relations between the two leaders. It is difficult for staff alone to find agreements on complex issues, despite the two leaders speaking to each other and having shown on several occasions that they can find common ground. It happened in Syria, for example, where Russians and Americans conducted military operations for months without incident. This cooperation also took place in the management of oil prices, an area in which Putin accepted Trump's request to restrict prices. The Russian budget, moreover, has been set to hold at a price of 40 dollars a barrel, about half what is needed by Saudi Arabia to avoid spending cuts and an increase in its deficit.

Trump would like Russia to become a strategic ally in the battle for the containment of China, and Putin is well aware of the history of his country, which was dominated for some 400 years by an invader from the East. While China has 1.3 billion inhabitants, Russia has just under 147 million, only 36 million of them living in Siberia. The growth of Chinese power is, for Moscow, the strategic risk par excellence, but the hostility of the United States is pushing Russia to establish ever closer ties with China. The level of distrust between the two Asian giants, however, can be seen in concrete decisions, such as the route of the "New Silk Road," which crosses dozens of countries but circumvents Russia.

The containment of China and the role of the E.U.

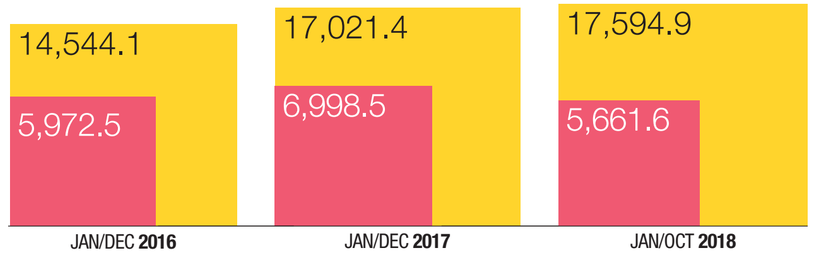
During his first two years in the White House, the U.S. president has failed to achieve the rapprochement with Russia he had announced during the election campaign, and there is reason to believe that concrete results on this front will elude him even over the next two years. The leaders of the two countries may be doing their best to avoid friction, but the objective situation favors competition. In the United States, moreover, no one considers Russia an ally, and the idea of attracting it into the western orbit in order to counteract Chinese growth more effectively should not involve strengthening Moscow's strategic position.

Since the fall of the Berlin Wall, Washington has always done its utmost to prevent even economic integration between Russia and the European Union. Republicans and Democrats have strongly and successfully opposed the creation of the South Stream gas pipeline, which was supposed to bring Russian gas to Italy, across the Black Sea, Bulgaria, Greece and Albania. Similarly, U.S. politicians on both sides are still opposed to the doubling of Nord Stream, the gas pipeline that supplies Germany with gas from Russia through the Baltic Sea, "avoiding" Ukraine and Poland. In repeated communications with German Chancellor Angela Merkel, Trump has insisted that Germany should buy liquefied natural gas from the U.S., rather than cheaper Russian methane. Yet, if not to Europe, Moscow would sell it to China, alleviating that country's dependence on oil imported by sea.

Moreover, Putin may have hoped for Trump to beat Clinton in the elections, but that doesn't mean he is willing to support him on every occasion. As a result of the harsh political battle in the United States, the president is spending more time defending himself against opposition attacks and paying less attention to Putin's maneuvers to diminish the erosion of Russia's area of influence. The occupier of the White House evidently has two priorities: 1) to contain China militarily to hinder its expansionism in the Pacific, diplomatically to remove North Korea from Beijing's protection, and finally to limit the commercial and economic strength of the country; 2) to reduce the "independence" ambitions of the European Union and keep the continent firmly in the West and under Washington's control. According to Trump's strategists, this is the only way to win the battle with the Chinese, and they are probably right.

As for Russia, the thaw can clearly wait and, while waiting for relations with the U.S. administration to strengthen, which could come with a second term presidential mandate for Trump, it can be kept at bay with sanctions, with the heavy military engagement in Syria and with the continuing tensions along the band that runs from Finland to the Caucasus, through Poland, Ukraine, and Romania.

TRADE IS GROWING AGAIN
In spite of sanctions, trade between the United States and Russia has started to increase again, although it is still not back to 2014 levels.



IMPORT EXPORT (million U.S. $)

Source: U.S. Census Bureau

Tsar Vladimir between triumphs and shadows

Following his triumph in the presidential elections last March, which saw him returned to power with 77 percent of the vote, Vladimir Putin began his fourth term by focusing on economic growth and budget consolidation. Among his efforts was a reform of the pension system, which, having significantly raised the retirement age, caused considerable discontent. The budget was set to ensure balance even with an oil price at $40 a barrel. An approach which, incidentally, was also useful in the discussions held with Donald Trump, who called for a reduction in oil prices. For Moscow, in fact, it was easier to agree to the cut demanded by Washington than for Riyadh, which can only balance its budget if the price per barrel is $80.

Despite the discontent about pension reform and the defeats suffered by his party, United Russia, in some local elections, Putin maintains a firm grip on power and broad popular consensus, a consensus also supported by controversies in the West regarding cases such as doping among Olympic athletes. The economic sanctions adopted following the annexation of Crimea in 2014 caused the national economy to contract significantly and led to a sharp drop in the ruble, which increased the cost of imports, but favored exports. The government has launched an extensive program of subsidies for agricultural and industrial companies in an attempt to encourage the production of good quality mass consumer goods and to reduce the country's dependence on imports from abroad.

The military intervention in Syria has allowed Russia to resume a leading role in the Middle East, maintaining a strategic position in the Mediterranean. The conflict also showcased the country's military, one of the few cutting-edge industries in Russia. Putin has also shown that he is able to deal with such diverse interlocutors as Iran, Turkey and Saudi Arabia, maintaining cordial relations and collaboration with all three.

His greatest failure lies perhaps in not being able to restart relations with Washington. The head of the Kremlin placed his bets on Donald Trump winning the 2016 presidential elections, but investigations into the so-called "Russiagate" have so far prevented Trump from starting a constructive dialog with Putin, and this is unlikely to happen before the end of the U.S. president's current mandate.

Putin's other serious failure lies in the ever closer relations between Kiev and the West. Despite annexing Crimea and controlling the separatist areas of the Donbass, Moscow has in fact lost its influence over Ukraine, a country which is crucial to Russia's strategic security. Moreover, economic support for regions torn away from Kiev is adding to the costs that Russia bears for sustaining the separatist republics of Moldova (Transnistria) and Georgia (South Ossetia, Abkhazia and Adjara) and military intervention in Syria. The expenditure is considerable for an economy like Russia's; its GDP in 2017 was just 57.46 percent of California's.

FRANCESCO MARINO

The long arm of the U.S. across the Atlantic

A Match on Neutral Ground

The energy battle between Washington and Moscow is mainly being fought in Europe, where the U.S. wants to demolish Russian supremacy, imposing its LNG resources and preventing the development of a network of infrastructure, starting with Nord Stream 2

NICOLÒ SARTORI

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In recent decades, Europe's dependence on Russian gas has been a cause for concern, as well as a driver of foreign policy, for the various administrations installed in the White House. You only need to look back a few years to understand the roots of this situation and revisit the first steps taken by Washington to stem the energy power of Moscow over its European allies. The race to control the resources of the Caspian—which began in the 1990s following the collapse of the Soviet Union, and materialized in the signing of the "Contract of the Century" and the construction of the Baku-Tbilisi-Ceyhan oil pipeline—is only the first step in a saga which has seen the two former superpowers clash, sometimes via proxies, on the energy chessboard of the European continent. In recent years, thanks to the shale revolution started in the mid-2000s, American pressure has intensified, peaking with the 2013/14 crisis in Ukraine and the Obama administration's promises of large volumes of American liquefied natural gas to reduce the allies' dependence on Moscow.

Washington's energy shadow over Europe

But U.S. attention to European dependence on Russian gas pre-dates the shale "boom" and Washington's potential interest in exporting LNG to Europe. Already in the first half of the 2000s, with the emergence of European concerns regarding security of supply, Washington's diplomatic action focused on diversifying the supply of gas in Europe through the creation of alternative routes to the supplies coming from Moscow. The creation, in 2008, of the figure of the U.S. Special Envoy for Eurasian Energy—entrusted in the first instance to C. Boyden Gray—and the diplomatic activism of his successor Amb. Richard Morningstar, are clear evidence of the importance of the dossier for Washington. This importance has been recognized, it must be emphasized, by both the Republican administration of George W. Bush and the Democratic one of Barack Obama, and up to today's approach—albeit ambivalent towards Moscow—taken by Donald Trump. Washington's action was initially focused mainly on promoting the Southern Gas Corridor—a network of gas pipelines envisaged by the European Commission to transport volumes of gas from the Caspian Basin and Central Asia to Europe—and on supporting the implementation of the Nabucco project, which failed miserably in 2013 and has now been replaced by its younger brother (in terms of transport capacity) TAP, in which the last two occupiers of the White House have invested substantial political and diplomatic capital. Donald Trump's encouragement to Italian Prime Minister Giuseppe Conte, on a visit to Washington last July, to achieve early completion of the Trans Adriatic Pipeline, is just the latest manifestation of American interest in opening the south-eastern supply route. Also in southeastern Europe, it is important to highlight Washington's attempts to resolve the energy stalemate in the eastern Mediterranean. With the discovery, in 2015, of the huge Egyptian Zohr gas field - in addition to other minor discoveries made in Israeli and Cypriot waters - a new energy region has been created at the borders of Europe (and, as far as Cyprus is concerned, within it). The strategic value of the Eastern Mediterranean in achieving the European objective of diversifying from Moscow has obviously not escaped Washington, which, building on its strong ties with Israel and the presence of American oil majors in the region, has expended a lot of energy in encouraging cooperation between the different actors involved in the match. In this context, it is worth highlighting the constant action by Amos J. Hochstein, appointed by Obama as U.S. Special Envoy for International Energy Affairs, with a clear operational mandate in the Eastern Med region.

Frontal collision on the geopolitical front

While American diplomatic pressure on these two fronts has attracted little media attention, Washington's opposition to the Nord Stream 2 project has been widely reported. As regards the Southern Gas Corridor and the Eastern Mediterranean, in fact, energy relations between Moscow and European countries are only indirectly (and in a marginal sense) affected by American action, while the United States' manifest hostility to Nord Stream 2 has led to a head-on confrontation with Russia. American pressures on the project, in particular, intensified when the two former superpowers were set on a collision course by the crisis in Ukraine and the annexation of Crimea: President Obama himself, his deputy Joe Biden and Hochstein himself openly opposed the construction of the gas pipeline, proposing that Europe strengthen its energy trade across the Atlantic Ocean.

With the advent of Donald Trump to the White House, American rhetoric towards Moscow has become ambivalent. The tycoon's attempts at a rapprochement with the Kremlin are met by fervent bipartisan positions against Russia in Congress, which, after Democratic control of the House of Representatives was restored following the midterm elections (in its first month of work, the new lower house has promptly adopted a resolution against Russian-German conduct) could tighten action against Moscow. The centrality of the Nord Stream 2 issue for the Republican administration as well was in any case confirmed at the NATO summit last July, during which—with his usual "colorful" rhetoric—President Trump underlined the danger for Germany to depend on the supply of Russian gas. Criticizing Berlin's decision to proceed with the project, and highlighting its negative implications for key White House allies in Central and Eastern Europe, such as Ukraine and Poland, Trump sent a clear message to European partners. While avoiding a head-on clash with Moscow, the President offered a series of incentives for Europe to import of American LNG, in order to open new markets for U.S. producers, which at the same time limiting Russian energy penetration in Eu- →

After the first bilateral meeting with Italian Prime Minister Giuseppe Conte in Washington on July 30, 2018, Trump spoke of a "new strategic dialogue."

rope. In this light, Berlin's decision to build a regasification terminal on its shores could represent a gesture of détente towards the United States—as suggested by the German Minister for the Economy Altmeier—reflecting Berlin's intention to open its market to American LNG, while not renouncing the plan to double up the Baltic pipeline. This is an outcome that Trump could welcome.

European prospects

It is important to point out, however, that the E.U. is not single-minded when it comes to the role of Russian gas in Europe. Quite the opposite. Different energy profiles, and different sensitivities and perceptions regarding the power exercised by Moscow, determine a multiplicity of national and regional approaches towards Russia that are difficult to place in a single relational scheme. On the one hand, there is Germany, the main target of Trump's attacks, which, despite being heavily dependent on Russian gas supplies, is also the main destination market (and the largest source of revenues) for the Kremlin. Given this strong energy and, in fact, economic and financial, interdependence with Russia, Berlin is seeking to consolidate its role as a dominant energy player in Europe and a privileged interlocutor with Moscow. The creation of Nord Stream 2 is an essential element of this German soft-power strategy, offering Germany the position of a monopsony in respect of all Russian gas flowing into Europe (with the exception of that destined for Poland, Finland and the Baltic States), which would guarantee the Germans not only massive geopolitical capital on the continent, but also (and above all) an economic and industrial competitiveness lever that the German authorities do not intend to let slip. And which Washington certainly does not appreciate. An intermediate approach has been adopted by Italy, whose historic energy partnership with Russia and strong dependence on the gas sector leave no room for tolerant attitudes towards Nord Stream 2. The construction of the pipeline, coinciding with the potential suspension of the Ukrainian route after 2019, would make Italy totally dependent on gas flowing from Germany, with all the commercial and industrial implications that would ensue. This outcome is obviously not welcomed in Rome, which is (also) counting on the actions of its transatlantic partner to sink Nord Stream 2 and German plans for energy hegemony in Europe, and to keep gas flowing through Ukraine. And then there are the central-eastern European countries, led by Poland. On the one hand, the central-eastern block fears the re-emergence of a twentieth-century Russian-German encirclement, albeit based on energy. On the other hand, it wants to prevent financial losses caused by the potential suspension of the Ukrainian route and the loss of transit tariffs on gas directed to the west. These countries are eager to free themselves from imports of gas from Moscow—often the only supplier for their national markets—and have a clear interest in American LNG as a way of diversifying and increasing the flexibility of their supply. The construction of the regasification terminals in the Baltic off the coast of Poland, Lithuania and Finland runs counter to the installation of the new Nord Stream 2 pipelines in the same basin. But while from a geopolitical point of view, the construction of the Świnoujście, Klaipeda and Tornio LNG terminals (ready to be supplied with American gas) is an important step for Washington's interests in Europe, because it will effectively reduce the energy dependence of central-eastern Europe on Moscow, from a commercial/industrial point of view—so dear to the Trump administration—the positive implications for the United States are much more limited. These markets are small: just over 25 bcm of annual consumption from Finland to Hungary, with a ship import capacity of just over 10 bcm. Nothing like the market for over 110 bcm that Moscow currently has in Europe (Germany first and foremost with 54 bcm) and which it is ready to consolidate by doubling the capacity of Nord Stream (currently 55 bcm). These structural limitations are compounded by Russian countermoves, starting with the renegotiation of supply contracts with regional partners—prices in Lithuania have dropped by 20 percent—to try to displace American competitors by pipeline, and above all the acceleration in the construction of the Yamal liquefaction terminal, which also allows Russia to strengthen its presence on the global LNG market and—at least potentially—competes with the United States in the European market as well.

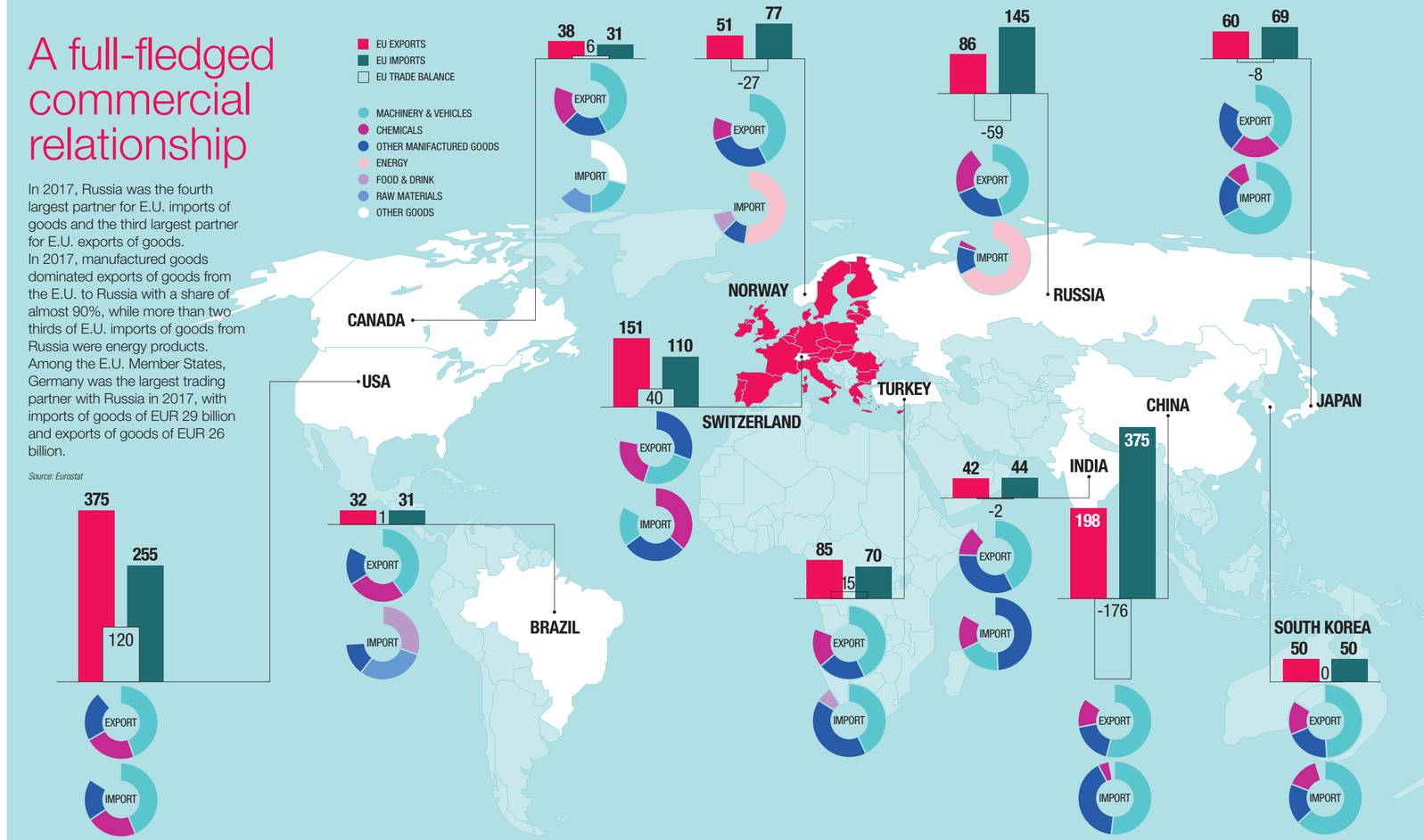
Back to the roots

Despite U.S. rhetoric on the opportunities offered by their LNG as a tool for diversification from Russia, and the (apparently vain) attempts to stop the construction of Nord Stream 2 by Washington, the strategic scenario in the north-eastern area now appears quite clear. It is hard to imagine the balance of power changing substantially, the Moscow-Berlin axis being dented and American gas penetrating those markets to any great extent. In this context, the only concrete action open to the transatlantic ally is to continue supporting the alternatives set up by European partners to diversify, both from Moscow and from Nord Stream 2: completion of the Southern Gas Corridor and development of the Eastern Mediterranean, as well as exploiting the Turkish Stream option and maintaining the Ukrainian route, are all areas in which constructive action by Washington can bring added value.

A full-fledged commercial relationship

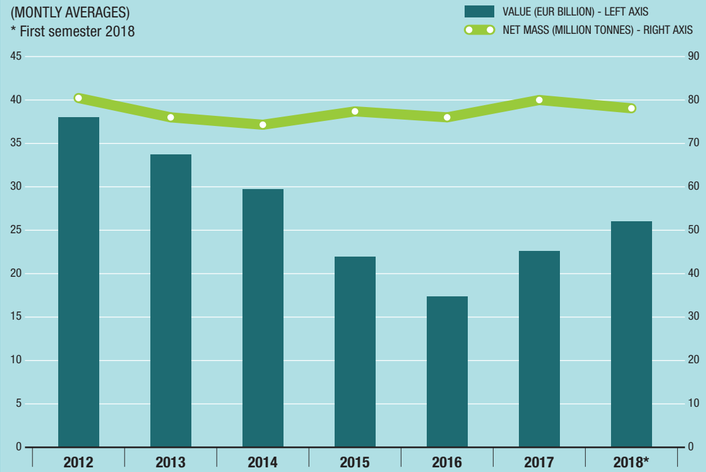
In 2017, Russia was the fourth largest partner for E.U. imports of goods and the third largest partner for E.U. exports of goods.
In 2017, manufactured goods dominated exports of goods from the E.U. to Russia with a share of almost 90%, while more than two thirds of E.U. imports of goods from Russia were energy products.
Among the E.U. Member States, Germany was the largest trading partner with Russia in 2017, with imports of goods of EUR 29 billion and exports of goods of EUR 26 billion.

Source: Eurostat



EXTRA-E.U.28 IMPORTS OF ENERGY PRODUCTS

(MONTLY AVERAGES)
* First semester 2018



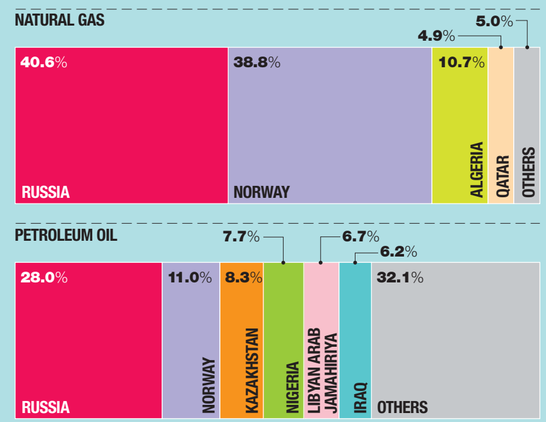
E.U. energy

Crude oil largely dominates E.U. imports in energy products with a share of 70% in 2018, followed by natural gas with 20%.
Russia remained in 2018 the largest supplier of natural gas and petroleum oils to the E.U., ahead of Norway.

Source: Eurostat

EXTRA-E.U. IMPORTS FROM MAIN TRADING PARTNERS

SHARE (%) OF TRADE IN VALUE
First semester 2018



CHINA/NORTH KOREA

2017

January 17 – From the stage of the World Economic Forum in Davos, Xi Jinping launches a harsh attack on protectionism. "Nobody will emerge a winner in a trade war," says the Chinese president, who presents himself as the standard-bearer of globalization, "a vast sea from which no one can escape."

January 20 – Donald Trump's presidency begins.

February 10 – During a "long and cordial" telephone conversation with Xi, Trump reassures the Chinese president of his desire to honor the "one China" policy, after having touched upon the diplomatic crisis over Taiwan. This is the U.S. president's first official contact with Beijing since his inauguration.

April 6 – Trump meets Xi for the first time at his Florida resort and describes him as a "good man," urging him to use Beijing's influence on the North Korean leader, Kim Jong-un. The objective? To put the brakes on Pyongyang's nuclear program.

July 4 – North Korea launches its first intercontinental ballistic missile (ICBM) with the capability to hit the U.S.

July 8 – Trump-Xi face-to-face meeting on the sidelines of the G20 in Hamburg, Germany. The two leaders agree to continue working on the Pyongyang nuclear threat and trade tensions.

July 31 – North Korea launches its second ICBM in three weeks.

August 2 – The U.S. begins investigations into infringements of intellectual property to the detriment of U.S. companies under section 301 of the U.S. Trade Act.

August 9 – Trump responds to missile threats from North Korea: "Threats will be met by fire and fury."

October 24 – The 19th National Congress of the Communist Party of China (CPC) ends. Trump calls Xi to congratulate him on his reappointment as secretary general of the Party. Xi Jinping's "Thought on Socialism with Chinese Characteristics for a New Era" is written into the statute. Xi's status in the party is elevated to that of Mao Zedong and Deng Xiaoping.

November 8 – Donald Trump meets Xi Jinping in Beijing on his first Asian tour, which lasts until November 10, and signs a series of trade agreements for over USD 253.4 billion. "Relations between China and the United States are at a historic new starting point," declares Xi.

Energy at the center – The main memorandums of understanding signed between China and the U.S. include a USD 7 billion plan by the State-controlled China Petroleum & Chemical Corp (Sinopec) to build an oil pipeline and several terminals from the Texas oil field. China is now the biggest buyer of U.S. crude.

2018

January 1 – In his speech to the nation, Kim Jong Un reiterates that he has the nuclear button on his table, but also opens the possibility of involving North Korea in the winter games in Seoul.

January 3 – The U.S. president responds to Kim's threats with one of his customary tweets: "North Korean leader Kim Jong Un just stated that the nuclear button is on his desk at all times. Will someone from his depleted and food starved regime please inform him that I too have a nuclear button, but it is a much bigger and more powerful one than his, and my button works!"

January 16 – Xi calls Trump and tells him: "Let's ease the tension in Korea together."

February 9 – At the Winter Olympics in Pyeongchang, the stadium is jubilant about the joint parade between the North and South. The Olympic thaw between the two Koreas is staged.

March 8 – Trump announces 10% tariffs on steel and 25% on aluminum imports from which several countries are subsequently exempted, but not China. Beijing reacts immediately. The Chinese government announces that it will give a "legitimate and necessary" response to defend its interests against protectionism by Washington.

March 9 – A telephone call between Trump and Xi on North Korea. The former tells the Chinese president that "dialog is good but pressure must be maintained."

March 17 – The National People's Congress re-elects Xi Jinping as president of the People's Republic of China (PRC) and abolishes presidential term limits (previously the president couldn't serve more than two consecutive terms), Xi, who is also general secretary of the CCP and president of the Central Military Commission, increasingly consolidates his power.

March 22 – Trump signs sanctions and tariffs against China worth USD 60 billion, announcing a 25% increase in tariffs on Chinese products which, according to Washington, are made by illegally using American patents.

March 23 – The Ministry of Commerce in Beijing considers imposing tariffs on 128 products imported from the United States, valued at three billion dollars in total, targeting the agricultural sector (Trump's electoral base in the Midwest) and Boeing aircraft in particular.

March 28 – Secret summit between Xi Jinping and Kim Jong-un in Beijing. Xi is the first leader to meet the North Korean leader, whose aim is to sit at the table of the powerful with equal dignity, achieve recognition for his country as a nuclear power, remove the sanctions regime and ensure the regime's survival. The message to the United States is clear: every move on North Korea has to pass through Beijing.

April 3 – The Trump administration delivers its hardest blow to the Made in China 2025 manufacturing development plan with the publication of a list of 1333 products imported from China, the vast majority in the technological sector, which may be subject to 25% tariffs and are valued at around USD 50 billion in total.

April 4 – Eleven hours later, China publishes a list of 106 U.S. products that will be subject to a 25% tariff, also amounting to around USD 50 billion.

April 10 – A promise of greater access to the Chinese market, reduction in tariffs on imported cars, greater guarantees on the protection of intellectual property and criticism of the cold war mentality, judged to be "out of place" in the current context. These are in summary the statements made by Xi Jinping in his highly anticipated speech to the BOAO forum on the Chinese island of Hainan. Trump says he is "very thankful" to the Chinese president "for his kind words."

April 27 – The historic handshake between the leader of North Korea, Kim Jong-un, and the South Korean president, Moon Jae-in, marks the beginning of a "new history" on the Korean peninsula. The resumption of denuclearization talks and the commitment of a lasting peace result in the Panmunjom Declaration. Seoul also aims to remove international sanctions that prevent trade with North Korea. The differences between the U.S. and its South Korean ally on the North Korean issue soon become evident.

May 8 – Xi and Kim meet for a second time in the port city of Dalian and discuss nuclear disarmament and the future of the Korean peninsula.

May 20 – China and the U.S. reach a trade truce. Based on the agreement, from July 1 Beijing will reduce tariffs on car imports from the current 25% to 15% and will cut the ones on imports of spare parts.

May 22 – Trump suspects that Xi has urged Kim to cast doubt on the imminent U.S.-North Korean summit in Singapore to obtain more concessions in the sensitive trade negotiations. The U.S. president says so himself while standing beside Moon Jae-in in Washington.

May 24 – North Korea confirms the demolition of the Punggye-ri nuclear site.

May 27 – Second summit between the Pyongyang leader and the South Korean president north of the demilitarized zone that separates the two countries.

May 30 – Trump ends the trade truce with China at the same time that he asks Beijing for support in the delicate nuclear negotiations.

June 12 – The summit in Singapore between U.S. President Donald Trump and the North Korean leader, Kim Jong-un. The two exchange a historic handshake. A joint document is signed but the road to irreversible peace and complete denuclearization of the area is only just beginning.

June 15 – Donald Trump approves tariffs on a long list of Made in China products amounting to around USD 50 billion in value.

June 19 – Xi and Kim meet for a third time. The North Korean leader's visit to Beijing is intended to inform the Chinese president about the summit with Trump in Singapore and to discuss a national strategy.

July 6 – U.S. tariffs of 25% come into force on 818 Chinese imports valued at USD 34 billion.

July 24 – North Korea starts to dismantle the Sohae satellite launch site.

August 23 – Beijing imposes 25% tariffs on USD 16 billion of goods imported from the United States, at the same time imposing equal duties on the same amount of Chinese imports by the U.S.

September 18 – China will impose tariffs of 5% and 10% on USD sixty billion of U.S. goods from September 24, the same day on which the U.S. will trigger tariffs on USD two hundred billion of Chinese products.

September 18 – Third meeting in Pyongyang between Kim Jong-un and Moon Jae-in.

September 19 – "There will be great and fast economic retaliation against China," writes Trump on Twitter. "China rejects unilateral action by the United States on trade and protectionism," declares China's Foreign Ministry Spokesman Geng Shuang.

September 30 – "We liked each other right away, we fell in love. Kim wrote me some beautiful letters," Trump tweets.

October 11 – China has "no intention of interfering in the internal affairs of the United States," declares the Ministry of Commerce spokesman Gao Feng one week after U.S. Vice President Mike Pence declares in a speech that China is using "economic, political, military means and propaganda" to interfere in the internal politics of the United States.

November 2 – After months of fiery statements, tariffs, counter-tariffs and interrupted negotiations, Trump calls Xi to re-open the dialog.

November 7 – A meeting between Secretary of State Mike Pompeo and North Korean negotiator Kim Yong Chol is canceled. The détente process stalls.

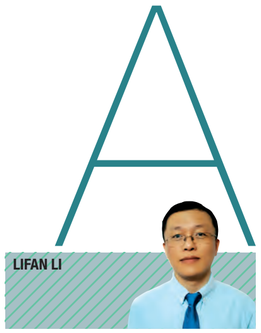
December 1 – Donald Trump and Xi Jinping reach a ninety-day truce in Buenos Aires. "From January 1st, no additional tariffs will be imposed," announces China. The United States will not increase tariffs on USD 200 billion of Chinese products from 10 to 25%. Tariff negotiations between the two superpowers continue with the aim of reaching a definitive agreement in three months. But the outcome is not a foregone conclusion.

The Double Game of U.S. Duties

U.S.-China negotiations: an uncertain outcome

Walking a Tightrope

The 90-day truce reached between Trump and Xi in Argentina allowed the world economy to draw a sigh of relief. The two leaders both want to reach a definitive agreement, but there is a high risk of the battle continuing



LIFAN LI

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At the end of the meeting between Chinese President Xi Jinping and U.S. President Donald Trump, held on December 1, 2018 on the sidelines of the G20 in Buenos Aires, Argentina, the good news quickly spread around the world: contrary to what had been announced, starting from January 1, 2019, the U.S. will not increase tariffs from 10 to 25 percent on 200 billion dollars of goods imported from China. The two superpowers will also enter into negotiations and will only trigger an increase to 25 percent in tariffs if no agreement is reached within 90 days. The two parties will, moreover, intensify negotiations to cancel all tariff increases. For its part, as promised, China will increase its purchases of U.S. products to reduce the trade imbalance between the two countries.

This truce is temporary, but the global economy, destabilized by the Sino-U.S. trade war, can breathe a sigh of relief. A dangerous escalation that could quickly have led to a cold war between the two superpowers has been avoided for the time being.

New hostilities and old grievances

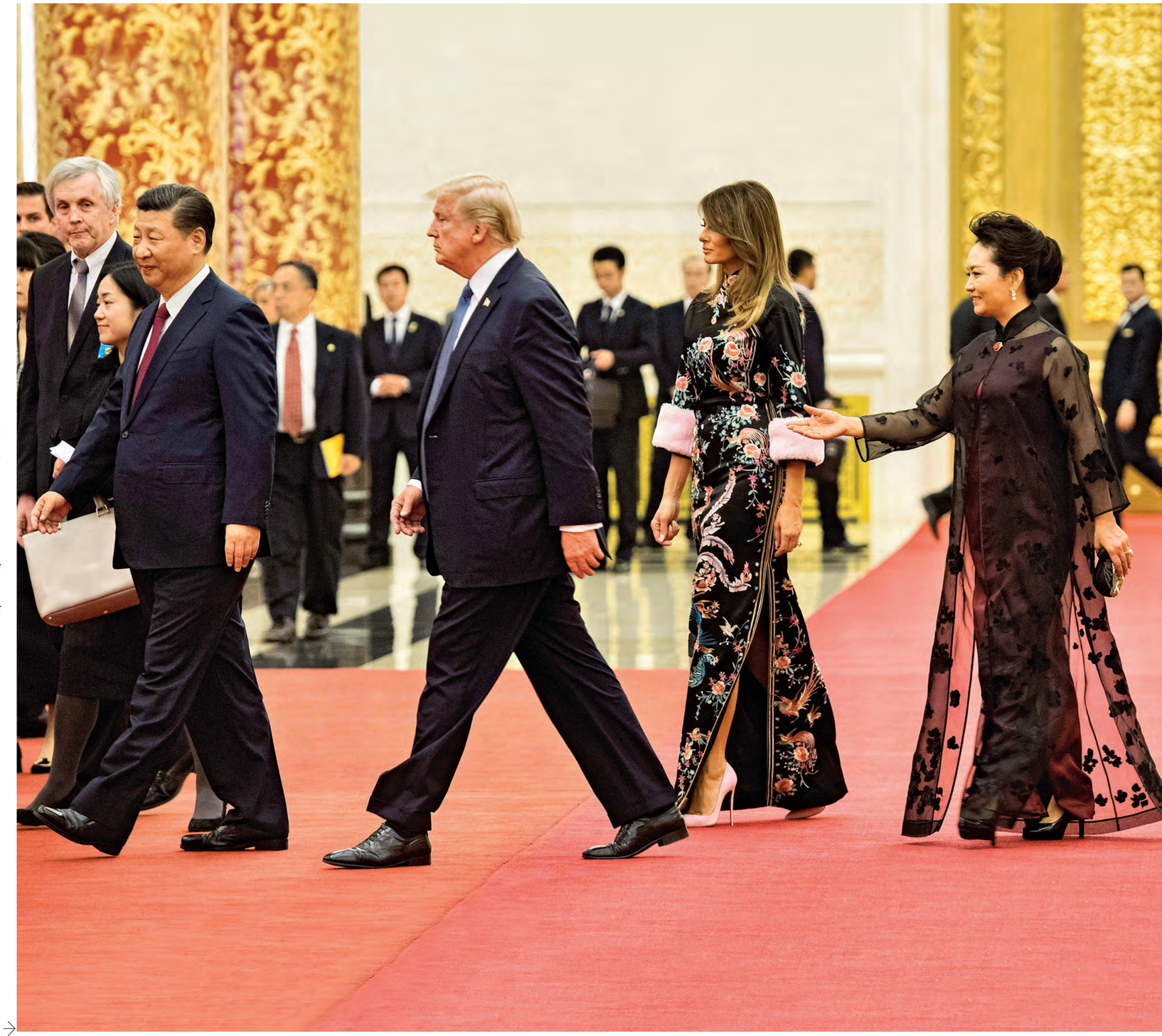
China poses a direct challenge to U.S. hegemony and unilateralism in the economic sector and in terms of geopolitical balance. The objective of the U.S. trade war is undoubtedly to oppose the "Made in China 2025" industrial plan, the manufacturing development program to create a cutting-edge industry by focusing on innovation and artificial intelligence, opposition that would hinder the transformation and strengthening of Chinese industry.

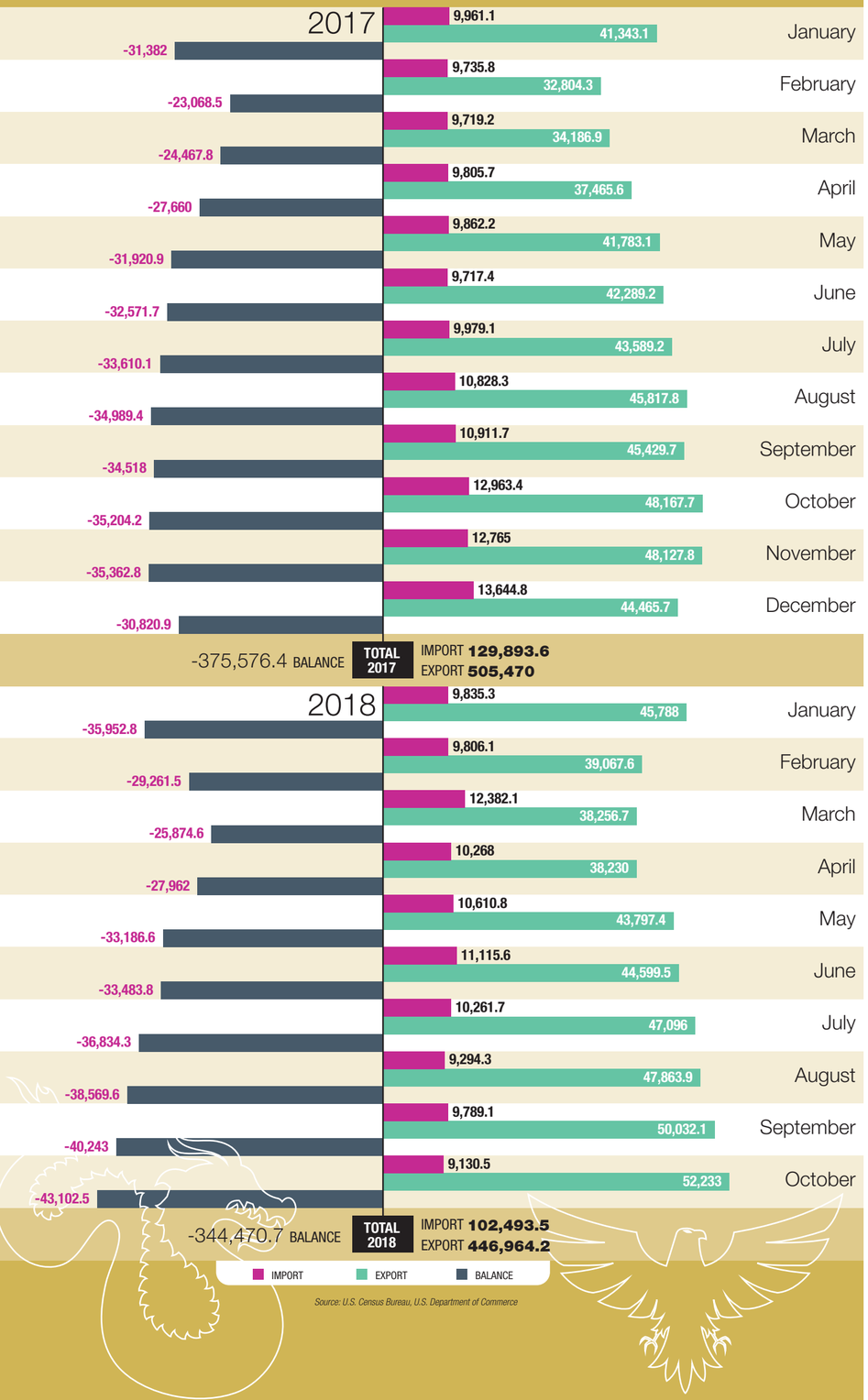
In 1944, the Bretton Woods agreements that led to the creation of the current world order established a system of fixed exchange rates based on the dollar, and the world implemented a long-term mechanism fixed to the dollar. Over the years, in order to play a central role on the world scene, the United States fueled local unrest and wars, deteriorating the climate for dollar investments and causing the Fed to hike rates on several occasions, thereby guaranteeing the safety of savings on the return of capital. As time passed, China completed its second industrial revolution and it was here, not in the U.S., that the growing manufacturing industry started to attract the foreign capital fleeing from unstable areas. The entry of the renminbi (RMB) into the basket of reserve currencies of the International Monetary Fund, on October 1, 2016, shattered the American dream. Industrial weakening and the loss of hegemony on the part of the dollar forced the U.S. to engage in a trade war with China.

The talks held between the leaders of the two superpowers in Buenos Aires were only a start, and it is impossible to predict whether trade negotiations will continue over the next three months or if the two countries will sink back into the vicious circle of mutual reprisals, which could further exacerbate hostilities.

The Chinese position and the importance of the truce

1 | First, the Chinese government has always attached great importance to maintaining Sino-U.S. relations. Less than three months after Trump entered the White House, in April 2017, Chinese President Xi Jinping visited the United States and explicitly stated his intention to maintain and further improve bilateral relations between the two countries. The two parties therefore began a series of negotiations on key issues including diplomacy, security, economy, public order and cyber-security, and Beijing and Washington considered the possibility of working together in the energy sector and in infrastructure-building. In →





November 2017, during Trump's visit to China, the two superpowers signed an economic and commercial cooperation agreement worth 250 billion dollars.

However, this did not prevent the U.S. from launching a trade war against China and reopening a long series of disputes that have marked the history between the two countries, raising concern nationally and internationally about the potential for a full-scale clash between the two superpowers. For its part, China has declared that it does not want a trade war with the U.S., not so much out of fear as out of the risk of paying too high a price.

The Sino-U.S. summit in Argentina notched up many successes on the economy, trade, international politics and security. It is however only a truce, not the end of the war. In fact, although the two heads of state agreed to suspend new tariffs for at least three months, the ones in force will remain unchanged. The two delegations will intensify negotiations, and China's objective is to cancel the tariffs imposed this year and restore normality to economic and trade relations as soon as possible for everyone's benefit.

2 | Second, China is conducting the negotiations along three basic lines: (1) reducing the trade imbalance, increasing imports of U.S. products but without decreasing exports; (2) continuing to promote the "Made in China 2025" plan and defending its right to strengthen industry and development; (3) rejecting the U.S. demand to reduce the "trade surplus by 200 billion dollars."

3 | Third, China claims its extraterritorial jurisdiction over many international economic and commercial transactions, including acquisitions, and is aware that these worry the United States, particularly in the high-tech sector. China is willing to approve the acquisition of NXP by Qualcomm, which it had previously opposed. The merger was approved by the world's eight major regulatory authorities, including the United States, European Union, South Korea, Japan and Russia. Only the Chinese government denied authorization, obliging Qualcomm to abandon the transaction on July 25, 2018. Now Beijing has given its clearance.

4 | Fourth, the Sino-U.S. trade war has encouraged investment and the production of alternative high-tech products imported from China, accelerating the adaptation and strengthening of Chinese industry and promoting the entry of talent. This is happening not only in information technology (chips and artificial intelligence) but in the automotive and energy industries as well. The trade war has also allowed China to considerably expand its access to foreign capital markets and to consolidate the results of the reforms launched 40 years ago. The increased openness of the Chinese economy could attract more investments to the automotive, IT and other industries.

Xi: geostrategic vision and trouble at home

The meeting between the leaders of the United States and China, on the sidelines of the G20 in Buenos Aires, marked the beginning of a "truce" in the trade hostilities between the two powers and seemed to curb the allegedly hegemonic ambitions of Chinese President Xi Jinping. While these ambitions are dreaded by Donald Trump's America, Trump himself has never hidden his esteem for the Chinese leader. For decades, Beijing's leadership has built on Deng Xiaoping's strategic philosophy. This doctrine, which favored a low-profile posture in foreign policy, has been gradually replaced by the Chinese government, as demonstrated most recently during the XIX National Congress of the Communist Party in October 2017. On that occasion, Xi announced to the world his ambition to "achieve modernization by 2035," to become a global power by 2050 and to develop global technological and military primacy. For the first time, the President illustrated his vision of a Chinese superpower—one that many view as offering a direct competitor to the United States (particularly in light of his previous remarks in defense of globalization at the 2017 World Economic Forum). "No one can tell us what to do," said Xi, in his recent 90-minute speech in the Great Hall of the People of Beijing, which celebrated 40 years of reform and opening up and the "miracle" called the Communist Party that "leads everything." It also offered an indirect message to the White House.

The tariffs imposed on Chinese imports by the Trump administration, however, have caused significant harm to the Chinese economy, and in recent months have even provoked unusual dissent on the fringes of the Communist Party of China, a political machine that remains opaque. A degree of discontent was most recently expressed by Long Yongtu, the former Chinese deputy minister who negotiated Beijing's entry into the World Trade Organization (WTO) in 2001, to the point that many analysts questioned China's domestic strength in contrast to its growing global influence, reflecting its clear geostrategic vision The Belt and Road initiative connecting Asia, Africa and Europa demonstrates above all the new drive towards Chinese globalization.

However, the rapid militarization of the South China Sea, the creation of the "pearl necklace" to Africa, and the fact that countries like Sri Lanka and the Maldives are falling into the "Chinese debt trap," are leading the main regional powers to join forces in a four-sided policy of containment of China in which Japan, India and Australia are participating to a different extent. After the G20 summit in Buenos Aires and the ASEAN and APEC summits last November, Chinese ambitions are likely to be scaled back. On the economic front, Beijing has agreed to make significant concessions on trade and the protection of intellectual property to prevent the imposition of new duties by the U.S. On the geopolitical front the United States has raised the profile of its military presence between Japan and the Taiwan Strait, the area where this decisive geopolitical game is being played.

LIVIO CIPRIANO

Reckoning with the future

Donald Trump's populism and the "containment" policy towards China appear to have increased the friction between China and the United States, but actually the problem is rooted in fear among Americans, who besides wanting to curb the Chinese economy also expect it to make continuous adjustments. How can this situation be dealt with?

The country has first to respond to the provocation with necessary countermeasures, demonstrating its hard power. Furthermore, China has to learn from the experience of Japan. After World War II, Tokyo adopted fixed exchange rates and introduced strict import barriers. In the 1980s, the trade deficit between the U.S. and Japan amounted to almost 60 percent, enough to cause serious tension between the two countries. Despite "voluntary" restrictions on exports, the appreciation of the yen and a less than rigorous fiscal policy, Japan's economic policy failed.

China must therefore concentrate its efforts on preventing the creation of an economic bubble by implementing a stable and prudent monetary and exchange rate policy, promoting a process of financial liberalization, increasing importation of U.S. products, making legislation on foreign investments less rigid (including in the financial sector), gradually lowering tariffs on products from the United States and reducing the trade deficit between the two superpowers. The promotion of the Regional Comprehensive Economic Partnership (RCEP), the Asia-Pacific trans-regional free trade agreement, must be the starting point for strengthening the creation of a free trade area with neighboring countries. In addition to developing multilateral trade relations with the E.U., Canada, Mexico and other countries, China will have to speed up the establishment of free trade areas and free ports within its national borders.

The role of the WTO

It will be necessary to take into account the legitimate claims that can be resolved for the benefit of China. Beijing must learn to make use of the multilateral rules of the World Trade Organization (WTO) to protect the globalized economic system and to discuss protectionist measures that hinder free trade. Appeals can also be made to international organizations such as the WTO itself against the violations of the rules in the trade war unleashed by Washington. The extraordinary successes achieved thanks to the reform and openness of the last 40 years show that liberalizing the economy is in China's interest and that the country can, and must, continue to accelerate this process at both national and international levels. Many foreign companies operating in China complain that they are often forced to transfer their skills, and Beijing recognizes that these "business requirements" actually violate WTO rules. It is time to react firmly.

Keyword: multilateralism

China has to change its model of importing U.S. products, moving from technology to raw materials. In fact, importing U.S. LNG would contribute to reducing the trade surplus vis-à-vis the U.S., and would constitute a redistribution of global supplies of natural gas. However, since China is the world's largest market for many →

TWO INTERCONNECTED DEVELOPMENTS

Trade tensions between China and the U.S. are intertwined with the delicate diplomatic game between Washington and Pyongyang. It is no coincidence that after the meeting between Trump and Xi that led to the agreement to a 90-day truce in the so-called tariff war, China offered its assurances that Beijing would support the U.S. President's efforts to have a further meeting with North Korean leader Kim Jong-un, which is expected to take place in January or February. China and South Korea also played a leading role in the first historic summit between Trump and Kim, held in Singapore on June 12, 2018, the first ever meeting between the two leaders.

raw materials, adopting the same strategy in the trade of such goods would create an even more serious problem, as it would harm the interests of other suppliers. Trump is probably hoping that Beijing will adopt a discriminatory trade policy towards products such as Australian foodstuffs or European aircraft, decisions which would result in the end of the liberal system of global trade.

To reach an agreement with the United States and its allies, China can take the path of multilateralism. It is not possible, in fact, to solve the trade surplus problem for standard products such as steel, with unilateral or bilateral attempts. As an emerging global power, China can play a central role in liberalizing trade, consolidating the free trade system and improving the health of the world economy. Moreover, operating on a global scale has another potential advantage: while it is difficult for major powers to reach an agreement through bilateral negotiations, as they often consider concessions shameful, in a global context making the necessary concessions is considered a necessary sacrifice for the common good.

Finally, China must try to ally itself with Europe, improving the conditions for E.U. companies operating in its territory. European support could contribute to reducing Trump's distrust. If Beijing complies strictly with WTO rules, Europe will find itself in an uncomfortable position because, on the one hand, Europeans and Americans express the same fears about Chinese intellectual property policies, on the other they continue to believe in International Organization standards. In other words, if China and Europe defined some common standards, Europe would support Beijing. Trump's trade policy is clearly a factor of extreme instability in the current context of international relations, but China must take account of global interests and think of the long term.

The obstacles in the truce

In focusing on long-term development needs in this epic trade war, China should examine the U.S. measures from two points of view, that of an adversary and that of an emerging power in the international political and economic system. This second perspective requires it to take a leading role in the development of the international political and economic system, evaluating the successes or failures of the United States, and profiting from its experience.

Protecting intellectual property is the first gap to be filled, and China will have to intervene actively to resolve an issue that concerns the Americans. On the day the truce was reached, as many as 38 government departments, including the National Development and Reform Commission (NDRC), issued joint political declarations that will impose more severe penalties, such as restrictions on the purchase of real estate abroad, in the event of serious violations of intellectual property. Furthermore, China will regularly publish a list of "unreliable subjects."

The country will also have to increase its import of agricultural and energy products from the United States. As retaliation for Washington's trade war, Beijing has imposed tariffs on some U.S. agricultural products; those on pork, for example, amount to 62 percent. Given the recent outbreak of African swine fever in China, it is estimated that in 2019, pork imports from the U.S. will increase considerably, reaching 9.384 tons during the year according to the latest contract. And during →

A man of the people face to face with the world

After his famous 2018 New Year's address, North Korean leader Kim Jong-un has transformed from a leader focused exclusively on domestic affairs into a skillful diplomat. Over the course of 2017, Kim challenged the United States under President Donald Trump with his nuclear experiments, causing concern among the countries in the region and even irritating his historical ally China. Then, after achieving sought-after nuclear power status, which finally enabled him to sit at the table alongside leading global powers (thanks also to an intensive diplomatic effort orchestrated by Seoul and Beijing), he changed his strategy. He opened a dialogue with South Korea and started a process of detente with Washington that culminated in the June 12, 2018 summit with Donald Trump in Singapore, committing to a process of denuclearization, albeit one that remains an ambiguous point in the negotiations. Although at the present time the process of detente seems to be stalling, Kim's goal remains to remove international sanctions against his country and guarantee the survival of his regime.

At the height of the escalation in the war of words with the U.S., Trump threatened to rain "fire and fury" on North Korea, making fun of "little Rocket Man." After the Singapore summit, the relationship between the two men has become more personal and less provocative. In September of last year, Donald Trump wrote on Twitter: "We fell in love."

Not much is known about the 34-year-old leader—even his date of birth and the date of his marriage are unknown. He is thought to have recently had a son by his wife, his third child after a girl born in 2013 and his firstborn son in 2010. One thing is certain: Kim Jong-un was educated at Swiss state schools. On returning to North Korea he attended the military university and joined the race for the leadership of the military hierarchy. He had never left North Korea on state visits before March 28, 2018, when he secretly traveled to Beijing on an armored train to meet with president Xi Jinping. After the Olympic thaw with South Korea, Kim's metamorphosis became clear during his three subsequent meetings with Xi, the three inter-Korean summits, and finally the Singapore summit with U.S. president Donald Trump. There are still many dark sides to his political personality. Around 140 high-ranking officials are thought to have been executed since he came to power. Yet, he seems to have restored a degree of popularity to the regime. After his father's rule, marked by a severe famine, he loosened state control over the economy in order to boost economic growth. But the economic situation worsens severely once you leave Pyongyang.

International sanctions are taking their toll, although China and especially South Korea are seeking to relax sanctions in order to open the North Korean market. Kim has strongly associated himself with the nuclear program, believing he has to defend himself against the possible overthrow of his regime, to avoid the fate of Libyan leader Muammar Gaddafi and Iraqi president Saddam Hussein. He likes to portray himself as a man of the people and is often shown among soldiers, visiting workers at home or cradling babies in hospital. For a role model he seems to look towards his grandfather Kim Il-sung, who ruled North Korea from 1948 to 1994, even imitating his style.

ALESSANDRA SPALLETTA

Impasse between United States and North Korea

While diplomatic efforts between Pyongyang and Washington are stalling, President Moon's trust-building policies seem to have achieved considerable success at the inter-Korean level

Six months after the historic June 12 summit between Donald Trump and Kim Jong-un in Singapore, the process of detente set in motion at the beginning of this year between North Korea and the United States seems to be stalling. After U.S. Secretary of State Mike Pompeo canceled the meeting with North Korean negotiator Kim Yong Chol scheduled to take place on November 8 in New York, the two nations have been locked in an exchange of increasingly frequent mutual accusations. The North Korean regime blames the slowdown in the negotiation process on the strategic choices made by the United States, which, it claims, has not only failed to grant the security assurances agreed between the two countries' leaders in June but is also unwilling to ease its sanctions strategy of "maximum pressure." The United States, for its part, argues that North Korea's reluctance to fully commit to a process of "complete, verifiable and irreversible" denuclearization and its failure to take any concrete steps in this direction during the past months are an insurmountable obstacle for Washington to grant any concessions to the regime. Both contenders believe theirs is a perfectly legitimate stance.

Kim's nuclear program and the burden of proof

Pyongyang's nuclear and missile program has been pivotal in the "parallel development" strategy launched by Kim Jong-un in 2013. This is the regime's main tool of negotiation vis-à-vis Washington and at the same time is a useful guarantee against possible military intervention in the peninsula. Depriving itself of such a key strategic asset at this still preliminary stage of the negotiations would not only make no sense with respect to the strategy so far adopted by the regime, but also endanger its very survival. Pyongyang is convinced it has provided ample proof of its good faith in recent months by dismantling the Sohae missile station and the Punggye-ri nuclear test site. The Americans, on their part, with National Security Adviser John Bolton as the most vocal critic, have sat at the negotiating table with previous North Korean leaders in the past and have come to mistrust Pyongyang's diplomatic overtures, sometimes, but not always, for good reasons. For Washington, the burden of proof lies with North Korea. U.S. diplomats argue that before making any demands, Pyongyang should provide an exhaustive list of the weapons it possesses and commit to a firm plan to dismantle its nuclear arsenal under the direct supervision of international inspectors.

U.S.-South Korea divergence

The two countries inability to find common ground for implementing the points in their joint declaration after the Singapore summit, however, is not the only factor that threatens to jeopardize the entire diplomatic process. In recent months, relations between the United States and South Korea have also grown more tense. After weeks of negotiations the two allies are still unable to find a compromise over the joint defense budget, paid for by South Korea, which President Trump would like to increase from USD 830 million to one billion per annum. Moreover, the ambitious cooperation projects pursued by South Korean president Moon Jae-in for reviving inter-Korean economic and political relations, which are currently leading to gradual arms reductions on the 38th parallel, are being considerably slowed down by international sanctions banning or restricting trade with North Korea. In October, Seoul's attempt to suspend sanctions against the regime was heavily criticized and discouraged by Trump, who stated that without Washington's approval South Korea "could do nothing." The divergence between the two allies mirrors their different perspectives on the North Korean problem. While the United States sees the dismantling of the nuclear capability that would enable North Korea to hit American territory as the most urgent issue, South Korea views the nuclear issue as only one of several areas to be resolved in order to secure rapprochement between the two countries. At least for the time being, the South Korean president has no option but to work at the multilateral level, submitting his projects to the United Nations Security Council for consideration and obtaining case by case exemptions to enable cooperation with Pyongyang. The stalling of the reconciliation process has thus far forced South Korea to postpone to next year three events in which the Moon administration had invested considerable political capital: Kim Jong-un's visit to Seoul, plans for a second Trump-Kim summit and the signing of a joint agreement to formally end the Korean War, suspended in 1953 by an armistice that was never followed up by a peace accord.

Awaiting resolution

Despite the current impasse in the negotiations, the political situation in the peninsula today, twelve months after the last North Korean test, appears to have significantly improved from last year's crisis levels. However, the main challenges to the reconciliation process between the two Koreas and Pyongyang's denuclearization program have yet to be resolved. While progress between North Korea and the United States is slow, President Moon's trust building policies between the two Koreas seem to have been highly successful at the inter-Korean level. Hence, should the strategic divergence between Seoul and Washington grow wider, we cannot assume that South Korea will be willing to sacrifice the results it has so far achieved for the sake of its ally's priorities.

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U.S. were suspended due to trade frictions, imports from Russia increased by 58 percent year on year, reaching 1.73 million barrels per day. This import model needs to be corrected. The meeting between the Chinese and American leaders has already established that China will import USD 1.200 billion of goods, 20 percent from energy.

Neither losers, nor winners

China has to understand that the Sino-U.S. trade truce is positive for both sides and take advantage of this opportunity to adapt to the Western market, review its industrial organization, see foreign capital investments as a positive thing and continue with the "reopening" policy. No one can predict with any certainty what the outcome of the truce will be, but I personally believe it is more likely that "peace" will prevail over a "full-out war" between China and the United States, even though a long battle is highly likely. It's difficult to find a comprehensive and effective solution to such complex problems in just 90 days. However, the next three months will outline the way forward and no one can rule out the possibility that the two contenders might decide to extend the period of negotiations upon the expiration of the deadline.

In the meantime, it is crucial for China to prepare a series of contingency plans, assessing economic and political risks, and to define new methods for stabilizing the financial and commodity markets. Beijing must be clear that the future trade clash with the United States will be a global war that is destined to last for some time. For this reason, China must be ready to protect itself from the most extreme scenarios, such as the imposition of tariffs on all Chinese products exported to the U.S. and that any concerted action by U.S. allies would cause a global trade war between the Asian giant and the West.

In 2019, China and the United States will celebrate the fortieth anniversary of the establishment of diplomatic relations, and the two superpowers must maintain good relations for the moment. However, Chinese companies do not have time to appear too optimistic. The only certainty is that the trade war is a war without winners. Both parties will benefit from mediation and be damaged by confrontation in equal measure. At least for now, the truce between China and the United States allows the giants of Chinese industry to breathe a sigh of relief.

Spotlight on the gas market

In October 2018, China imported no crude oil or liquefied natural gas from the United States. The potential loss on the Chinese market for the United States was in the order of billions of dollars. In 2017, Beijing imported about 3.6 million tons of LNG from the United States, almost 15 percent of total LNG exports from the U.S. The U.S. had therefore become the country's second largest supplier after Australia, relegating Qatar to third place. However, in 2018, U.S. LNG exports to China plummeted. Last August less than 1 million tons were imported, that compared to 2.1 million tons in the same period of 2017. The trade war was beginning to reap its victims.

China is the second biggest market for U.S. crude exports after Canada. In May this year, for example, Beijing imported 427,000 barrels of oil per day from the U.S.

For American exporters, finding alternative markets is a difficult task. In the first ten months of 2018, the share of Chinese imports of Russian crude increased by 16.6 percent compared to the previous year, reaching 1.39 million barrels a day.

In October, after imports from the the 90-day truce this figure could grow dramatically.

Trump-Obrador: so Far, yet so Close

Despite their opposite political origins and the obvious distances on many international issues, Donald Trump and Andrés Manuel López Obrador, the new president of Mexico, have unexpectedly taken many common steps in governing relations between the two countries

Brazil-U.S. Trade

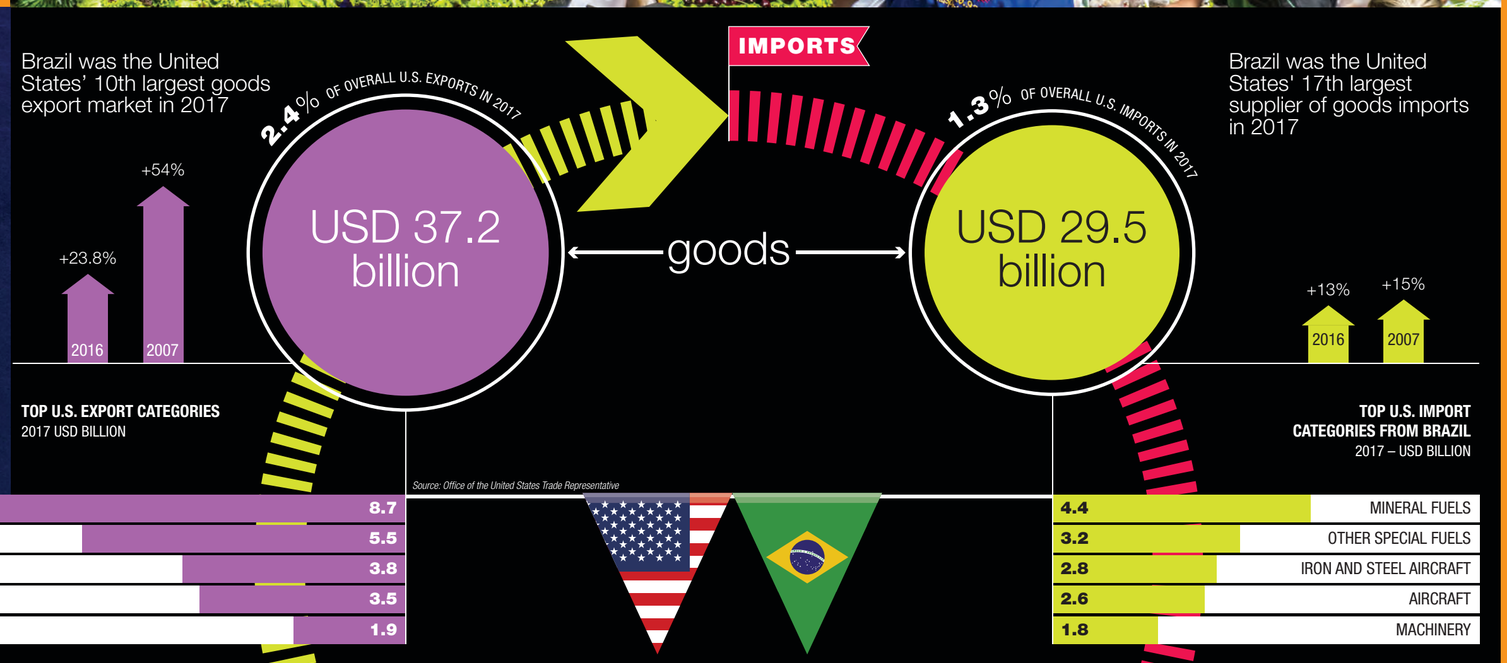
Brazil was the United States' 10th largest goods export market in 2017

2.4% OF OVERALL U.S. EXPORTS IN 2017

IMPORTS

1.3% OF OVERALL U.S. IMPORTS IN 2017

Brazil was the United States' 17th largest supplier of goods imports in 2017



TOP U.S. EXPORT CATEGORIES
2017 USD BILLION

MINERAL FUELS	8.7
AIRCRAFT	5.5
MACHINERY	3.8
ELECTRICAL MACHINERY	3.5
VEHICLES	1.9

Source: Office of the United States Trade Representative

TOP U.S. IMPORT CATEGORIES FROM BRAZIL
2017 – USD BILLION

4.4	MINERAL FUELS
3.2	OTHER SPECIAL FUELS
2.8	IRON AND STEEL AIRCRAFT
2.6	AIRCRAFT
1.8	MACHINERY

Leading services exports from the U.S. to Brazil were in the travel, transport and telecommunications, computer and information services sectors.

Leading services imports from Brazil to the U.S. were in intellectual property (industrial processes), professional and management services and travel sectors.

ECONOMY – Both heads of state put their country first. Like Trump, López Obrador also seeks for his supporters a greater redistribution of the proceeds of globalization held by the country's elites.

TRADE – After more than a year of intense negotiations, the United States, Canada and Mexico have reached an agreement to reform the North American Free Trade Agreement (NAFTA), the pact that has governed more than 1.2 trillion dollars of trade between the three nations since 1994. The new agreement will be called USMCA (United States-Mexico-Canada Agreement).

IMMIGRATION – The two countries are apparently coming to an agreement, within the framework of the negotiations on the reform of the Free Trade Agreement (NAFTA), on defining Mexico as a "third safe country," which would lead to an increase in controls on migratory flows crossing the country, transforming Mexico into a huge filter for the U.S. Furthermore, the White House is looking with interest at López Obrador's proposal for a multi-billion dollar international aid package to discourage Central American emigration.

DIPLOMATIC RELATIONS – Despite the failure so far to appoint the new U.S. ambassador to Mexico City, American Secretary of State Mike Pompeo has already met the Mexican Foreign Minister Marcelo Ebrard at least twice, in a clear sign, as international observers point out, that the White House wishes to maintain close contact with the new Mexican leadership.

REGIONAL SECURITY – A crucial issue, which is currently awaiting the appointment by Mexico City of the new National Public Security Secretariat, the National Guard and the Intelligence Agency. This designation could restart the dialog between the two neighboring countries, both of which are interested in defining a policy for the entire Gulf of Mexico region.

The impact of Brazil's political upheaval on energy

The Risks of Discontinuity

Brazil's new President Jair Bolsonaro seeks to bolster the competitive advantage of his country's oil sector by opening up to new foreign investment, but there needs to be careful vigilance over environmental licenses and ongoing monitoring of the real impact of the oil and gas sector's industrial policies

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hanges in energy policy are on the horizon in most countries in Latin America. In the wake of the presidential elections in Mexico, Brazil and Colombia, new governments have sought to adjust the state's role in oil production and power generation and address the economic impact of rising fuel prices. Chinese investments and financial loan agreements in exchange for crude oil have been key to the development of natural resources in many countries in the region. Yet, access to clean, affordable and reliable energy remains a challenge. All sectors of the economy have been affected by a Brazilian economic-regulatory-political seesaw, and the energy sector is no exception. Brazil is behind the race for foreign investment and economic growth as a result of constant regulatory changes, high level of protection of local industry, a lack of regular bid rounds and its unstable political scenery. Those obstacles have distanced new international investors and have taken from the table the possibility to create a competitive market that would introduce competitive services and prices. However, since the end of 2016, the government has worked at untangling the sector by pursuing more investment. On the upstream, a lot has worked. The market has enthusiastically welcomed news about the end of the sole operator rule for pre-salt, though there is still some distrust about the preferential right guaranteed to Petrobras. There are many operators in pre-salt now, including Chevron, Equinor, Shell, and Total.

Politics and energy, a strained relationship

Yet, the constant political uncertainty hovers over the sector. The last presidential elections gave the victory to Jair Bolsonaro, who beat his rival Fernando Haddad of the Workers Party, PT. There is notorious division in the country between PT and anti-PT. For this reason Bolsonaro managed to reach the Planato Palace with the support of most of his fellow citizens, featuring a popular anti-corruption message. It is worth noting that the common denominator that led to the second round of the 2018 presidential elections was political dissatisfaction. Just to better understand Mr. Bolsonaro, it is important to note that he has voted both against and in favor of the Petrobras monopoly at different moments. In June of 2018, then a pre-candidate to the presidency, he voted in favor of the law which allows Petrobras to sell up to 70 percent of its right areas in the Santos Basin. However, there is still no clear idea of what will be effectively done for the oil sector and for the economy as a whole in the →

The president of change

With the installation of Jair Bolsonaro, Brazil has turned the page. The new head of state – a 63-year-old military man, strongly supported by the important national evangelical movement – had long ago made it clear that his government would abandon the track beaten by previous governments, especially those of Luiz Inácio Lula da Silva and Dilma Rousseff. Flaunting a personal understanding with President Donald Trump, Bolsonaro has returned to seek harmony with the U.S., for many years seen as a competitor in the dispute for the leadership in Latin America.

The president-elect, who received National Security Adviser John Bolton at his personal residence in Rio de Janeiro, has already shared some of the points on the White House agenda, announcing the move from Tel Aviv to Jerusalem of the Brazilian embassy in Israel, expressing caution about the continuity of the Paris climate agreement and warning that he will remain vigilant on the acquisition of Brazilian companies by Chinese companies. Moreover, Bolsonaro has made it clear that he does not regard the Southern Common Market, an organization founded on "ideological" bases, which in his opinion contrasts with the need to have greater margins for commercial maneuver, as indispensable. Not to mention that, in the weeks following the election, Bolsonaro began a political dispute with Havana, culminating in the withdrawal from the country of about eight thousand Cuban doctors enrolled in an international cooperation program signed in 2016.

As for domestic policy, apart from the battle over security, of particular note are the promises made by the future Minister of Economy Paulo Guedes, considered a temple of liberal thought and the inspiration behind an agenda of privatization and public spending cuts. Bolsonaro has entrusted the minister with the task of immediately removing the central bank from the control of the Ministry of Finance, with the appointment of the governor no longer dictated by the executive, but selected within the institution.

On the advice of Guedes, the economist Roberto Castello Branco, a firm believer in the need to privatize even important parts of state companies, will become chairman of the Petrobras energy company. Among other government appointments, a crucial one is that of Sergio Moro as Minister of Justice, with extensive powers over security and corruption. It was Moro who, as the magistrate in charge of the so-called "Lava Jato" investigations, dismantled the political class that was later swept away at the polls by the president-elect himself.

RAFFAELE BERTINI

Two great friends

The United States and Brazil have traditionally enjoyed strong economic and political relations. The United States was the first country to recognize Brazil's independence in 1822. The two nations work together on key issues at the global, multilateral and regional levels

DEFENSE
In September 2016, U.S. and Brazilian officials inaugurated a bilateral Defense Industry Dialogue, designed to improve coordination with the private sector and facilitate trade in the defense industry. The Dialogue met again in Washington in October 2017. In addition, Brazil and the United States restarted their Disarmament and Nonproliferation Dialogue and Political Military Dialogue in September and October 2017 and signed an Exchange of Information Agreement in March 2017 to facilitate research and development.

SPACE
The Brazilian Space Agency AEB is a member of NASA's GLOBE science program, with 119 Brazilian schools participating in projects such as the GLOBE Mosquito Habitat Mapper (MHM) app linked to the GLOBE database to help track mosquitoes that spread the Zika virus and other diseases.

SCIENCE
The two countries have extensive scientific exchanges at the individual researcher level, as well as bilateral collaborations with the U.S. Geological Survey, NASA, the Environmental Protection Agency and the National Institute of Standards and Technology. The two nations collaborate in weather monitoring, metrology and standards, environmental impact monitoring and on a wide range of public health initiatives.

EDUCATION
Cooperation between the United States and Brazil continues to thrive, with numerous initiatives for young people, educators and professionals. The binational Fulbright Commission, established in 1957, for example, continues to support study and research exchanges for thousands of scholars between the two countries. EducationUSA, an international network of educational centers promoted by the U.S. Department of State, helps Brazilian university students access information and opportunities for study in the United States at its 34 centers throughout the country.

HEALTH
Brazil is home to the U.S. National Institute of Health's (NIH) largest research portfolio in Latin America.

INTERNET
The United States and Brazil are committed to strengthening the multi-stakeholder approach to Internet governance to preserve the benefits of an open, interoperable, secure and reliable internet. The U.S. Department of Commerce co-hosted the first ever U.S.-Brazil Digital Economy Summit with the Federation of Industries of the State of São Paulo (FIESP) in October 2017.

ENVIRONMENT
To promote the implementation of the Post-2015 Development Agenda Sustainable Development Goals, the United States and Brazil are collaborating on sustainable agriculture, food security and nutrition.

Privatization and relaunching the oil and gas sector

Despite the cautions mentioned above the surplus volumes of the Transfer of Rights areas should be auctioned as fast as possible, accelerating the extraction of billions of barrels of oil and gas. Annual investments in oil and gas exploration are in the region of USD 50 billion per year. Brazil received R$28 billion in signature bonus for the 72 blocks contracted in the six auctions held in 2017 and 2018, which represented three quarters of the approximately USD 9 billion spent on three thousand blocks, in more than 100 auctions in 82 countries since 2016. What is ahead in 2019, with the auction of the Transfer of Rights surplus and with the concession and share rounds, is larger, and could amount to tens of billions in bonuses. In downstream, the agenda will be extensive and arduous, because it concerns refinery investments, urgently needed to bring concurrence and competitiveness to the fuels market and to natural gas distribution, with the reminder that investments in infrastructure are the only ones where the surplus must be ahead of the demand. According to CNI (2018), it is necessary to privatize the states' natural gas distribution assets and to encourage the sale of Petrobras' distribution assets to the highest number possible of new purchasers during the disinvestment process. It is worthwhile to take advantage of Petrobras' interest in selling its assets in the refinery field in order to boost new private investments and segment decentralization, as well as to monitor the national fuels market, aiming to inhibit irregular practices, particularly the prices higher than international prices? This should occur by means of a free prices policy, without federal government interference, which encourages Petrobras's right both to invest and compete.

An adequate level of competition will only be achieved with the sale of Petrobras' refineries in the Southeast and other areas, even though the market is very pessimist in this regard, due to lack of information and consideration from Petrobras in recent months. Moreover, it is important to mention that no buyers have showed interest in these assets until now. The sector is controlled by unprecedented institutionalization. Petrobras is free to act as a public company, with the objective of maximizing its profits. In this scenario, regulation should act in the defense of the consumer. To attract the investments required for increased production of fossil and renewable fuels, it is necessary that prices follow variations in the international market and exchange rates, but these are established in an environment with more transparency and competition. Thus, distortions could be avoided, as in the last year, when prices were far below international levels, as was the case between 2011 and 2014, and much higher in the 2008 to 2010 period and from the end of 2014 until recently. In short, market rules and efficiency must finally prevail in the industry. Thus, the oil and gas industry may leave debates of an ideological nature in the past, allowing the discussion of a possible privatization of Petrobras to be made in a pragmatic and objective way, considering the best allocation of the resources of the Union. The industry's potential should translate into economic growth, job and income generation, and increased revenue, competitiveness and productivity in the Brazilian economy.

Lastly, it is important to review the tributary policy over the gas and fuels market. Only a more efficient state and institutions, which transmit the right incentives, will be able to deal simultaneously with shortages of resources, huge social debts and the effects of rapid demographic transition on health and social security expenditures.

What President Bolsonaro is saying he will do

The Army reserve captain made a popular campaign, which brought together large groups of supporters to the streets, but was also the target of many criticisms and counter-offensives. In the race for the presidency, the candidate had difficulty in extending alliances and negotiating for vice-president General Mourão, who brought with him the support of the elite armed forces. Early on, Bolsonaro introduced the well-known economist Paulo Guedes as the guarantor of his economic program. With the increase of the popularity of his message and the acceptance of Guedes, the campaign gained traction and the support of the business and financial sectors, while remaining faithful to an anti-corruption message. Particularly for the oil and gas sector, Jair Bolsonaro proposes:

1 | Reduction of the local content percentage on the purchase of oil equipment. The bureaucratic demand for local content reduces productivity and efficiency and generates corruption. Besides that, according to President Bolsonaro, the policy did not help the domestic industry in the long run. This will require the gradual removal of local content requirements.

2 | Domestic prices of diesel and gasoline: prices charged by Petrobras should match those in the international markets, but short-term fluctuations should be smoothed with appropriate hedging mechanisms.

3 | Petrobras' divestment program: Petrobras must sell a substantial portion of its refining, retail, transportation and other activities where it has market power.

4 | State and federal taxes on diesel and gasoline: In the formulation of energy prices, including fuels, there →

AMLO's Revolution

After railing against the granting of oil contracts to foreign companies during his election campaign, Mexico's new president is expected to make only a few changes to outgoing president Peña Nieto's energy reform, focusing instead on reviving PEMEX

The pillars of the energy policy embraced by Mexico's newly elected president Andrés Manuel López Obrador—popularly known by the nickname AMLO—are to reduce Mexico's dependence on oil and gas imports, to accelerate the projects for contracts already awarded, to stop awarding new contracts, and to review the energy reform designed by the outgoing president Peña Nieto. These policies may be less radically opposed to his predecessor's than his statements during the election campaign appeared to suggest. Obrador has never concealed his intention to restructure Mexico's energy sector. He recently told the Wall Street Journal that he plans to hold off the auctioning of any undeveloped oil blocks in the Gulf of Mexico for at least two years, a suspension that, in some cases, could last until the end his term of office in six years' time. The president-elect has announced he will "review" the 107 contracts already awarded to 73 leading international oil companies, which are expected to generate an overall investment of USD 161 billion, but without stating any intention to cancel them. With respect to his firm opposition to Peña Nieto's energy reforms, currently under consideration, the new president has now moderated his positions, proposing a series of "tweaks" rather than an outright repeal. The aim of these adjustments would be to boost the power of Mexico's state-owned PEMEX oil company by enabling it to govern the marketing of all oil and gas produced by foreign companies and to choose its partners in oil and gas projects.

A new drive towards oil production growth

Under existing legislation, the product of the latest reform, PEMEX is required to partner with the highest bidder for every block awarded through the auction process. AMLO has also pledged to boost oil production from the current 1.7 million barrels per day to 2.6 million by the end of his term of office, in 2024. Despite such promises, however, it is not clear whether PEMEX will have the budget for drilling and production activities, which for 2019 would amount to USD 3.9 billion, roughly equivalent to 44 percent of PEMEX's entire exploration and drilling budget for this year. According to national and international political and economic observers, these measures—which also include a substantial weakening of the authority of the country's energy regulatory agency—would involve a significant strengthening of the power of the presidency over Mexico's energy sector. This could cause concern among international investors, especially if, as stated by Maria Cortez, Latin America Upstream Senior Research Manager at Wood Mackenzie, "licensing rounds are canceled and joint ventures are the only vehicle for entry to the country." According to Duncan Wood, Director of the Mexico Institute at the Woodrow Wilson International Center, despite his strong initial opposition, Obrador has had to come to the realization that the radical repeal of the energy reform would have been a serious risk for the country, since the regulatory framework is already deeply embedded in the Mexican model. "To pull Mexico out of the energy reform," Wood pointed out, "to completely reverse the energy reform from 2013, would leave a huge scar and damage Mexico's investment profile possibly beyond repair."

Reducing dependence on energy imports

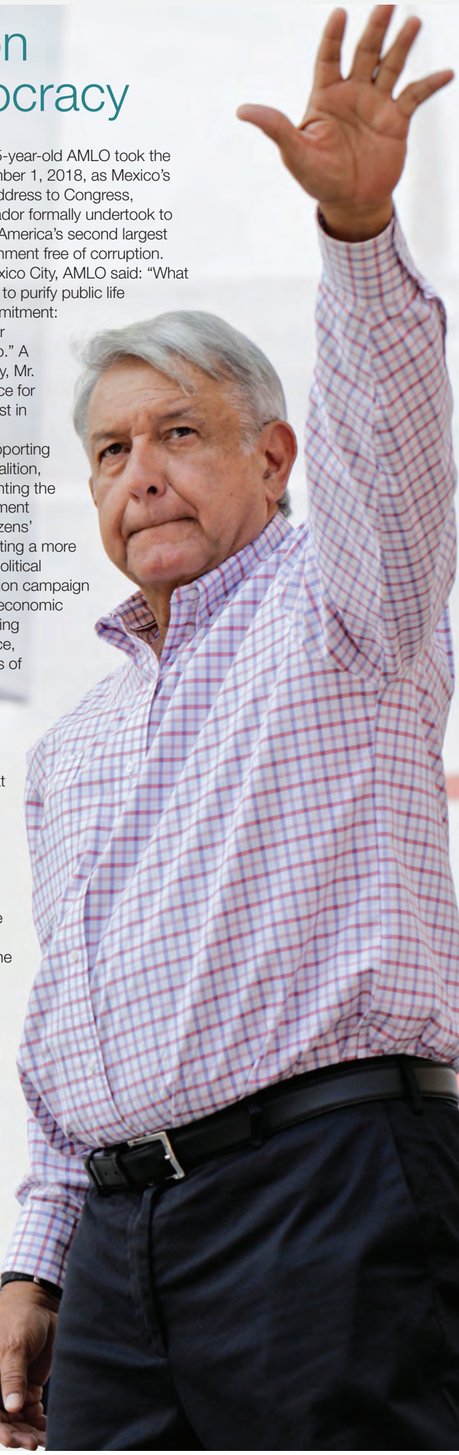
According to Wood, Obrador's message is clear: "I'll respect your contracts, but I'm not going to offer any more contracts, any more blocks until we see more investment flowing and we see the results of what's happened so far." A further energy-related problem is Mexico's heavy dependence on U.S. oil and gas imports. According to Fluvio Ruiz Alarcon, a former board member of PEMEX and one of the developers of President Lopez Obrador's energy policy, Mexico depends on imports for as much as 70 percent of its oil product demand and for over 90 percent of its natural gas consumption. In November 2018, for the first time since 2016, PEMEX imported more than 1.4 million barrels of American Bakken oil to supply Mexico's refineries. The quality of this crude oil meets the requirements of Mexico's refineries. "We have to make this mix to have the right diet for our refiners," Ruiz Alarcon said, "and as long as we don't produce the right quality for our refiners, maybe we'll have to import more." Lopez Obrador, however, criticized PEMEX for importing American oil, calling it "a sign of the country's failed economic policies." With regards to gas, despite statements suggesting his opposition to fracking, the new president has remained largely silent.

In this case, too, the aim is for greater involvement by PEMEX, which may have to carry the burden of increasing the nation's natural gas production through new gas fields as well as improving the productivity levels of those already in service.

The transition to natural gas remains one of Lopez Obrador's main goals, in line with Mexico's aim to shift massively to energy generation from gas. This is one of reasons why work is set to begin on several new pipeline projects that are expected to increase Mexico's capacity to import gas from the United States to around 11 billion cubic feet per day.

GIANCARLO STROCCHIA

A passion for democracy



The seemingly tireless 65-year-old AMLO took the oath of office on December 1, 2018, as Mexico's new president. In his first address to Congress, Andrés Manuel López Obrador formally undertook to profoundly transform Latin America's second largest economy and lead a government free of corruption. During the ceremony in Mexico City, AMLO said: "What we want, what we desire is to purify public life in Mexico. I repeat my commitment: I will not lie, I will not steal or betray the people of Mexico." A former mayor of Mexico City, Mr. Lopez Obrador has run twice for the country's presidency, first in 2006 with the Party of the Democratic Revolution, supporting the Por Elbien de Todos coalition, and again in 2012, representing the progressive coalition movement (PRD, Labor Party, and Citizens' Movement), always advocating a more inclusive and consultative political system. He based his election campaign on a number of social and economic crusades aimed at eradicating corruption, reducing violence, respecting the human rights of migrants and stimulating growth in the country's poorest regions. A man of humble origins and the eldest of eight children, he became a political activist at a young age. His early experiences were with the Institutional Revolutionary Party, which he left in 1988 to found the Party of the Democratic Revolution. Today, AMLO is officially the leader of the National Regeneration Movement, the party that led him to victory in the presidential election with 53.19 percent of the vote. Obrador has regularly expressed his wish to bring peace to Mexico and deliver the "fourth transformation", after the struggles for independence begun in 1810, the reforms carried out President Benito Juarez and the 1910-1920 revolutionary wars that gave rise to the current structure of contemporary Mexico and which AMLO says are his source of inspiration.

G. S.

is a strong influence of state taxes, and this will need to be discussed among all federative entities in order not to overburden the Brazilian consumer.

5 | An increased role for natural gas: this energy source will play a fundamental role in the national power and energy matrix, providing quality and energy security for its expansion, along with photovoltaic and wind energy.

6 | Natural gas market: competition must also be promoted in the gas sector, seeking coordinated action among states, which are constitutionally responsible for their regulation.

7 | Reduction of CO_2 emissions: gas has gained prominence in the Brazilian energy matrix, contributing to the transition to reduced CO_2 emissions and to integration of other intermittent renewable sources.

8 | Unconventionals: Incentivize shale gas exploitation, allowing its exploration by small producers.

9 | Petrobras privatization: Keep Petrobras as a state-owned company and privatize "parts of the company."

10 | Tax burden: Reduce the tax burden for fuels in Brazil.

Final comments

With an initial pro-market platform, Bolsonaro is set to continue, inexorably, the current policies of opening the oil industry by expanding private competition and attracting investments, including seeking to end Petrobras' de facto monopoly in refining. Petrobras owns 98% of the refineries in Brazil. The newly elected president stated during his campaign that his government plans to develop local market competitiveness, with a gradual reduction of local content requirements, to institute a new role for Petrobras in the formulation of prices. Those prices should follow international markets, but without short-term fluctuations which should be toned down by appropriate hedging mechanisms. Due to the exhaustion of an internal political identity, Brazilians believe that a democratic government must be rebuilt. Without this, it would be almost impossible to achieve some level of economic recovery, employment and the expansion of social policies. This should be the agenda for the immediate future. Hopefully, the path to economic prosperity and social equality will be found. Brazil's problems are far from over. The civilizing process depends on a patient and dialectical game between two fundamental institutions, the ballot box and the market. They should be independent of each other, which is not a trivial problem. Latin America is going through a turbulent moment and gives the impression that something is out of order in democracies. However, it is a fact that the combination of political authoritarianism and free-market economy is not new in Brazil or Latin America. Hence, there has not been a success story so far in this congregation. Separating economic and political freedom may seem like a shortcut to development, but in Latin America demand for a strong government has competed with a persistent desire for freedom.

CLIMATE

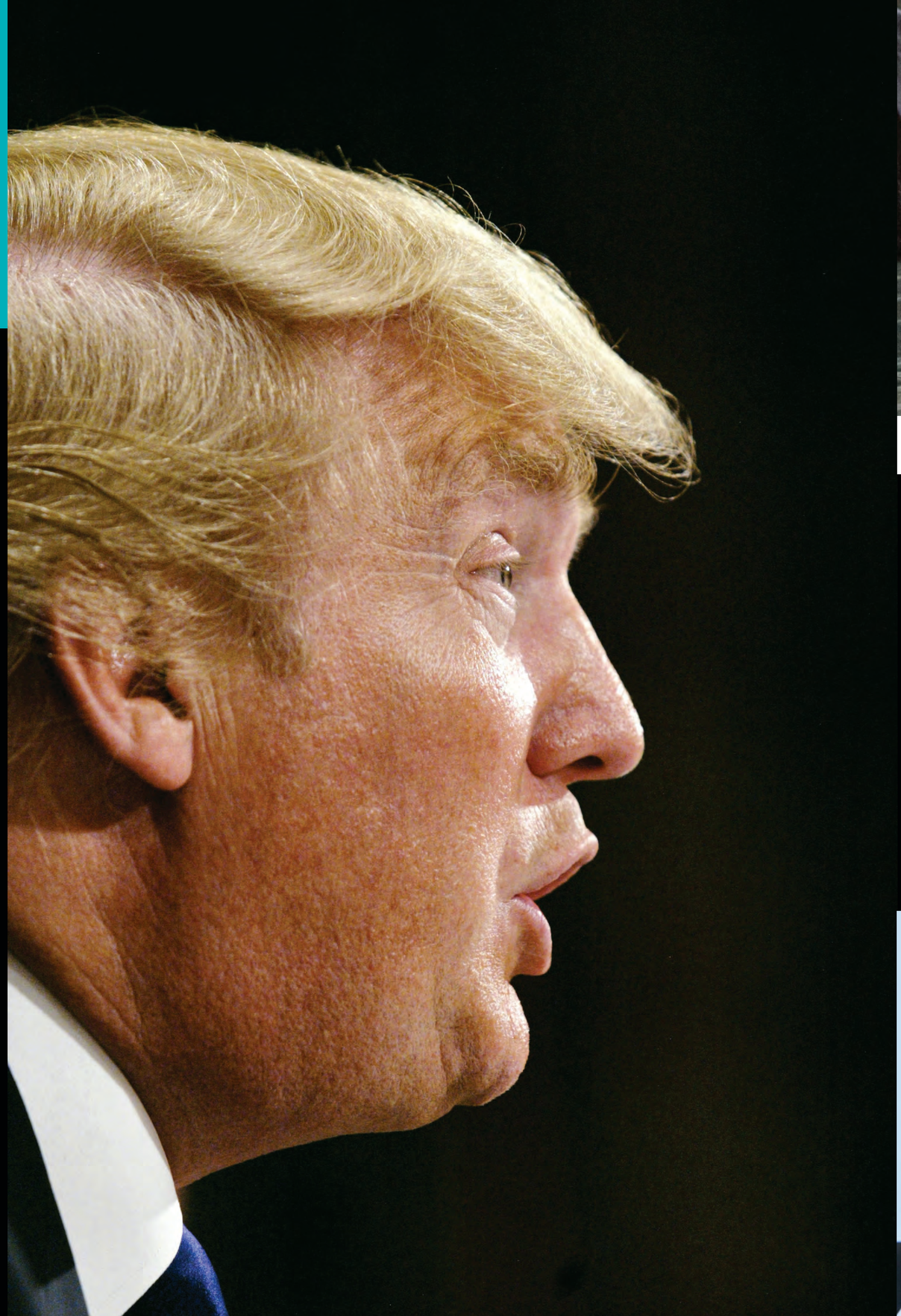
Donald Trump

"In order to fulfill my solemn duty to protect America and its citizens, the United States will withdraw from the Paris Climate Accord. The bottom line is that the Paris Accord is very unfair to the United States. [...]The Paris Accord would undermine our economy, hamstring our workers, weaken our sovereignty, impose unacceptable legal risks, and put us at a permanent disadvantage to the other countries of the world."

[JULY 2017]

"I think something's happening. Something's changing, and it'll change back again. I don't think it's a hoax, I think there's probably a difference. But I don't know that it's man-made. I will say this. I don't want to give trillions and trillions of dollars. I don't want to lose millions and millions of jobs. I don't want to be put at a disadvantage."

[OCTOBER 2018]



We

Barack Obama and Angela Merkel

"We are stronger when we work together. And U.S.-German partnership was essential to achieving a global agreement in Paris that offers the world a framework for protecting our planet."

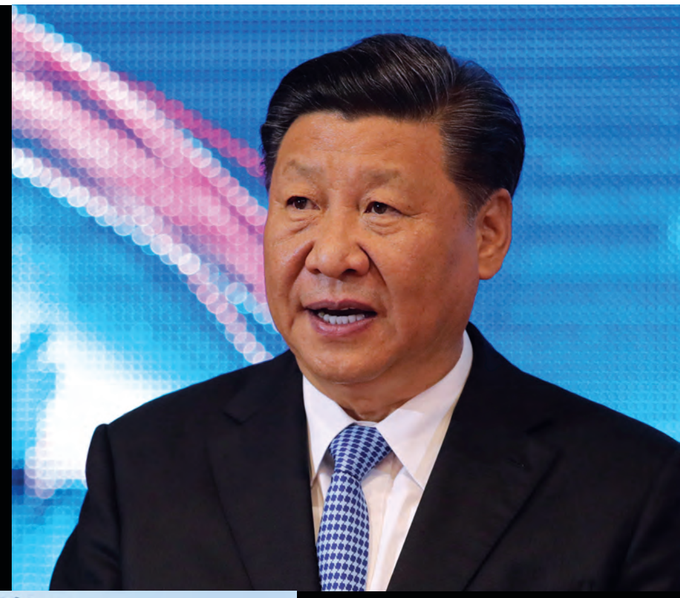
[NOVEMBER 2016]

The Debate Heats Up

Xi Jinping

"We need to seize opportunities presented by the new round of change in the energy mix and the revolution in energy technologies to develop global energy interconnection and achieve green and low-carbon development."

[MAY 2017]



Maroš Šefčovič

"We are probably going through the most difficult period in the history of relations between Europe and the United States since the Second World War. The exit from the Paris Accord was the first withdrawal from an international treaty, and pulling out of the Iran deal was the second withdrawal from a jointly negotiated treaty."

[MAY 2018]

Global leadership is lacking after the U.S. withdrawal from the Paris Agreement

The Empty Throne

Beijing has shown growing concern over global warming, while at the same time trying to consolidate its image as a responsible global stakeholder. It remains to be seen whether this is enough to turn China into a leader on climate change

DAVID LIVINGSTON

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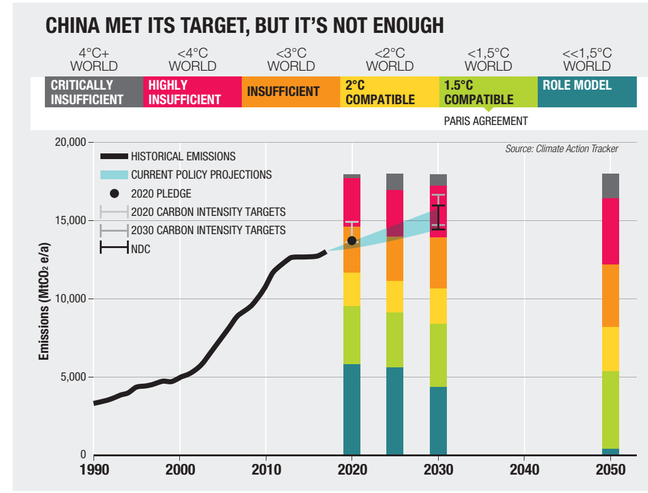
The trajectory of global climate politics was shaken in June 2017 by President Donald J. Trump's announcement that the United States would seek to withdraw from the Paris Agreement on climate. Telling a White House Rose Garden audience that he was elected to represent the citizens of "Pittsburgh, not Paris," President Trump cast the Paris Agreement as a ball and chain on a vibrant U.S. economy, and as an uneven playing field on which much was required of the United States, while rising powers such as China and India could slipstream behind without concomitant sacrifices.

Regardless of the spurious representation of the Paris Agreement, as well as the fact that any U.S. withdrawal from the Agreement would only be legally possible from November 2020 onwards, the speech set a new tone for the global energy transition. No longer would the slow and laborious convergence toward a bottom-up and globally-endorsed approach, meticulously constructed by climate negotiators, be inevitable. No longer could U.S. leadership, in the form of leading shared sacrifices for a greater shared good, be counted upon.

In place of this lost paradigm came, as in so many other domains of multilateralism over the past several years, the return of zero-sum logic. It is not that power politics, mistrust, or positioning had never existed in the realm of climate politics; indeed, far from it. But the United States' planned departure from the Paris Agreement, combined with a widespread weakening of many of the policies meant to fulfill the U.S. emissions reduction target therein, has led many in the global community to wonder to what degree, if any, the United States can still be counted on to exercise leadership in managing the global energy transition and efforts to combat climate change. And it has led just as many to speculate that China is quickly stepping in to fill the space vacated by Washington.

To paraphrase Kant, however, global energy and climate dynamics comprise a most crooked timber, and from them a straightforward and simple story has hardly ever been made. Global climate leadership, just as the energy system itself, is as uncertain as ever, from clean energy deployment to climate finance and diplomacy and beyond.



China is on track to meet or exceed its 2030 Nationally Determined Contribution (NDC). China's NDC is not ambitious enough to limit warming to below 2°C, let alone to 1.5°C as required under the Paris Agreement, unless other countries make much deeper reductions at comparably greater effort. Despite the return to increasing emissions in 2017, China met its 2020 carbon intensity target in 2017, three years ahead of schedule.

United States: Do as I do, not as I say

While it is true that the White House has stepped back from a leadership role on international climate governance, it is not the case that the United States as a whole has followed suit.

Governor Jerry Brown of California joined forces with Michael Bloomberg and other U.S. regional and business leaders in erecting something of an alternative American climate action architecture across the United States, with gatherings such as the "We're Still In" pavilion at the COP23 climate conference and the 2018 Global Climate Action Summit in San Francisco serving to take stock of the aggregate impact of non-federal actions and galvanize them further.

The story of a complex, mosaic U.S climate story is more evident when it comes to actual emissions reduction performance. According to Rhodium Group, a leading analyst of U.S. emissions trends, the current business-as-usual trajectory of U.S. emissions will end up somewhere between 15 and 19 percent below 2005 levels in 2025. The U.S. pledge under the Paris Agreement aims for a much more significant reduction of 26 to 28 percent.

The U.S. has benefitted from two key emissions reduction tailwinds over the past decade. One, efficiency, is largely the result of intentional policy measures, while another, the flight from coal, is largely the consequence of the fortuitous symphony of the technology-driven shale revolution and clean energy. Aggressive vehicle fuel efficiency regulations accelerated under President Obama have contributed a significant share to U.S. emissions reductions, though the transport sector is now the single largest greenhouse gas (GHG) emitting sector in the United States, ahead of the power sector. This reduction is also in part due to the fact that the replacement of coal plants with natural gas plants and advanced energy technologies such as wind and solar has reduced U.S. power sector emissions by 45 percent since 2010. Even Donald Trump, perhaps the most avowedly pro-coal President in modern American history, has been unable to stem the tide of coal plant closures across the United States; around 20 coal plants were on pace to close by the end of 2018, making it the most prolific for retirements in history, beyond even the 17 closures in 2017. And yet this performance at home for the U.S. has not translated well into soft power abroad, at least not when accompanied by the more salient, if less meaningful, rhetoric of the American president with respect to climate change and global efforts to halt it.

China: All eyes on the Middle Kingdom

Climate change is increasingly a core pillar of China's modern identity, and a growing feature of its soft power abroad. Chinese President Xi Jinping announced at the May 2017 Belt and Road Forum, only one month prior to President Trump's announcement, that "We need to seize opportunities presented by the new round of change in the energy mix and the revolution in energy technologies to develop global energy interconnection and achieve green and low-carbon development."

Beijing was also quick to seize on the opportunity presented by President Trump's Paris speech, avoiding any direct criticism of it in authoritative statements, but intensifying expressions of concern for the issue of climate change and generally seeking to reinforce notions of China as a responsible global stakeholder. In President Xi's autumn 2017 speech before the National Party Congress, he made the concept of an "ecological civilization" a key pillar of his vision for China's further development.

However, China's complex and competing interests, as would be expected of any rising power of its size, mean that it is almost entirely impossible for the country to be only a good news or a bad news story when it comes to the global climate challenge. Some of the most promising signals for the energy transition are coming from China, but also some of the most concerning.

China's clean energy: leaps and hurdles

Surely, the sheer scale of clean energy developments in China is impressive, from its acceleration of a truly glob-

al, commoditized solar module industry to its more recent prolific deployment of low-carbon energy at home. Emissions-free power, namely nuclear and renewables, accounted for two-thirds of China's new installed energy capacity in the first half of 2018, and renewables alone now comprise around 40 percent of the country's installed capacity, though not its generation.

In recent years, renewable energy curtailment has also been a headwind for China's green ambitions, such that the country's actual clean energy generation and production lagged far behind its impressive investment and nameplate capacity numbers. Since 2010 more than 150 million megawatt hours of China's wind generation, around 15 percent of its total, was curtailed, representing an estimated $1.2 billion in forgone value.

Much of this has been due to a transmission system that has struggled to keep pace with the speed and scale of renewables deployment in China, along with localized oversupply and bottleneck issues. As a result, the problem is far more acute in certain regions, with Gansu and Xinjiang experiencing wind curtailment rates of more than 30 percent in recent years, and Jilin, Heilongjiang and Inner Mongolia seeing curtailment rates of over 20 percent. 2018 finally showed signs of a turnaround in this wasted renewable energy production in China, with less than 10 percent of wind generation and less than 4 percent of solar generation being shed. But the issue remains a symbol of the gap between the country's ambitious rhetoric and prolific deployment numbers on the one hand, and the challenging realities it faces on the ground on the other.

Fears of an unsustainably rapid and uncoordinated buildout of renewable capacity also contributed to the country revising downward its renewable goals in mid-2018. In a June announcement, Chinese authorities capped the total new 2018 renewable capacity at 30 GW, down from 53 GW in 2017. Only several months later, however, the country also increased significantly its 2030 non-fossil electricity target to 35 percent of consumption, from an earlier 2030 target of 20 percent. If climate targets could be visualized as something akin to a yield curve in classic fixed income analysis, then China's recent energy story is one of "curve steepening," ramping up long-term ambitions while creating additional near-term slack amid transitional challenges.

It should be no surprise, then, that China's climate ambitions are in part articulating themselves not as a move away from coal, but instead a different pathway for utilizing coal's energy content. For example, China's Shenhua Group, the country's largest coal company, is developing a number of coal-conversion plants in Western China's coal production base. This includes one direct coal liquefaction (DCL), three indirect coal liquefaction (ICL) and two coal to chemicals (CTC) plants. While some of China's coal liquefaction facilities have successfully demonstrated a capacity to capture and sequester carbon, they are also the beneficiaries of significant subsidies from the government, complicating the question of how economically efficient and ultimately sustainable this climate strategy will prove to be for China.

China in the climate finance landscape

At the recently concluded negotiations held over two weeks at the COP24 climate conference in Poland, China was accused of using smaller countries as proxies in a battle to re-erect some of the anachronistic distinctions between developed and developing countries in the global climate governance system that many thought had been resolved in the 2015 Paris climate agreement.

This was, perhaps, a maneuver to seek leverage in the debate over counting and catalyzing climate finance flows that China, and many developing countries, feel have yet to live up to, promises made by wealthier economies in years past. The OECD recently reported that public climate finance was around USD 57 billion as of 2017, indicating some progress toward the commitment of USD 100 billion by 2020 that was first offered at the Copenhagen climate conference in 2009 and revisited at several climate summits since then.

China is not only a prospective recipient of global climate finance, however, but also a strategic contributor. Indeed, China's foreign aid and assistance apparatus has included at least some climate change-related activities for more than a decade, though it has expanded rapidly in recent years. By the early 2010s, this had reached more than USD 30 million per year, and in 2012, China's relevant ministry, the National Development and Reform Commission (NDRC), announced a doubling of climate-related aid to USD 72 million per year.

China's major emergence as a climate finance actor came in late 2015 during the Obama-Xi summit that produced joint climate commitments just before the Paris climate conference. There, it announced a new USD 3 billion per year "South-South Climate Cooperation Fund." Part of this finance is meant to go towards China's "10-100-1000" Plan, in which it committed to funding 10 low-carbon industrial pilot projects, 100 mitigation and adaptation programs and 1000 climate change training initiatives to developing countries from 2016 onward.

China is adamant that its aid remains voluntary and completely distinct from the climate aid being donated by developed nations via the Green Climate Fund conceived at the Paris Climate Summit. Notably, it was at the Obama-Xi summit that President Obama announced a U.S. commitment of USD 3 billion to the Green Climate Fund, matching the volume of funds committed by China to its own "South-South" fund.

China's administration of the "South-South" fund, and in particular the execution of the 10-100-1000 plan, has been slow due to a mismatch between the purpose of the fund and China's own bureaucratic design, though that has recently improved with China's ministerial re-shuffle in April of 2018 and with the assistance of a variety of international organizations and NGOs.

In the ministerial shake-up, China also created a new agency equivalent to USAID, called the "China International Development Cooperation Agency" (CIDCA). CIDCA already provided humanitarian aid in May of 2018 to Kenya amid severe flooding and will likely be utilized more and more by China over time as the mechanism through which it administers direct and immediate relief efforts for climate-driven as well as non-climate-driven disasters.

A non-negligible share of China's climate aid has been, and will likely continue to be, in-kind contributions. A meteorological micro-satellite was gifted to Ethiopia several years ago, along with the provision of training on satellite-related capabilities for monitoring drought and other weather events to Ethiopia. More recently, in summer 2018, China launched a much larger meteorological satellite of its own to assist with "weather forecasting accuracy and the ability to cope with climate change and mitigate losses caused by natural disasters" along the contours of its Belt and Road Initiative (BRI) investments.

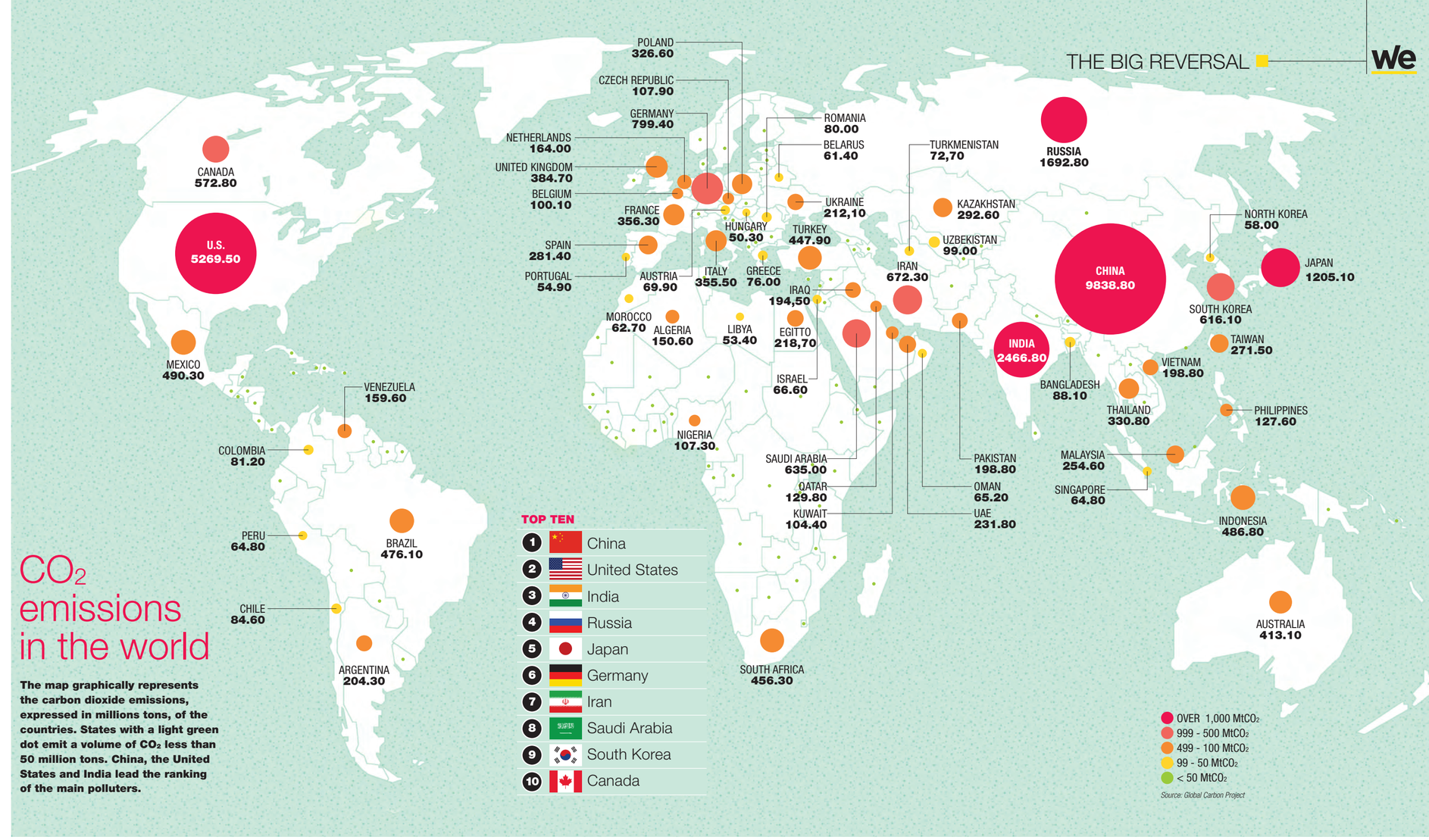
Investment: The (belt and) road ahead

Beyond "climate finance," or ostensibly charitably oriented climate-related spending, lies the far larger and fast-growing renewable investment landscape. Here, too, China is becoming increasingly important for South-South flows. While the majority of utility-sourced renewable asset finance in emerging markets still derives from European firms, Chinese firms comprise a larger and larger share of project developer renewable asset finance in the emerging world. Six of the ten largest renewable asset owners in global emerging markets are Chinese, while only one is from the United States. Counting its own domestic investment, China now accounts for approximately half of all annual renewable investment globally. And this share may be poised to grow yet further if China's vision for its BRI and "Global Energy Interconnection" initiatives come to be fully articulated.

Taking another angle, however, there are also broader concerns among some regarding how "green" China's BRI will turn out to be. For example, in 2018, Egypt embarked upon building the world's largest coal power plant as well as Egypt's largest solar project, and both are being developed by Chinese firms using Chinese financing. The anecdote captures the paradox of China's arrival as an international infrastructure player. There will be countless headlines about China exporting carbon pollution abroad to other developing countries, as well as headlines about China as a green-minded purveyor of climate-smart infrastructure, and both in a sense will be correct. China, to borrow a phrase often used in the context of U.S. energy policy, is truly "all of the above." Whether this will prove enough to be judged a true "climate leader," and whether the United States chooses to similarly evolve its own narrative in coming years, most certainly remains to be seen.

CO_2 emissions in the world

The map graphically represents the carbon dioxide emissions, expressed in millions tons, of the countries. States with a light green dot emit a volume of CO_2 less than 50 million tons. China, the United States and India lead the ranking of the main polluters.



The impact of the May 2019 elections on the E.U.'s climate change policies

Europe still a Leader in Energy Transition

There is a "green leitmotif" running across the political platforms of traditional and new European parties alike, reflecting a growing concern among the general public, both on the left and the right. Industry has been warned

LAPO PISTELLI

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hat might be the impact of the next European elections, scheduled for May 26, 2019, and of the new political balances emerging from the ballot box, on Europe's role in addressing climate change and decarbonization?

We can begin by looking at the way Europe has managed these issues in the recent past. New political forces entered the electoral arena for the first time as early as 2014. Their aim was not to drive the integration process in a different direction but to reverse the trend, with the explicit intention of derailing that process. The logic of compromise among the major traditional political families and the difficulties encountered by the new players in finding a joint platform effectively contained this risk during the 2014-2019 mandate that is now drawing to a close. But the tide has not turned, on the contrary. The upcoming elections are even more crucial due to several factors, notably Brexit, a modern zeitgeist that is raising the specter of policies based on national sovereignty and the fight against elites and establishments (real or imagined), and, finally, the improved networking capacity of very different political forces who share the repatriation of policies and practices as their key goal. The alliance between traditional political families, some of which are visibly in crisis, may not be enough this time around, so the new Commission may have very different features and balances. While all this is true, as confirmed daily by media reports, it is equally true that Brussels life has always run along two tracks: one involving the great political and media narratives, and one concerned with the day-to-day running of the "political-bureaucratic machinery." The latter has continued to deliver regulations, initiatives and decisions, some of them of great importance, often neither the focus of nor hindered by attention-grabbing media headlines on the implosion of the European project.

Increasingly ambitious targets

The European Union has always played a leading role on the issue of climate change and energy transition, undertaking some very ambitious commitments and targets—more ambitious, at any rate, than other continental blocs and major national players have been prepared to commit to. In this respect, the E.U. has also had to deal with opposition from the European business community due to the latter's legitimate concerns about being at a competitive disadvantage vis-à-vis its American and Asian competitors who are less restricted by regulations to comply with and targets to meet.

The European pathway

2007

THE 2020 PACKAGE

- **20% cut in greenhouse gas emissions (from 1990 levels).**
- **20% of E.U. energy from renewables.**
- **20% improvement in energy efficiency.**

2014

THE 2030 FRAMEWORK

- **At least 40% cuts in greenhouse gas emissions (from 1990 levels).**
- **At least 27% share for renewable energy.**
- **At least 27% improvement in energy efficiency.**

2018

THE 2050 STRATEGY

The Commission has left the climate and energy goals for 2030 unchanged and has plotted eight scenarios – all in line with the Paris Agreement – which foresee different combinations of actions and technologies.
Only one scenario, combining massive action in terms of renewables, energy efficiency, advanced sustainable biofuels, the circular economy, electrification, the use of hydrogen and e-fuels, and alternative mobility, as well as the full involvement of the agricultural and forestry sector, achieves the goal of "zero emissions" of greenhouse gases. Only partial or limited combinations of efforts in these areas would have limited impacts of 80, 85 or 90 percent.

In 2007, the European Commission adopted a Green Paper on adaptation to climate change, endorsed by the European Council, setting out the well-known Europe 20-20-20 Strategy that aims to cut greenhouse gas emissions by 20 percent, improve energy efficiency by 20 percent, and increase the share of Europe's energy from renewable sources to 20 percent. In keeping with this strategy, and to ensure continuity between the outgoing and incoming Commissions, a package of four fundamental directives was adopted in 2009. The key goals involve carbon pricing, a set of binding targets for every member state on energy from renewables and energy efficiency, and cuts in greenhouse gases in the transport, residential and agricultural sectors. Within a few years, the package achieved remarkable success, meeting the 20-20-20 targets or suggesting that they would be achieved well before the set deadline. While these results are partly due to the reduction in energy consumption driven by the economic downturn experienced in the last decade, this does not diminish the historical significance of the political choices made by the European Union, which has contributed tangibly and proactively to overhauling energy policies in the European continent and also globally.

Thus, in 2014, once again on the eve of a new term, the Commission presented the more ambitious 2030 Energy Strategy to the European Council. This time around, the E.U. dropped the catchy repetition of the number 20 coinciding with the year 2020, doubling to 40 percent the target for cutting greenhouse gas emissions by 2030, and raising the target for increasing energy from renewables and energy efficiency to 27 percent. With its customary effectiveness, the political-bureaucratic machinery put in place a series of initiatives—the "market stability reserve" with stronger carbon pricing, the fourth phase of the emission trading system, and the "clean energy package"—due to be completed by the middle of next year.

What is happening now?

First, it should be pointed out that the world has not been as virtuous as the European Union. Despite the historic Paris Accord reached at COP21, the rate of global warming has been accelerating even more due to the absence of binding targets for many of the signatory nations, the fact that in some cases the targets are conditional on international funding assistance, and America's withdrawal from the Accord. We are a long way from attaining the Paris goals, which in any case would no longer be sufficient to save our planet.

The European Commission has thus decided to raise the bar, putting forward a proposal to the European Council—once again on the eve of a renewal of its mandate—to adopt new decarbonization targets for 2050, linked to mid-century scenarios. The Commission's proposal, submitted to the European Council on November 28, presents eight possible mid-century scenarios involving the adoption of new decarbonization goals. Until a few months ago, the Commission was only focusing on two scenarios, one of which was defined as "moderate" and the other as "ambitious," envisaging an intermediate target of 45 and 50 percent, and a final target of 90 and 95 percent respectively. But the discussion has broadened out in recent days, fueled by a new development. Ten European Union member states (Denmark, France, Italy, The Netherlands, Luxembourg, Finland, Slovenia, Portugal, Spain, and Sweden), through a letter signed by their environment ministers, have called on the Commission to present a proposal to the European Council that also includes a radical "net-zero option" scenario whereby Europe would achieve full decarbonization by 2050, followed by negative emissions thereafter. This reflects the alarm raised by the Special Report published by the United Nations Intergovernmental Panel on Climate Change (IPCC), and its suggestion that global warming should be kept to below 1.5C. The debate has kicked off and will end with the choices that will be made at the European summit to be held in May 2019, laying the foundations for European legislations applicable from 2020.

What direction should Europe move towards in order to meet these targets, given that it seeks to maintain and protect a strong industrial base on the continent? Multiple working tracks are being considered, all of which will have a major impact on the energy industry and on their positioning in the public debate and public perception.

The European Commission—whatever scenario and targets are eventually adopted—implicitly assumes, on the one hand, that energy efficiency actions relating to consumption and individual behavior will steam ahead, and, on the other, that some sectors of the economy (e.g, agriculture and some processes in the chemical industry) will find it structurally impossible to decarbonize. Critically, the latter prospect places the burden of higher targets on other industrial sectors (manufacturing, energy and transport), which will be required to compensate for the reduced contribution of primary production and the chemical industry.

Areas of regulatory intervention

We can assume that four areas will be affected by regulatory intervention in the coming years: the gas market, new technologies, the transport sector and the financial sector.

Today, the major oil and gas companies are already working and investing in new directions, with some differences in their respective priorities. These include carbon capture and sequestration technologies, the production of biogas and synthetic gases used in conjunction with natural gas, and the use of hydrogen. But what companies are currently doing in terms of their in-house research and development or through the acquisition of external companies and start-ups driven by medium-to-long-term strategic plans, could become an even more pressing need to comply with European legislation in the future.

A similar situation applies to the transport sector. In recent years, the public narrative on the necessary and imminent electrification of light transport, namely our cars, has come to play a dominant role. On the one hand, this has encouraged automakers to launch new hybrid and electric models and to announce the end of diesel cars, and, on the other, the number of towns and cities that have imposed future limitations on vehicle circulation consistent with this model has multiplied. Here, too, it is worth recalling the other side of the equation, that is to say, the electricity required for recharging electrically powered cars is generated in a variety of different ways. There is thus a real risk that the final consumer will feel "carbon free" even when the electricity delivered at the recharging station may be generated by coal-fired power stations. The new legislative packages will also try to tackle heavy goods transport—involving commercial vehicles, air cargo and container shipping—which accounts for a huge and growing share of transport as a whole and where electrification poses a far bigger challenge.

Whether trade tariff wars will increase, and whether the anti-globalist tide will keep rising, all future scenarios point to a massive rise in "heavy" transport carriers. Europe will thus have to cope with new fuel specifications or using new energy sources like hydrogen, decided at the European level or through multilateral negotiations. And industry, too, will have to cope with the same issues. Finally, we turn to finance. Through direct or indirect action, and by incentivizing sustainable investment or discouraging traditional investment, a new chapter on sustainable finance is about to commence. This will become an additional carrot and stick with which to drive industrial transformation and energy transition.

Let us then return to where we started from, next year's European elections. The last ten years tell the story of decisions taken at the end of the various mandates and always strictly implemented by those who inherited the legacy of their predecessors.

Will things be the same after 2019?

We might suppose that the parties in favor of the repatriation of policies and competencies will resist the "intrusive" attitudes of the European Commission and the European Parliament on climate change, too, making it harder, slower or even impossible to implement European policies in this respect. Poland and Hungary, for example, have already shown signs of moving in this direction. This, however, would be a short-sighted calculation. Looking across the political platforms of traditional and new parties alike, it is easy to glimpse a "green leitmotif" linking them, reflecting a feeling of growing concern among the general public, whether on the left or the right of the political spectrum. We will probably quarrel over foreign policy or migration issues, over financial austerity and agricultural quotas, but when it comes to climate and energy transition, there will probably be less political resistance.

Industry has been warned.

U.S.-E.U. TALKS
Donald Trump and European Commission President Jean-Claude Juncker after the meeting held in Washington D.C. on July 25, 2018, to discuss U.S. import tariffs on European Union steel and aluminum.

The changeover in environmental leadership between U.S. and E.U.

Stronger Together?

The alliance between Washington and Brussels is being sorely tested by the latest divisions over the issues of climate change, sanctions against Russia and Iran, and future action on energy infrastructure

SARA STEFANINI

Sara Stefanini is Climate Home News' senior reporter, covering Brexit and broader stories. She is also a freelance writer, contributing to the Financial Times and other organizations. Previously she was a senior policy reporter at Politico Europe in Brussels, covering energy, climate change and environment, and has a master's degree from the Columbia University School of Journalism. She is based in London.

America's energy relations with Europe were about as strong as they ever could be when Barack Obama bid goodbye to the White House in early 2017. In his last year, the two sides worked together to bridge a long-standing divide with developing countries and clinch the Paris climate agreement; secured a second landmark deal to lift sanctions on energy-rich Iran; and committed to further cooperation on securing clean energy supplies, liberalizing trade and combating climate change.

"We are stronger when we work together," Obama and German Chancellor Angela Merkel wrote in a joint op-ed in November 2016, soon after Donald Trump's election. "The partnership between the United States and Germany has also played a central role in reaching the Paris Agreement on Climate Change. It gives the world the framework for the common protection of our planet."

Two years later, the European Union headed to the global climate summit in Katowice, Poland in early December carrying the heavy burden of leadership on its own. The aim of the two-week COP24 is to agree to a dense and technical set of rules to ensure that countries meet the Paris goals for limiting global warming by 2100. It should also set the scene for them to raise their pledged action by 2020, as the deal requires.

Yet the outlook for the summit is cloudy at best. The rulebook negotiations reignited old differences between rich countries and China and other emerging economies. The U.S. remains a party to the Paris Agreement, as Trump cannot legally pull out until late 2020 at the earliest, but the U.S. presence has dwindled to a team of civil servants working quietly behind closed doors. They often fight alongside Europeans for the same principals as previous administrations, only with far less political clout.

What's missing from the talks is leadership from the top

While civil servants negotiate, Trump continues to refute scientific findings on climate change and the damage linked to it. He blamed the recent California wildfires on poor forest management, rather than a rising global temperature, and said he did not believe the findings of a U.S. government report on the economic effects of climate change in the U.S.

Meanwhile, Trump's energy and foreign affairs policies have stoked more differences between the U.S. and Europe, first with renewed sanctions against Iran and now with the threat of sanctions against the Nord Stream 2 gas pipeline from Russia to Germany. "We are probably going through the most difficult period of the E.U.-U.S. relationship since the Second World War," Maroš Šefčovič, E.U. vice president for the energy union, said at a conference organized by the think-tank Globsec in May. "Paris was the first stepping out of an international treaty and the Iran deal was the second walking away from a treaty jointly negotiated. To be quite honest, we do not understand very well how we could be in this shape when we're talking about our closest of allies."

Brussels and Washington have taken steps to reinforce their cooperation on energy more recently, particularly natural gas trade. They held the first E.U.-U.S. energy council under Trump in July and discussed the modernization of energy infrastructure, clean energy innovation and diversification of energy sources, supplies and routes, among other things. However, there was a notable omission from the joint statement, any mention of climate change or greenhouse gas emissions.

The statement struck a distinctly more ambiguous tone compared to the last bilateral meeting under Obama, in mid-2016. Riding high off the excitement of the Paris accord, the two spelled out lengthier and more specific commitments to planned European gas pipelines and regasification terminals designed to diversify supply, and said they could learn ways to meet their clean energy and climate targets from each other. They also underscored the need for "close U.S.-E.U. coordination" in implementing the Paris commitments. That will be missing in Katowice.

Europe's awkward position

European leaders in Brussels and the capitals were quick to defend the Paris Agreement when Trump announced plans to withdraw in June 2016. They masterminded a G7 environment statement saying the deal was irreversible and non-negotiable, with a footnote clarifying the U.S. objection, and formed a partnership with China and Canada to maintain support and iron out differences that develop in negotiations.

Yet America's absence accentuates the awkward position Europe finds itself in on the global climate stage. Simultaneously there is demand from the developing world to increase its goals for cutting greenhouse gas emissions, both in the near- and longer-term, and resistance from poorer and more coal-reliant E.U. countries.

"The potential for the E.U. to go fur- →

ther is very much there and critical," said David Wascow, director of the international climate initiative at the World Resources Institute. "How the E.U. engages with other countries is very important—being able to build bridges and common fronts with the [least developed countries bloc], with the small island states, with other key vulnerable countries."

For the developing side, one expectation of Europe emerged in the first few days of the COP summit: the need for more money. With the Trump administration reneging on previously pledged financial aid, the group of least developed countries said it wanted rich countries to fill the gap, even if temporarily.

It's hard for the E.U. to mobilize climate finance as a bloc since it's the responsibility of individual countries. But in a bid to satisfy international pressure for emissions cuts, the European Commission is now urging E.U. lawmakers to set a goal of slashing emissions to net-zero by 2050, meaning any last manmade emissions would be absorbed by forests or carbon capture technology. The climate strategy the Commission released ahead of COP24 sets out pathways for reaching "climate neutrality." It remains to be seen, however, how far E.U. countries are willing to increase the existing emissions reduction target of 60% by 2050, compared to 1990.

Even if they do follow the Commission's call, environmentalists say it is not enough to meet the Paris Agreement's second goal to limit global warming to 1.5 degrees Celsius.

Plus, Europe remains under pressure to increase its target for 2030. Still, its position in Katowice received a slight boost from an otherwise gloomy report that showed global carbon emissions will jump to a record high at the end of 2018. The E.U.'s emissions were expected to be roughly flat following 10 years of larger declines. But America's stood to rise by 2.5% as a result of cars and gas-fired power, after falling over the previous decade. This previous decline in the U.S. was largely driven by the shift from coal to domestic shale gas and initiatives led by state and local governments and companies. But the effect of the Trump administration's rollback of environmental policies will likely begin to show in future emissions results.

"While the U.S. was gaining in the short term, with the transfer from coal to gas, the Europeans have a much longer-term plan for a real energy transition," said Randolph Bell, director of the Atlantic Council's Global Energy Center. "We see that both at the government policy level, but at the corporate level as well, European companies are taking the lead on recognizing and acting on climate change."

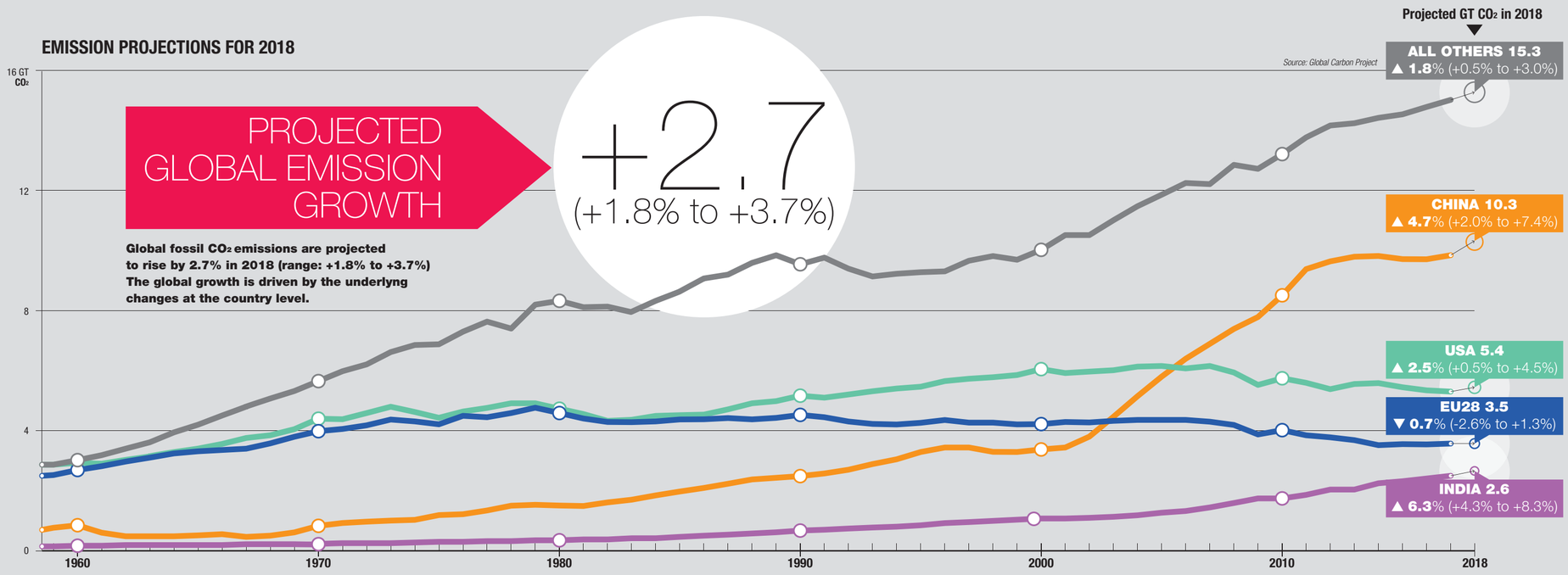
Filling the White House void

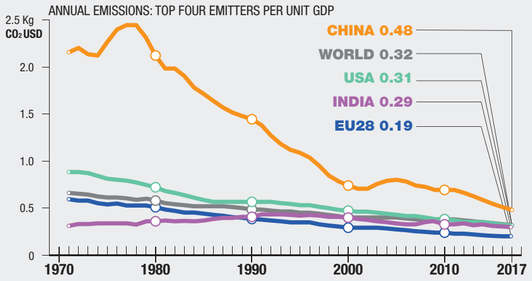
There is, arguably, one upside to Trump's decision to back away from Paris: The rise of American governors, mayors, moguls, philanthropists and other non-state actors, all of whom Europe is openly embracing. California Governor Jerry Brown visited Europe during last year's COP23 summit in Germany and agreed with Miguel Arias Cañete, the E.U.'s climate action and energy commissioner, to step up cooperation between the state and E.U. bloc on emissions trading and zero-carbon transport. In September of 2018, Former New York Mayor Michael Bloomberg, now the United Nations' special envoy for climate action, agreed with Arias Cañete to work together in managing the global shift away from coal. And in October, philanthropist Bill Gates signed a deal with Šefčovič to create a joint investment fund for breakthrough clean energy technologies such as batteries.

Even American oil and gas majors have started to shift, after being criticized for lagging behind Europeans in acknowledging the implications of climate change and the need to reduce fossil fuel use. Chevron, Exxon Mobil and Occidental Petroleum joined the Oil and Gas Climate Initiative in September, alongside European companies including BP, Eni, Equinor and Royal Dutch Shell, as well as China's CNPC, Brazil's Petrobras, Saudi Aramco and others. The initiative, launched in 2014, aimed to reduce emissions from oil and gas and created a USD one billion-plus investment arm for low-emission technology. This kind of movement from non-state actors is crucial, as attention turns from the high-level negotiations needed to set out global goals in the Paris Agreement to the work and investment needed to fulfill it.

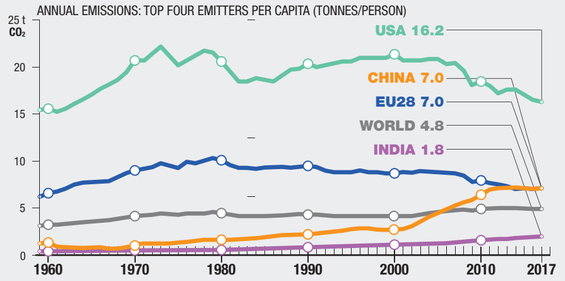
Washington's leadership, however, is still clearly missed. "I've never seen such positive energy coming from states like California, New York and many others—from the mayors, but also from the business leaders, who simply want to convince us all that the U.S. can do it without the White House," Šefčovič said in May. "But if it comes to global talks, green financing and overall diplomatic effort, which you need to maintain to have success in Katowice at COP24, of course we are missing our American friends."

In fact, Trump's assertions that the Paris Agreement is bad for U.S. interests have helped fuel a backlash to →

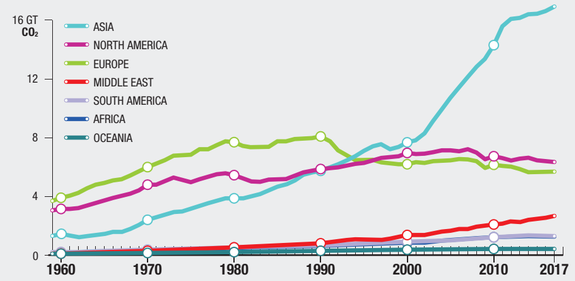




Emission intensity (emission per unit economic output) generally declines over time. In many countries, these declines are insufficient to overcome economic growth.



Countries have a broad range of per capita emission reflecting their national circumstances.

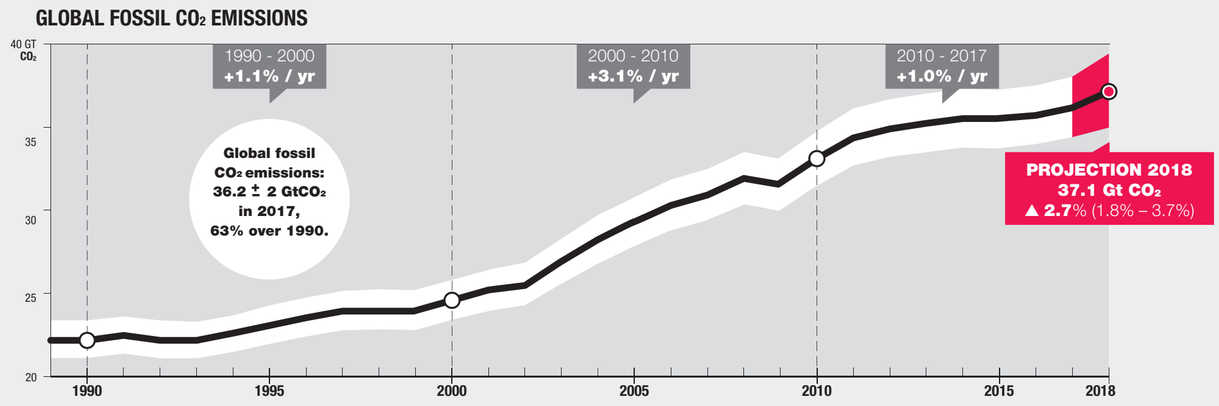


Asia dominates global fossil CO_2 emissions, while emissions in North America are of similar size of those in Europe, and the Middle East is growing rapidly.

Who is concerned about CO_2?

According to projections in a recent report by the Global Carbon Project, global CO_2 emissions will reach a new peak in 2018, of 31.1 gigatons, up by 2.7 percent on the previous year. In this unreassuring scenario, Europe is the only one of the most polluting regions where the level of carbon dioxide emissions from fossil fuels has remained almost unchanged (-0.7 percent on 2017). However, after decreasing over the previous decade, U.S. emissions increased by 2.5 percent in 2018, due to road traffic and gas-fired power plants.

The European Union also shows the lowest ratio between emissions and units of gross domestic product: 0.19 compared to the world average of 0.32 and the U.S.'s 0.31. Although China has seen its emissions levels plummet over the last 50 years, it still heads the world rankings with a ratio of 0.48.



THE RULE BOOK

COP24 ends with the adoption of the "Katowice Climate Package," the long-awaited "rule book" for implementing the Paris climate accord.

COP24 Reaches a Compromise without any Clear Commitments

The arduous compromise reached in Katowice will allow the Paris agreement on climate change to be implemented. However, serious doubts remain about achieving the goals set in 2015

COP24 in Katowice was definitely not the parade of powerful men and women from around the globe and personalities from the worlds of art, cinema, sport and culture we saw at the time of the Paris Agreement in December 2015. It was more like an exhausting tournament—to use a sporting metaphor—that ended in a draw in the last minute of extra time. The conference, which began on December 3, was attended by 196 countries and lasted 24 hours longer than planned, but took very few steps forward. By Saturday, December 15, gone 10 o'clock in the evening, the shattered delegations had finally approved a shared text, but one that lacked any clear statement about the extra steps countries are going to take by 2020, the year in which they are required to communicate their new commitments.

In particular, environmentalists are concerned that the conference failed to resolve the issue of the INDCs, the promises to reduce CO_2 emissions. In fact strong doubts remain about the likelihood of achieving the goal set in Paris to limit the increase in the average global temperature by the end of the century to 2 degrees centigrade compared to pre-industrial levels, remaining as close as possible to 1.5 degrees.

What kind of agreement is this?

Is the glass half full or half empty? As always when the result satisfies almost no one, the yardstick lies in the actual and potential effects of the agreement, outcomes we'll be able to measure very soon as COP25 will be held in Chile in 2019, with a pre-COP in Costa Rica. The latter conference will serve to check the decisions made to avoid next year turning into ten days substantially deadlocked as happened in Katowice.

One certainly cannot blame Poland, host of the UN climate conference. Everyone knew from the start that, with its policies on coal, the Polish city was a place of contradiction and was by no means a champion of the Paris agreement policies. The people who chose Katowice did so knowing that global environmental and energy policies cannot be built only with the support of those who agree with each other. Organizing the summit in one of the countries that will have to make the biggest changes made the discussions real and forced everyone to deal with that reality, in accordance with the principles established by COP19.

Looking ahead to 2020

In this sense, the Katowice gamble was won. A number of countries openly voiced their opposition: Russia, the USA, Saudi Arabia and Kuwait expressed their disagreement with the document presented by the United Nations, which accepts the premises of Paris 2015 and says that there is a 12-year window within which action to limit global warming and CO_2 emissions must be taken. As a result, following diplomatic wrangles and demands to abide by the UN statute, the delegations attending the Katowice conference only took note of the IPCC experts' report rather than adopting it. This diffidence sparked a debate in itself but also allowed the conference, despite prominent absences among prime ministers and representatives of the relevant ministries, to avoid becoming bogged down, to hold a proper debate and to create a kind of "Rulebook" of 100 paragraphs. The result is undoubtedly less politically significant today but may become more effective in the future. The text was adopted collectively to enact the provisions of the Paris Treaties with an initial evaluation to take place in 2020.

This is a tool that UN Secretary General António Guterres also intends to use in a form he defined as "ambitious," Guidelines will allow real control over the progress declared by each of the participating States which have already provided the UN with their annual emissions data, albeit without any consequence. This data, together with documentation, can be found on the United Nations' website.

Another omission, one denounced by environmentalists, is the insufficient protection for the most vulnerable populations facing climate change. The Adaptation Fund is expected to receive 128 million dollars, but the rules established are not strict enough to guarantee these contributions. The transfer of development projects and new technology will be included in this huge economic and cultural transition. Finally, the methods for monitoring CO_2 emissions have been codified, placing responsibility for determining them on the states that produce them, and procedures have been established for a kind of stock exchange, Global Stocktake, where every ton of emissions can be traded for a handsome payment.

One is left wondering whether the "draw in extra time" at COP24 in Katowice should be viewed as a stagnation of the Treaties or as a way to advance a few meters when under a deadly and powerful barrage of enemy fire. The Global Stocktake is opposed, for example, by the new Brazilian president, Jair Bolsonaro. Under pressure from Bolsonaro, the introduction of an accounting system for the world emissions market, a financial deterrent for polluters, who would be obliged to pay for their emissions, was postponed until next year.

Notwithstanding the differences of opinion, it is undeniable that the Katowice conference transformed the principles of Paris 2015 into a series of applicable and controllable procedures. In short, the commitments given three years ago are beginning to take shape, and 2020 is around the corner. The "truce" signed in Poland after 10:00 p.m. on Saturday, December 15 tells us only one thing for certain: COP25 in 2019, on the eve of the binding and expensive decisions that will be taken the following year, will be more than a polite diplomatic wrangle

ROBERTO DI GIOVAN PAOLO

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the deal elsewhere in the world. Australia, a coal-rich country that has long been resistant to strong climate measures, is pushing back more audaciously against the idea of quitting coal or funding green projects in developing countries. Brazil's right-wing President-elect Jair Bolsonaro floated the idea of pulling out of Paris during his campaign and appointed a climate skeptic to be foreign minister. The government also withdrew its offer to host next year's COP25 summit.

"You see that while the U.S. is not showing leadership, other countries are more likely to weaken their stance—Australia is a good example—or not feel under pressure to act," Bell said. "Without U.S. leadership, it is really hard to get real global action on these issues."

The next E.U.-U.S. chasm

While transatlantic climate change relations soured early in Trump's term, his stance on energy security and diversification remained broadly unchanged: Europe, particularly its central and eastern countries, needs fresh sources of gas to free itself of Russia's grip on the market. The difference from previous administrations is that Trump ramped up the commercial rhetoric, frequently arguing that the U.S. is ready to sell liquefied natural gas (LNG) as an alternative.

E.U. leaders have followed by touting the potential for American LNG in recent months. But their overtures amount to little more than political shows of support and are unlikely to bring tangible changes in European gas supply or policy.

When European Commission President Jean-Claude Juncker visited the White House in July, the two sides agreed to facilitate gas trade to help diversify and secure Europe's supplies. Nonetheless, it is ultimately up to companies, not governments, to sign supply deals. And Juncker made clear it remains up to the U.S. to make its LNG commercially attractive to European buyers. "The growing exports of U.S. liquefied natural gas, if priced competitively, could play an increasing and strategic role in E.U. gas supply," Juncker said. "But the U.S. needs to play its role in doing away with red tape restrictions on liquefied natural gas exports. Both sides have much to gain by working together in the energy field."

Polish state-run gas company PGNiG then signed a deal with the U.S.' Cheniere Marketing International in November to import LNG over 24 years. The supplies might reduce Poland's dependence on Russian gas, but it will not make a large dent in a country that relies on coal for around 80 percent of its electricity generation.

Angela Merkel expressed support for plans to build Germany's first LNG import terminal in October by saying the government is looking at the possibility of providing funding. But the project has yet to be formally approved, and Germany's gas use will depend on if and how quickly the country decides to phase out its large coal-fired power capacity.

Now this tacit cooperation risks stalling as a result of American sanctions. Trump's decision to pull out of the Iran nuclear agreement and reimpose sanctions has already chilled European excitement around investment in the country's vast oil and gas reserves, as well as renewables and other projects. Even before Trump announced his withdrawal this spring, the uncertainty dissuaded many companies from committing to investment.

The U.S. is considering sanctioning the Nord Stream 2 gas pipeline, which is already under construction, and that would hurt the five Western European companies backing the project with Russia's state-run Gazprom. Russia's aggression against Ukraine in late November, firing at ships and seizing their crews off the coast of Crimea, could trigger sanctions sooner than expected.

Tensions over Nord Stream 2 and the role of Germany

Many argue the U.S. is right to target what is seen as a Kremlin tool to deprive Ukraine of revenue from Russian gas that crosses to Europe, while tightening its grip on the E.U. market. Punishing private European companies, however, may go a step too far.

Even the European Commission, which made numerous attempts to quash the project on the grounds that it will increase reliance on Russian gas, lobbied Capitol Hill in 2017 to narrow the reach of sanctions that could have touched projects such as Nord Stream 2 or the Zohr gas field in Egypt, which Eni is developing with Russia's Rosneft.

Berlin made clear that sanctions on Nord Stream 2 would not shake its support for the project. "I have taken note of the criticism but nothing has changed in the basic view of the economic project, which is what Nord Stream is," government spokesman Steffen Seibert said in late November, according to Reuters. It would therefore raise a number of challenges in the U.S.-European relationship and America's ability to carry various policies, said Brenda Shaffer, a professor at Georgetown University's Center for Eurasian, Russian and Eastern European Studies. For one thing, E.U. senior representatives are unlikely to be happy, even if they oppose the pipeline project, she said. For another, it could actually weaken Washington's efforts to sanction Iran. "If these companies are already sanctioned, they might feel free to engage in trade with Iran, Shaffer said. "Germany would also most likely increase efforts to undermine the Iran sanctions if its energy companies and project were sanctioned by the U.S."

Our journey to discover Trump's America and its relations with the rest of the word ends here. These relations have certainly been influenced by the President's volcanic personality but also by far more concrete variables, notably the abundance of gas and oil enjoyed by the United States thanks to shale. With the midterm elections that changed the domestic political balance now behind us, the upcoming presidential elections are already looming on the horizon.

Energy security/The old world at risk of blackout

European Shadows

Brussels' plan to reduce CO_2 emissions via the increased use of renewable sources and the decommissioning of large fossil fuel power plants could conflict with the need to maintain sufficient electrical power to avoid power cuts

DAVIDE TABARELLI

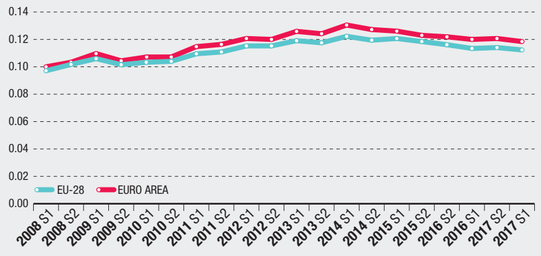
He is Chairman and co-founder of Nomisma Energia, an independent research company in Bologna that deals with energy and environmental issues. He has always worked as a consultant for the energy sector in Italy and abroad, dealing with all the major aspects of this market.

On October 20, 2018, a typically cold, wet autumn Saturday morning in Belgium, at the Liège Palais des Congrès, site of the 1905 Expo, the École Polytechnique awarded degrees to around 100 students. Along with their families and 30 professors from various disciplines, the graduating students listened in silence to the rector's speech. "Today, you become engineers and your task is clear: to solve the world's problems, such as avoiding the upcoming blackout in the national grid." These words captured widespread concerns in Belgium, the heart of Europe, where the closure of five of its seven nuclear power stations for maintenance has put the entire electrical system under stress, raising the specter of a blackout. This warning could be a harbinger of things to come for the rest of Europe, where the plan to free systems from fossil fuels and nuclear power will require electricity from renewable sources of unprecedented, and perhaps unrealistic, proportions. This plan would also put network safety at risk. The limit of renewable sources, →

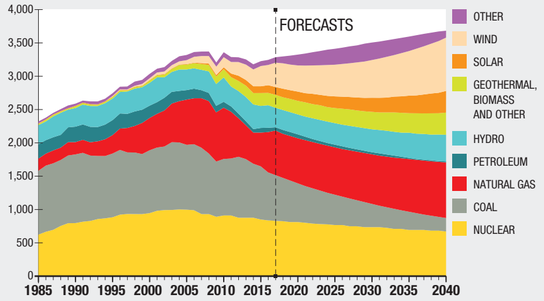
The power of energy

The price and reliability of electricity supplies are key elements of a country's development strategy. Electricity tariffs are particularly relevant to levels of international competitiveness, as a significant proportion of the total production costs of many large companies can be attributed to this resource, especially in the manufacturing sector. The price of electricity is influenced by the price of primary fuels, to the cost of CO_2 related certificates, and to duties and taxes.

DEVELOPMENT OF ELECTRICITY PRICES FOR NON-HOUSEHOLD CONSUMERS, EU-28 AND EA, 2008-2017 (EUR per kWh)

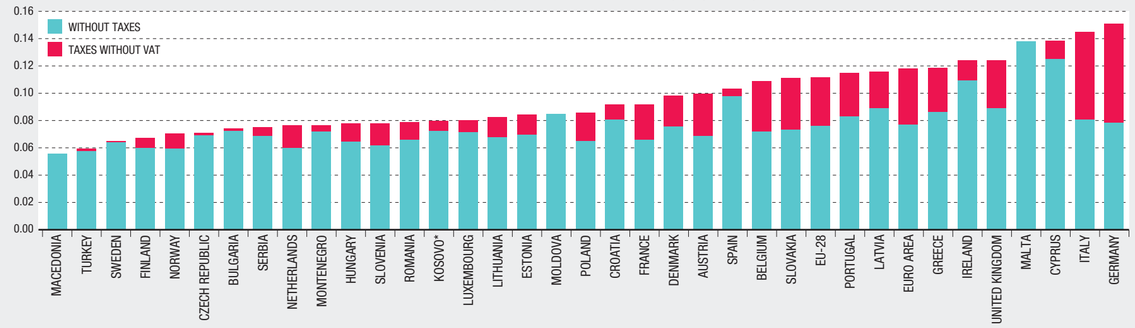


EUROPEAN UNION, ELECTRIC PRODUCTION (TWh)

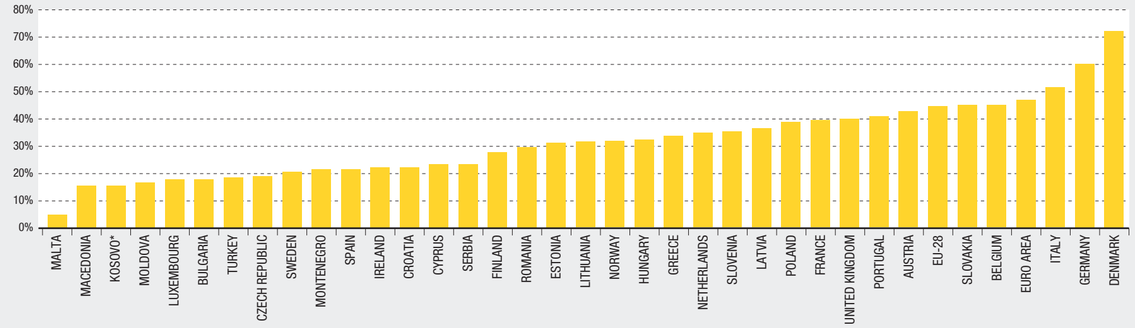


Source: Eurostat, May 2018

ELECTRICITY PRICES FOR NON-HOUSEHOLD CONSUMERS, SECOND HALF 2017 (EUR per kWh)



SHARE OF TAXES AND LEVIES PAID BY NON-HOUSEHOLD CONSUMERS FOR THE ELCTRICITY, SECOND HALF 2017



(*) This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of Independence.

especially wind and solar, is their intermittent nature, only being available when the wind blows or the sun shines, not at night and perhaps not even when it is cold. More detrimental is their low energy density, i.e., to produce the same amount of energy from one kilogram of fossil fuels, they require huge areas of land, which would therefore also require very expensive and inconvenient electricity transmission systems. The ongoing transition in Europe, the largest in terms of global commitment, is into renewables, which do not emit CO_2, and which can be exploited for energy production. Sources for heating or which support transportation experience greater difficulty, as they consist of polluting biofuels such as wood, which produces smoke and particulates, and requires intensive exploitation of woodlands or agricultural land.

European ambitions for the development of renewables

On November 28, 2018, the European Commission relaunched its environmental policy with a new objective for 2050 of a carbon-neutral Europe, i.e., one with a balance between emissions and zero absorptions. This is not new—it simply confirms a decision made in the 2011 Roadmap, which also set the objective of CO_2 emissions by 2050 between 80 and 95 percent of 1990 levels. A few months earlier, in mid-June 2018, the European Commission had also agreed to increase the use of renewables to 20 percent by 2020 and to 32 percent by 2030, in comparison to the current 17 percent. This percentage represents the ratio between renewable energy production and gross domestic consumption, including transportation and heating, although the figures in electricity production will be are just as ambitious, despite not yet having been set. The proportion of these is due to increase from the current 30 percent to over 60 percent in 2030. These are amazing goals, as dizzying as they are demanding, far away enough over time to spare the politicians from the need to answer for any failures, as they will have already been retired for some time. The effect is also to distract from a reality that ignores some of the fundamentals, such as the fact that the electricity networks represent the nervous system of Europe, that the prediction of growth in intermittent renewables poses immense technical challenges, and that the transition will come at a heavy price, with currently high costs that continue to increase.

While Brussels is celebrating sustainability with new promises, in Paris, President Macron has problems putting into practice his promises from a few years ago. The French people's reaction to the January 2019 announcement of an increase in excise duties on diesel has been incredibly negative, despite the goal of the increase being to penalize traditional cars in favor of electric ones. The gilets jaunes, named after the yellow high-vis jackets they wear, are contesting the energy transition policy handed down by the rich elite, a policy that raises energy prices affecting the wallets of the lowest-income population groups. We have to wonder what will happen in the coming years when electricity bills start to rise to cover the costs of renewables. To ease the transition, Macron announced on November 27, 2018 that the goal to reduce the use of nuclear power to 50 percent, from the current 76 percent has now been put back to 2035, no longer 2025 as promised by his predecessor Hollande. More important than the street protests, where the nuclear question is not being raised, is France's inability in seven years to give up such a large proportion of nuclear energy production, currently over 100 billion kilowatt-hours. Such a cut would lead to stability problems in the national grid, not only in France but also in neighboring countries, starting in Italy, sadly the country most dependent on electricity imports from abroad, especially nuclear energy from France. Also on November 28, 2018, the organization that includes the European electricity transportation network operators published its half-yearly report on the adequacy of the European electrical system. The report stressed that in the event of a severe cold snap, a normal occurrence in winter, Belgium, France and northern Italy would be at risk. What "at risk" means is unclear. In the best-case scenario, when the cold comes, as it did with the Beast from the East in February 2018, electricity prices would surge upward. When it is cold in many countries, but especially in France, more electricity is used, because heating, especially additional heating, uses electrical resistance. In Italy, more simply, the result is greater consumption because many people there use electric heaters.

More demand for energy, higher price instability

To cover the higher demand, more power stations are required. These would be less efficient because they use precious diesel, which would have to be imported from eastern to western Europe, thereby incurring greater transportation costs. Other complications could also come into play, such as the fact that colder temperatures usually bring high pressure. If the weather is good, the wind drops and so does the electricity production of wind turbines in northern Europe. Also when there is good weather, rainfall can be low, resulting in a decrease in hydroelectricity plant production and leading to additional demand for energy produced by more expensive marginal power stations. These are not exceptional events—they occurred frequently in the last two years. However, when there was plenty of traditional production there were few consequences, whereas now, with more renewables and lower capacity, only a few drawbacks are enough to create difficulties. Proof of this lies in the fact that wholesale electricity prices in Europe have been steadily growing for the last three years in the countries that are most committed to reforms, especially France. In late November 2018, French prices were close to EUR 70 per megawatt-hour, about EUR 30 higher than usual levels, and this resulted in a higher average cost of electrical generation for the French grid. In the last three years, closures for maintenance were needed in early winter in the large nuclear power plants, with resultant price increases. In Germany, after three years of average values close to EUR 30/MWh, 2018 prices remained steadily above EUR 40, frequently peaking at EUR 60. In the United Kingdom, the European country that has spent the most in recent years on coal-fired power station closures, prices have stabilized at EUR 60 per megawatt-hour, compared to previous levels, when most production was from coal, of below EUR 40. Meanwhile, in Berlin the committee tasked with discussing what to do with the more than 150 coal-fired power stations producing almost 40 percent of German electricity has continued to postpone their reporting date. The conviction is ever stronger that, just as France cannot give up nuclear power, Germany will not be able to get rid of coal. This is yet more valid if it is taken into consideration that Angela Merkel is holding onto the commitment to exit from nuclear by 2022, the impact of which is less significant than in France, but still worth 80 billion kilowatt-hours, 12 percent of total. The closure of these power stations, probably compensated for by increased wind capacity, will worsen price instability.

Consequences of the risk of blackouts in Europe

All in all, if it were only a price problem, although annoying, it would not be particularly serious. The critical points mentioned by electricity transporters could take on much more serious connotations, damage that simple economic calculations cannot clearly express. This worst-case scenario is non-delivery of electricity, a technical expression for blackouts that masks a very serious occurrence because of the vital nature of electricity for end customers, whether industry or private citizens. In other words, blackout, including due to superstitions, should not be mentioned in the European electricity industry, struggling as it is with this most resounding energy transition. This extreme occurrence, fortunately increasingly rare, instantaneously takes people, factories and services back to the pre-industrial age, with no light, lifts, air conditioning, television, mobile phone or car recharging. Attempts at putting a price on such non-delivery of electricity indicate values of EUR 3,000 and over per megawatt-hour, at least 500 times the current market price. This level can easily be understood by any ordinary citizen if they take into account what they would be willing to pay to restart a lift if they were stuck due to a power cut. EUR 3,000 per megawatt-hour, equivalent to EUR 3 per kilowatt-hour is enough to keep the lift in a six-story building going for one day, consuming no more than 1 kilowatt-hour. Italian consumers are better aware of the importance of electricity supply after they witnessed one of the worst blackouts in world history on September 28, 2003. From 3 a.m. Saturday night into Sunday morning, no part of Italy had any electricity apart from Sardinia and Elba—about 56 million users were cut off. Little by little, the power came back on, first in the north, from 8 a.m., then gradually down throughout the country, with the lights in Sicily only coming back on at 10 p.m., 18 hours later. A similar event, if a lesser one, occurred in 2006, between Germany and France. Since then, massive investment has been plowed into national grids. Despite the increase in intermittent renewables, such dramatic events have not recurred. However, dips in electricity demand, due to the economic crisis, are just as significant. More serious issues have arisen over recent years. Not by chance, the slight recovery in consumption over the last three years has been accompanied by more frequent tensions due to rising prices. The future is a concern, partly because demand should recover, both due to a more sustained pace of economic expansion and due to greater penetration of electricity into final consumption, one of the fundamental objectives of supporters of the energy transition. A greater challenge will be the fact that the current capacity of wind production in Europe will need to double or more—and solar power will need to increase threefold or more—to reach a level close to 40 percent of overall electricity production, compared to the current 15 percent. It has taken 60 years to build the current European electrical system, consisting mainly of power stations meeting the old large-scale requirements so as to achieve economies of scale, and downstream cascade transportation and distribution to the end customers, to gain greater control over the system. The idea that the system could be completely revolutionized in favor of intermittent renewables in only 12 years is not ambitious. It is a dream.

The myth/The eternal challenge between molecule and electron

The New Frankenstein and the Limits of Batteries

The magic of electricity has animated scientific and literary fantasies since time immemorial, but the ambition to replace fossil fuels clashes with the intermittency of renewables and the weakness of storage systems

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"t could work...! It... could...work!!" Dr. Frederick's experiment in Young Frankenstein, the loose reinterpretation of Mary Shelley's novel, is a symbol of the extraordinary saving capacity of electricity. Mary Shelley, just 19 years old, had been fascinated by the studies and experiments that were proliferating throughout Europe around a phenomenon known since the time of the Greeks. The fact that a natural flow of electricity exists was also known to Thales of Miletus and the early philosophers who gave the name Elektron to amber, given the properties of this resin to electrify and attract other materials when rubbed. But capturing and using this flow was another matter altogether. Centuries passed. After the kite races in thunderstorms of Benjamin Franklin, an eclectic inventor of bifocal lenses, fins, daylight saving time and, in his spare time, a founding father of the United States of America, attention shifted from the electricity of lightning to that of animals. But no-one could understand what this flow was and, above all, what it was for. For several decades, the University of Bologna was the MIT of its time. Galvani's frogs were the first step for experiments that became ever more gruesome. Convinced that life was an electrical fluid, some scholars began to electrify corpses with the idea that they could be resurrected. Galvani's nephew, Giovanni Aldini, transformed the experiments into a spectacle. The difficulties in finding bodies intact from the neck up during the French Revolution saw him emigrate to London, where he terrified viewers who saw serial killers reopen their eyes or their bodies convulsing. Sometimes the shock was such that, as well as the deceased-guinea pig, which unfortunately, or fortunately, did not survive once the electrical stimulus was turned off, some poor spectators, unable to withstand the spectacle, also succumbed.

Prometheus between electric and magnetic fields

But let's get back to Mary Shelley. In June 1816, the future Mrs. Shelley was at Villa Diodati, near Geneva, in the stimulating company of Lord Byron, Percy Shelley and Dr. John Polidori. As in all respectful ghost stories, it was a dark and stormy night in the colder summer of the past. 1816 was "the year with no summer" due to the effects of ash from the eruption of the Tambora volcano in Indonesia, which altered the cycle of the seasons. Aldini's experiments definitely came to the young writer's mind when she decided to breathe literary life into Frankenstein, the modern Prometheus. Less clear is the inspiration for the second "monster" born that evening, the vampire of Dr. Polidori, as part of the then-popular trend of Gothic stories. However, the true nature and the great potential of electrical flow continued to remain obscure, even to the literary guests at Villa Diodati, and it took another 100 years to fully understand them. Lightning or dancing corpses were not the expression of a vital fluid, but demonstrated the capacity of matter to exchange electrons. Under certain conditions, negatively-charged materials with excess electrons and positively-charged materials with a lack of electrons exchange these tiny particles, generating an electric field. The variation of this field in turn also generates a magnetic one in a twinning between electricity and magnetism that clearly explains why hair or certain tissues suddenly rise and attract small metallic objects. The experiments of Michael Faraday, in the mid-1800s, attested to this close relationship, demonstrating the basis of all the alternators, dynamos and engines that we use today to convert mechanical energy produced by the wind, fossil fuels and water, via a magnet, into electricity. "It could work...!" Like 200 years ago, today's electricity requirements are enormous. New Frederick Frankensteins aspire to revolutionize the world of energy by almost completely electrifying consumption and expanding the role of renewable sources to cover all of electricity generation. It is an ambitious experiment that must overcome two challenges to its success:

- the electrification of end consumption;
- the establishment of continuity in the production of wind and solar power.

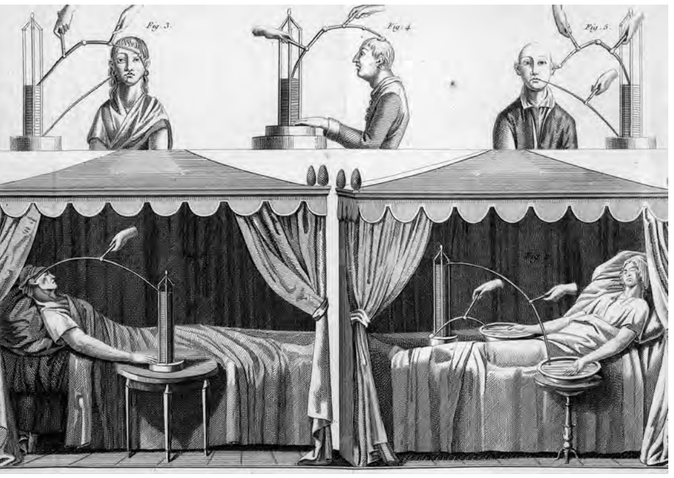
There is also only one keystone to success, as we will see below. Let's focus on the first challenge: electrifying demand means freeing consumption from the combustion process. Breaking the bonds of molecules with combustion, releasing energy in the form of heat or light, is the primary form of consumption on which the ancient world was built, with wood and natural biomass, and the modern one, with fossil fuels. Today the combustion of fossil molecules covers 80 percent of primary energy consumption. This consumption includes not only end uses, but also what happens upstream to generate energy, the process losses and energy transportation. Another 10 percent of end consumption consists of the combustion of biomass in the poorest countries, a polluting and dangerous hangover from the pre-industrialized world. The remainder of energy consumption is all the electricity not produced by the fossil combustion, i.e., power taken from nuclear fission, the fall of water, geothermics and a liminal proportion, only 1 percent, from the sun and the wind.

A revolution led by the electron

In short, today's ratio between molecules and electrons in total energy consumption is 9:1. But what happens downstream, at the level of end consumption? In the detail of the various methods of end use, molecules now generate:

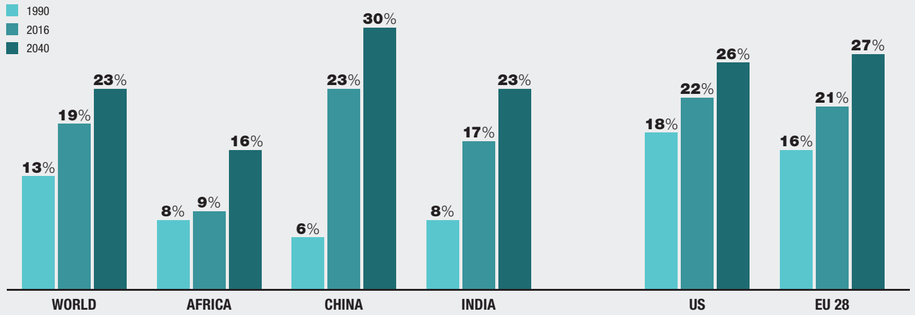
- 99 percent of ground, sea and air transportation requirements
- 100 percent of consumption related to construction work or industrial feedstock, e.g., gasoline in the petrochemical industry
- 60 to 65 percent of domestic and industrial use, with the remaining proportion electrified.

Not only many final uses directly provide for combustion, but also a large part of electricity (80 percent) is produced by burning fossil fuels. It should be remembered that electricity is a secondary source of energy, i.e., it is gen- →

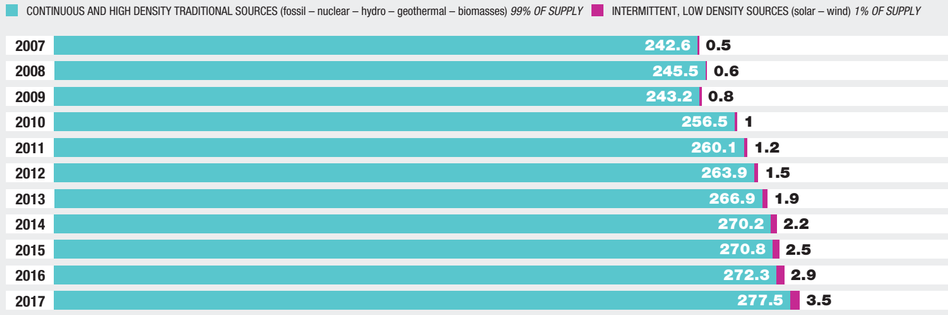


EXPERIMENTS IN SHOWBIZ
Giovanni Aldini, the nephew of Galvani, mounted shows where he terrified viewers who saw serial killers reopen their eyes or their bodies convulsing. This engraving from the 19th century depicts one of these experiments.

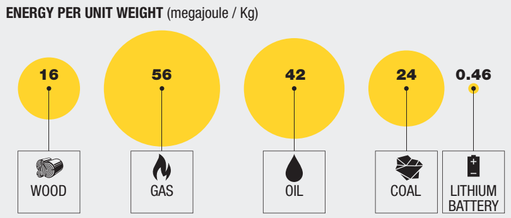
ELECTRICITY DEMAND IN TFC

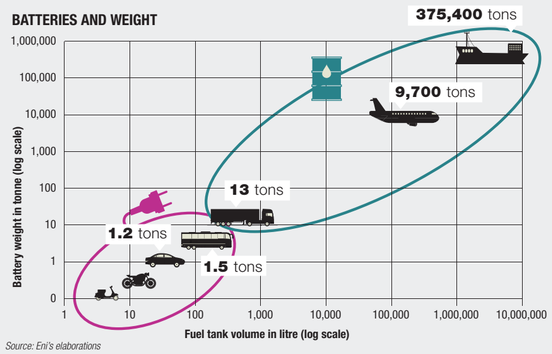


ENERGY SUPPLY



ENERGY DENSITY



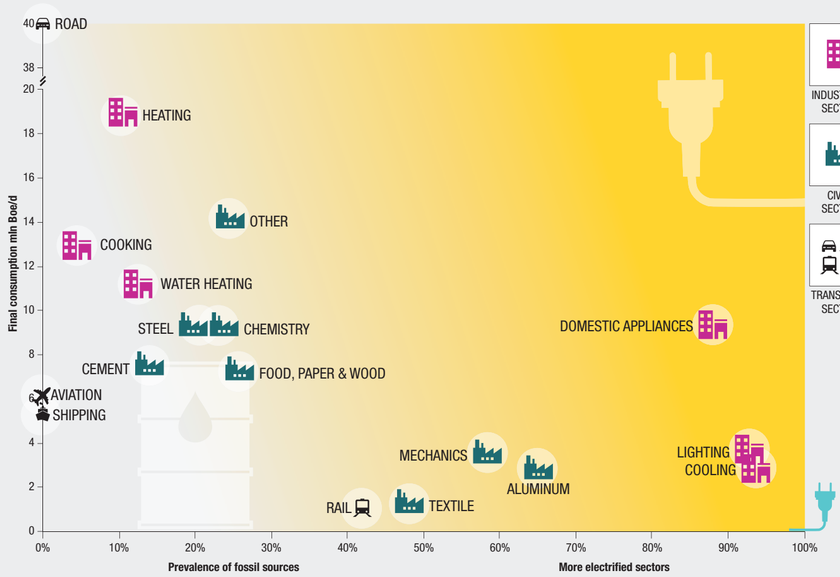


Source: Eni's elaborations

Power, electricity, and the limits of batteries

Today the relationship between fossil fuels and renewables in global energy consumption is still 9-1. 80% of electricity comes from fossil fuels. They meet 99% of energy needs for transport, 100% of consumption for construction or industrial feedback, 60/65% of domestic and industrial use.
In addition to intermittency, one of the variables that still penalize renewable sources is the difficulty of storage, since batteries, the medium of electric storage, have a density of just 0.5-0.7 MJ / kg.

DEMAND BY SECTOR



heated using electricity. Electric kettles and ovens, induction cookers or microwaves confirm that electrons can be a good ingredient in the kitchen. There are still pockets of resistance, as pizza still requires a wood-fired oven, but the change is already well on the way. A further area of consumption where electrons have won by far over molecules is communications: TV, telephones and radios are definitely more versatile than smoke signals or fires. In the *Oresteia*, the fall of Troy is announced by a sequence of torches along the slopes of the mountains... clearly a tennis match can not be followed this way. In their extraordinary marathon, electrons have also replaced other sources such as human muscles in domestic fatigue, the washing machine, dishwasher and vacuum cleaner, for examples. And they are the leaders in the cold cycle, refrigerators and air conditioners, where molecules don't work. Finally, electric motors are now widespread in industry where for centuries men, animals and molecules have been the dominant source. But when we reach the total calculation of the end uses of energy, only 20 percent of consumption is now covered by electricity. The rate of consumption electrification in 1970 was 10 percent. In 50 years, the electrification of final consumption has progressed at an annual average of 0.2 percent. We are far away from the dimensions and rate of a rapid transformation.

erated by other sources. The technological challenge to achieve full electrification, therefore, lies in the transformation of the instruments we use. In fact, the value of energy is nothing more than the ability to carry out actions such as the transportation of people or things, heating, lighting, communications, building new objects and materials. And doing it as efficiently as possible, when we want, and with minimal impact on the environment. Each action has different energy requirements for durability and intensity and can be realized only with the tools that technology offers us. The energy revolution is therefore actually a technological revolution that allows us to perform the same gestures or new actions with instruments other than those we have used to date. If we look at the technological revolution and the challenge between electrons and molecules in end uses, so many important changes have occurred in the last century. In the richest countries today, there is no gas, oil or whale blubber lighting for homes or the streets, nor the use of candles, apart from romantic settings, or fire. Homes can also be

Grandma Duck and the watermelon question

The most obvious gap is in transportation, today almost entirely the prerogative of the combustion of fossil fuels. In urban transport, a first attempt at a move from molecules to electrons had already happened a century ago, but after an initial advantage, easier ignition, the journey similar to alternative cars and greater cleanliness), the race was lost to subsequent technological developments in internal combustion engines. It's amazing to think that while Elon Musk is at the technological frontier today, only 100 years ago Grandma Duck drove obsolete cars made by Detroit Electric, while other characters were driving thundering gasoline cars, a symbol of modernity and progress. The reason for fossil fuel domination in transportation is a question of energy density, the amount of energy contained per unit of weight or mass. Transporting means moving people and goods, an engine, the bodywork, and a certain amount of stored fuel. This is what has resulted in the success of fossil fuels. Fossil fuels have a density of 35 megajoules per kilo (MJ/kg) for coal or 45 MJ/kg for gasoline. Batteries, the form in which electricity is stored, have a density of 0.5-0.7 MJ/kg. In short, in order to carry the same amount of electrical energy, a weight 100 times greater is required than when using fossil fuels. This is why we do not fly or float with electric motors, and the reason why electric cars weigh 20 to 30 percent more than their standard competitors and can only guarantee a journey 70 to 80 percent shorter. It is as if we were deciding to go for a walk in the mountains and we had to choose as a refreshing snack either a watermelon, today's batteries, or an energizing chocolate bar, the tank of gasoline. With the first option, the walk would inevitably be shorter. As long as the energy density of batteries is not increased, the use of electric cars will remain limited to commuting, requiring short journeys and frequent recharging. Further limits to electrical consumption are made in industrial processes at very high temperatures or in those exploiting the molecular components of the fuel to produce materials such as petrochemicals. Of this consumption, 30 percent of the total, it is impossible to change to electrons.

A warm-blooded world in fear of the clouds

The second challenge is intermittency. A switch, the gas pedal or a keystroke provides us with the amount of energy that we need, when we need it. For intermittent sources, solar and wind power, suitable environmental conditions are required to produce the energy needed. We cannot therefore decide when we can consume, as the weather dictates the times and quantities available. Today, intermittent sources have an average operating level of 20-25 percent. In a fully-wind- or solar-powered world, more than two-thirds of the times we would click a switch, nothing would happen. Being intermittent is a bit like the life of cold-blooded animals, which have a reduced metabolism, conditioned by their external environment. If conditions are not ideal, everything slows down, from their heartbeat to their movements. And they wait for the sun to recharge. And not by chance, reptiles' scales function as solar cells to take in heat. On the contrary, warm-blooded animals draw their stock of energy from a high metabolism. They are more complex, the feeding of a sophisticated brain is incompatible with a cold-blooded system and it can perform actions in less favorable climatic conditions. We live in a warm-blooded world: we want to move, produce, communicate, under any conditions and at any time of day. The human brain and today's society is too evolved and complex to slow down life when the wind drops or at night. Once again, the solution lies in storage: batteries will make a difference, increasing the availability of intermittent sources and making it compatible with the perennial need of a warm-blooded world. In conclusion, the modern Dr. Frankensteins' "it could work" can wait. We need to expand the energy density of batteries 100-fold to be able to dream of widespread electrification and to provide continuity for intermittent sources. Human ingenuity will also overcome these challenges, but the technological route has its moment, its progression and its failures. It has taken more than 2,000 years to understand electricity. It has been less than 200 years that we have been generating and using it. In a few decades, we will have to invest in it to learn how to store it efficiently.

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