

world energy
we

DECEMBER 2022 • N. 55





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3 THE CHALLENGE OF 2023
by Mario Sechi

6 PRELUDE TO PROSPERITY
by Moisés Naim

10 THE COMING YEAR
by Lapo Pistelli

14 THE END OF GLOBALIZATION
by Lorenzo Castellani

20 HAPPY 1973!
by Francesco Gattei

24 CHINA OF XI'S THIRD TERM
by Anders Hove

28 BIDEN: SUCCESSES AND CHALLENGES
by Rita Lofano

32 THE ISRAEL-LEBANON DEAL
by Moritz Rau

36 GLOBAL FLOWS: A NEW LANDSCAPE
by Giacomo Luciani

C O N T E N T S

44 THE CHANGE OF PACE OF THE EU
by Nathalie Tocci

50 THE INTERDEPENDENCE ON CRITICAL RAW MATERIALS
by Marco Giuli

54 ENERGY? IT'S ALL NECESSARY
by Davide Tabarelli

60 PRIORITY: THE ENERGY CRISIS
by Brahim Maarad

64 THE SPECTER OF DEINDUSTRIALIZATION
by Chiara Proietti Silvestri

70 AN UNPRECEDENTED SHOCK
by Laura Cozzi

76 THE TREND IN INVESTMENTS
by Alessandro Lanza and Annamaria Zaccaria

80 COP27 FUTURAFRICA
by Giulia Sofia Sarno

84 CITIES, NEW PROTAGONISTS
by Roberto Di Giovan Paolo

88 SHRED THE PATRIARCHY
photogallery by Chantal Pinzi



Nicolas-Sébastien Adam,
Prometheus,
the Louvre Museum, Paris.

THE CHALLENGE OF 2023

by Mario Sechi

FROM THE MULTIPLE SHOCKS THAT WE ARE EXPERIENCING, WHERE THE WORLD OF THE IMAGINARY CLASHES WITH THE MATERIAL WORLD, TO THE SCENARIOS FOR THE COMING DECADES. A VOYAGE INTO THE NEAR FUTURE

MAKING PREDICTIONS is the fastest and safest way to be disproved by history, but it is an exercise that we cannot neglect, by vocation that (most fortunately) coincides with the profession. This issue of WE is therefore a collection of scenarios for 2023 and thoughts on what (perhaps) is to come over the next decades. Labor of Prometheus and Sisyphus (the strength of Greek mythology is one thing that never dies), this voyage into the near future (today and tomorrow) is an occasion to return to some of the lessons of our time, personal accounts and notes from the reporter's notebook.

We have experienced multiple shocks, a sequence of events that has seen two worlds collide: the material and the imaginary. The imaginary dominated the last 10 years, driven by digitalization and by the idea that every "thing" can be reduced to pure data and images, codified in bits and pixels. The rise of the titans of Silicon Valley and the economy's metamorphosis into "computerized discourse" guided "needs" and stock prices. Everything "became" a matter of volatile opinion, vital sectors of production were labeled the "old economy," ready to be archived in the cloud and left to the progressive fate of servers and algorithms. The elimination of the "physicality" of things—molecules—was the mantra, and the result was an explosion in demand for digital products, connections and points of access with no way out.

This world imploded in 2022. It is happening right before our eyes: the Great Boredom has arrived. Big Tech stock prices are in freefall; the pandemic was their peak and their end. To continue on, they must compulsively "invent" new immaterial needs and divert desires, but they have reached saturation point and their next step is to capitalize on biotech laboratories in a screenplay that increasingly resembles a dystopia.

The great discovery came while alienation was reaching its climax of drinks parties on Zoom: we need movement, space, raw materials, energy, contact and life expressed in physicality. In a perfect paradox that is the stuff of novels, the semiconductor crisis has revealed the short circuit of contemporaneity; without those tiny silicon chips, the heart and brain of our society stop working. Reality has come knocking at the door precisely at the home of those who had thought they were refining it, eliminating it with the happiness of the metaverse. Hardware's revenge on software.

The second phase of the return to Earth came at the end of the



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lockdowns. Production resumed at lightening speeds, expectations became exponential, subsidies and monetary policies drove prices up and the demand for hydrocarbons (and their scarcity, a forgotten economic principle) reminded those in power that the economies of advanced countries (and non) run on oil, gas, gasoline and diesel. Timely, honest and relentless reality. Thus, Germany has reopened its coal plants and Japan has revived its nuclear energy program. All governments are on the hunt for hydrocarbons, having preached their end and compelled a global stop in investments. French president Emmanuel Macron has said that "the era of abundance has ended," although even this statement could be proved wrong (in either direction—read the story of the rise and fall of the Roman Empire). In any case, 2022 is part of a new cycle of history that started at the end of 2019 when an invisible agent—the new coronavirus—appeared in Wuhan, China.

We are still in this phase of history: in just a few weeks, China went from a Zero-Covid Policy to the reopening of its borders, leading to an exponential rise in cases, to the extent that the government has been forced to cancel its daily bulletins on the epidemic. No one can say what the outcome of this social experiment will be. Xi Jinping has had to backtrack on the lockdowns to avoid instability in the country in the face of protests and the collapse of production. Now he must tackle the health crisis and, once again, the costs will spill over into the West.

The material, the corporeal, the real has regained its dominance: with the biological risk, climate change (mild winter temperatures in Europe and the arctic blizzard in America) and the threat of nuclear war (which has never been so tangible since the Cuban missile crisis of 1962). A wartime Christmas features in the European 2022 calendar, although few remember this.

Accepting the challenge of 2023 means studying these phenomena, abandoning schemes that have already proved disastrous (and dangerous), opening our minds and not letting ourselves be blinded by the -isms that have led to gigantic blunders. Yes, an era has ended. Not the era of abundance, but the era of illusionists.

we



PRELUDE TO PROSPERITY

by Moisés Naím

2023 IS GOING TO BE A BUMPY YEAR, WITH WORLD LEADERS FORCED TO FACE UP TO THE CONSEQUENCES OF THE MISTAKES THEY'VE MADE. BUT, WITH ANY LUCK, IT WILL BE REMEMBERED AS THE PRELUDE TO AN ERA OF RENEWED FREEDOM AND PROSPERITY

2 023 IS GOING TO BE A BUMPY ONE, with leaders around the world forced to face up to the consequences of the mistakes they've made. Some will respond successfully, others less so. Nowhere is it likely to be smooth sailing.

RUSSIA, THE DISASTROUS WAR OF PUTIN

No mistake of recent times has been bigger than the invasion of Ukraine, and Vladimir Putin will spend most of his time in office trying to manage the fallout from his disastrous blunder. The impact of sanctions on the Russian economy are beginning to be felt in earnest, as shortages for chips, high-tech components and a panoply of critical products are beginning to seriously hamper an outdated economy's ability to produce even basic goods and services. Access to the international financial system is severely curtailed. As the spring thaw emerges, the sensible move for Putin will be to try to keep the conflict frozen to avoid further humiliating battlefield losses. But it's by no means a given he can resist pressure from hardliners around him to launch a spring offensive. If he does, he'll once more be frustrated by the technological sophistication of Western weapons and surprised by growing unrest not just among Russia's people, but even the elite close to him. It's a miserable set of circumstances to find himself in, and he has no one but the man in the mirror to blame.

EUROPE, THE DEPENDENCE AND THE ENERGY SHOCK

But European leaders will also spend 2023 busy handling the mistakes of the past, chief among them the continent's in respect disastrous dependence on Russian energy. With economic vitality badly sapped by inflation and the energy shock, radical political voices will find themselves in a target rich environment ahead of elections in Greece, Spain, Poland and Estonia. With no signs of a reprieve in post-Brexit economic stagnation, Britain will continue to face up to the implications of that enormous and self-inflicted blunder for years to come.

U.S., RECESSION EMPOWERS THE MOST EXTREME POLITICAL VOICES

In the U.S., the ongoing fallout from the spending binge of the COVID era will make itself felt in the form of a short, sharp recession, which will as always empower the most extreme political voices. With gridlock in Congress, Joe Biden will be reduced to governing by executive order, but constant reversals at the Supreme Court will likely limit the usefulness of that approach. In the second half of the year, Americans will likely face the unprecedented situation of having a leading presidential candidate who is facing a federal indictment.

Those who assume this will render former president Trump electorally uncompetitive could be in for a surprise, as his voters are in no mood to be cowed by a prosecution perceived as partisan.

CHINA, ZERO COVID STRATEGY WEAKENS THE PARTY

Meanwhile, in China, Xi Jinping's growing totalitarianism will meet the limits to its effectiveness, as a wholly needless Zero Covid-induced recession undermines the legitimacy of Communist Party rule. With protests continuing to meet harsh police repression, the old implicit social compact at the heart of China's growth model—the state will deliver jobs and higher incomes but in return you must stay out of politics—will look increasingly frayed. And while the Communist Party will certainly hang on, the old days of social peace alongside boundless economic dynamism will begin to fade in the rearview mirror of history, as China enters a new, rockier phase of development. The debates about when will China's economy overtake that of the United States will abate and feel less urgent.

INDIA-PAKISTAN, THE NEGLECTED CONFLICT

India-Pakistan will remain the most dangerous, most neglected frozen conflict throughout 2023. The Kashmir conflict between these two nuclear powers will continue to be a critical risk that, while now dormant, can rapidly escalate. With political uncertainty in Pakistan amidst an escalating row between the still-powerful former Prime Minister, Imran Khan, and the country's powerful military elite, the uncertainty is muddled by a dangerous complacency.



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AFRICA, MORE LIGHTS THAN SHADOWS

Meanwhile Africa will remain exposed to commodity price shocks, as it always has been, with some countries like Zambia and South Africa deepening their democratic institutions while others from Sudan to Uganda travel in the opposite direction. So long as the long-simmering conflict in the east of the Democratic Republic of Congo does not flare up into a major conflagration again—by no means a foregone conclusion—the continent should be able to count 2023 as a year with more positives than negatives.

LATIN AMERICA, POLITICAL POLARIZATION AND RECESSION

In Latin America, the new wave of center-left governments will surely realize the limits of its own power, beginning in Brazil where Lula will seek to somehow govern a country facing extreme levels of polarization. With Capital markets tapped out, Mexico, Argentina, Brazil, Colombia, Peru and the rest of the second pink wave countries will face acute voter disappointment, as promised improvements in living standards fail

to materialize. In Argentina, this could see the Peronists lose power in elections at the end of the year, as a new normal of alternation in power takes hold. In Brazil, it could easily lead to an early impeachment attempt against Lula. And in Peru—well, presidential turnover has become so endemic there that no one will be surprised to see the hapless, out-of-his-depth Pedro Castillo removed from office by a congress exasperated by his incompetence.

In addition to paralyzing polarization and ugly politics, the most important trend shaping Latin America is what the United Nations characterizes as the worst economic downturn since the 1980s, a period sadly remembered as “the lost decade.” Altogether, it's a dismal outlook, but there are a few bright spots. Thailand looks set to move a step closer to becoming a normal functioning democracy again as it goes towards its second general election since the disastrous 2014 coup. Japan seems to have finally broken the disinflation curse that had plagued its economic performance since the 1990s. The weak yen is finally injecting some vitality to the anemic economy. Ukraine looks likely to weather a difficult winter but remain

militarily solid despite the Russian onslaught. And NATO looks to remain stronger than ever, having rediscovered its sense of mission in response to Russian aggression. Still, let's be clear: few will remember 2023 as the good times. But, with any luck, it will be remembered as the rocky prelude to an era of renewed freedom and prosperity.

We

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Aerial view of the Cinelândia district in the center of Rio de Janeiro, while supporters of the newly elected Brazilian president, Lula, celebrate his victory in the run-off against Bolsonaro. In Latin America, the new wave of center-left governments will certainly reach the limits of its power, starting with Brazil where Lula will try somehow to govern a country that faces extreme levels of polarization.



THE COMING

YEAR

by Lapo Pistelli

FRAGILE, FRAGMENTED, POLARIZED. DENSELY POPULATED. WITH NEW QUESTIONS TO BE ANSWERED AND OLD CERTAINTIES THAT HAVE CRUMBLLED, THIS IS THE WORLD THAT AWAITS US

AFTER THE SCOURGE OF COVID-19, which caused over 6.5 million deaths worldwide, and the return of war to European soil 70 years after the Second World War, what else awaits us in 2023? This is the question that is on many minds. Even if we and our loved ones haven't been affected directly by the pandemic and aren't near the missiles flying over Ukraine, these two disasters have a deep impact on our otherwise normal life.

The expansive cycle of the economy is slowing down conspicuously, making a possible recession imminent; the inflation monster is back and is devouring household savings and purchasing power; the costs of energy and many other raw materi-

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als are hitting our wallets hard. In the globalized world, to which we have been accustomed for thirty years, every political or economic fracture bounces and reverberates from one part of the world to another, forcing us to raise our heads from our daily scenario to understand what is happening around us, even if that around can be thousands of miles away.

A NEW DEMOGRAPHIC MILESTONE

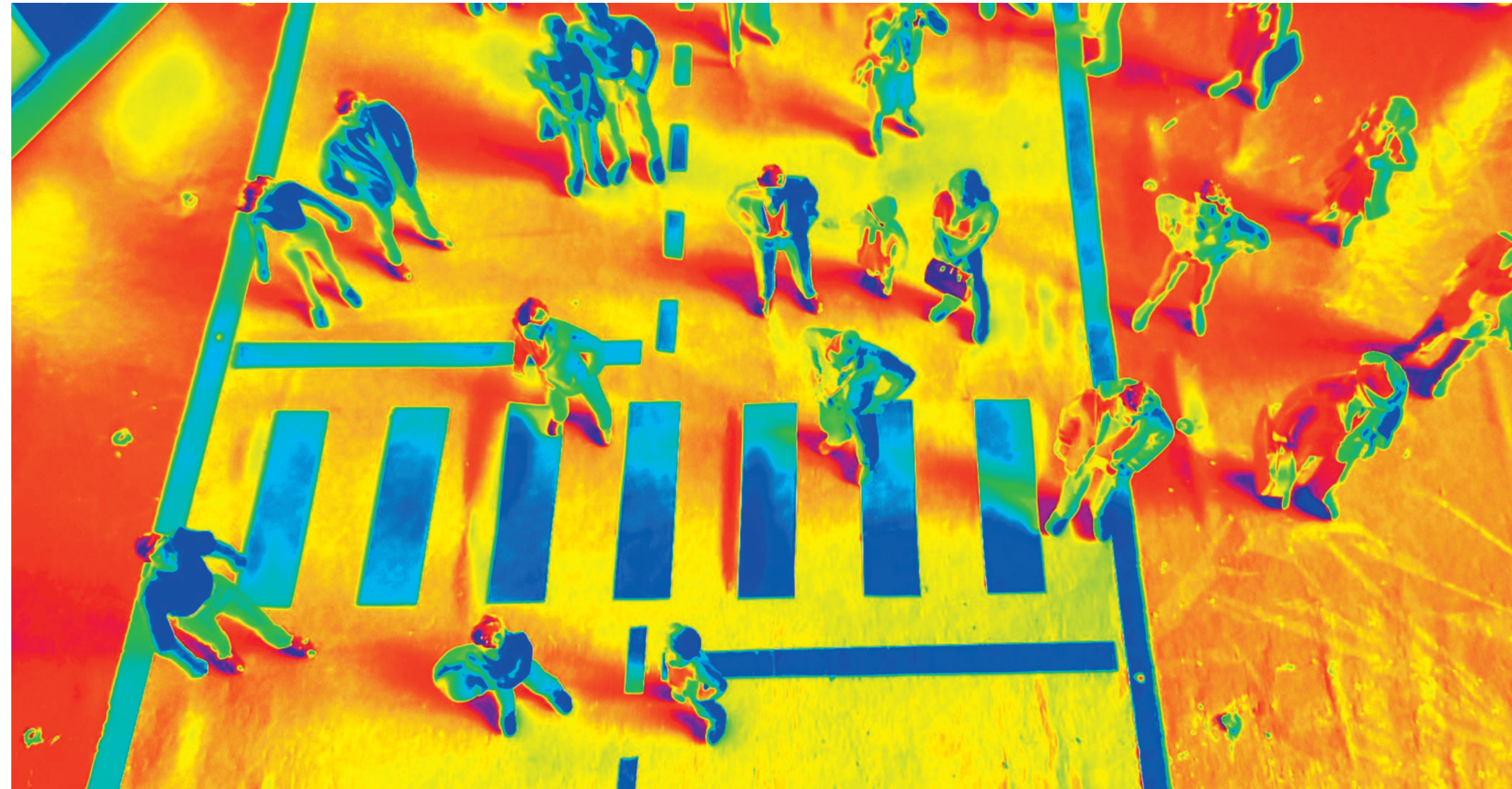
On November 15 of this year, the Earth's population reached 8 billion people. It's taken us just 11 years and a little over a month since October 31, 2011, when we reached the previous threshold of 7 billion. And we've spent less than 130 years to get here from 1 billion. A demographic race unprecedented in human history, made possible by the extraordinary economic, scientific and technological progress of the 20th century, the century of oil and plastic, the automobile and household appliances, vaccines and genetics, the media and digital social media, space exploration and climate change, the return of women in leading roles, psychoanalysis and the disintermediation of relationships, mass parties and their decline.

We are well aware of the main protagonists in this new demographic milestone. When Mao Tse-Tung victoriously concluded the communist revolution in 1949, China was the most populous country in the world with 542 million people; it still held the record on January 1, 2022, with over 1.4 billion. In 2023, India is set to overtake China. China has begun what is known as a "demographic transition": from a country with a high birth rate and high mortality to a country with a low birth rate and low mortality; from a young country to one that will soon face the economic and social difficulties of an aging population. India is still living in the previous season. But these numbers tell us that the shift of the balance towards the south and east continues. The world is increasingly less white, less Christian, less Western.

FRAGMENTED AND POLARIZED GEOPOLITICS

We will still live in a time of fragile, fragmented and polarized geopolitics. But the origin and possible impact of the political and economic wave of 2023 will still be in Europe and will depend on the outcome of the Russo-Ukrainian war.

However, two serious and potential fires are smoldering under the ashes, in Taiwan and Iran. Beijing and the ayatollahs of Tehran, Putin's main allies, are watching the clash between Russia and Ukraine, a clash supported by Europe and the U.S. Should Kiev continue to resist and eventually prevail, Iran and Taiwan could continue to simmer without exploding. If, on the other hand, Moscow were to tip the balance in its favor, the temptations would grow for Beijing and Tehran to strike their blows: China, to swallow up the most disputed island in the world; Iran, for the powerful clergy to repress a young society determined to eliminate oppression, and to con-



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tinue the development of its own nuclear power.

The war in Europe has already caused serious economic and humanitarian consequences due to the grain crisis, and Africa is paying the highest price for this shortage. But the fear of the consequences of the war, the necessary sanctions against Moscow and the disruption of the supply chains of raw materials and energy commodities of which Russia is a global supplier have awakened the Siamese specter of inflation and recession. Inflation is very high in the U.S. and Europe and it is no longer the controlled instrument of monetary policy, but instead looks like the genie that got out of the lamp. The recession is mild in the U.S., more marked in the European Union. Both conti-

nents will have to reckon with their fiscal capacity and ability to finance corrective and revitalizing maneuvers.

In democratic countries, the challenges posed by the war have not lessened political debate. In the U.S., after Trump's false step in the midterm elections, we will see if the former President will try to take back the party to attempt a second race. What is certain is that Trump is trying to mobilize the most extreme and irreducible wing of his electorate through a continuous game of destabilization of the institutions and delegitimization of his internal and external opponents. In less radical tones, Europe continues to experience a tough confrontation between sovereigntist and community policies: de-

spite Brussels' constant calls for solidarity, in the discussions this year and presumably next, the voices of national interest are making a loud return.

TRANSITION: WE NEED GREATER REALISM

In the world of energy — our *World of Energy* — events have forced institutions, citizens and operators to abruptly realign the debate to the harshness of reality. A few years ago, it was normal to discuss energy by anchoring scenarios and decisions to the "trilemma" scheme, i.e., how to progress while ensuring a balance between transition, security of supplies and competitiveness of the economy. Then, after the 2015 COP in Paris and the acceleration impressed in Europe by the Green Deal and the environmental movements, attention shifted almost exclusively to the transition, implicitly assuming that the process could have taken place without external constraints, in a peaceful context, and without impacting the other two vertices of the triangle. COVID-19, then the post-pandemic economic rebound and the war in Europe have made it clear that energy security is like health: we take it for granted until the day we get sick. The competitiveness of economic systems, including the re-shoring of supply chains and new geopolitical dependencies for transition minerals, has proved costly and difficult.

The transition remains the north star that institutions, companies and citizens have now chosen and accepted, but external constraints weigh heavily and force everyone to be more realistic about the times and solutions to be adopted, depending on the degrees of technological and industrial maturity available.

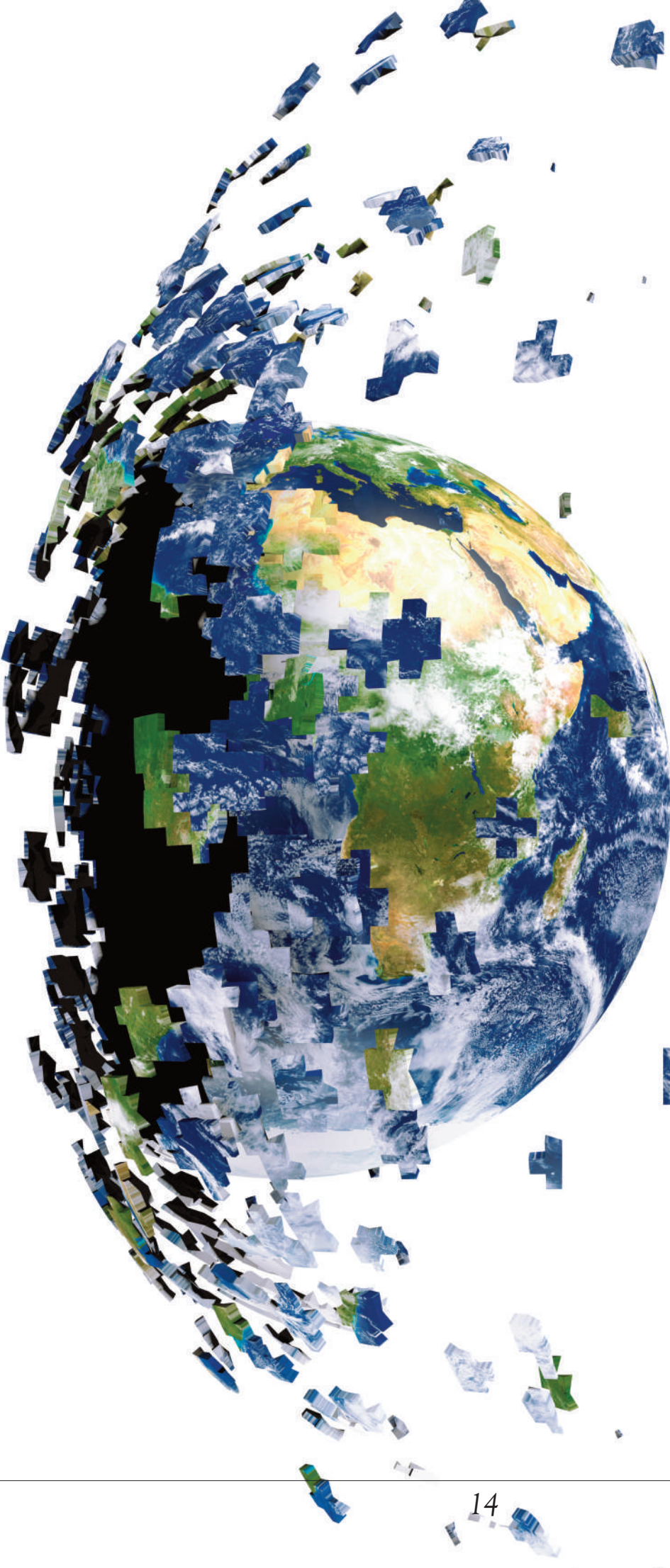
For technologists and compulsive users of digital opportunities, 2023 could give us an answer to three more questions: the future of Twitter following the ownership to Elon Musk; the future of the Metaverse, a new frontier or bubble about to burst; finally, what will happen to cryptocurrencies?

Fragile, fragmented, polarized. Densely populated. With new questions to be answered and old certainties that have crumbled, this is the world that awaits us.

We

LAPO PISTELLI

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THE NEO-LIBERAL AND GLOBALIZATION ERA HAS COME TO AN END, AND THE WORLD IS ENTERING A NEW INTERREGNUM, A TRANSITION WITH CONTOURS THAT ARE PARTLY CLEAR AND PARTLY BLURRED

THE END OF GLOBALIZATION

by Lorenzo Castellani

LAST YEAR MARKS THE START of a transition towards a different world rather than a decisive break with the past. Continuity and change become an integral part of a story that had already begun to accelerate after the financial crisis of 2008, a story that signaled the progressive decline of the old neoliberal, globalized system based on American unipolarity. While Obama and Trump raised customs barriers and established tight controls on foreign investments, the European Union floundered in the debt crisis and technology gap, and new authoritarianisms such as in Russia, Iran and above all China grew and expanded on the geopolitical chessboard. What had worked until 2008 started not to work anymore. Hence the state unrest

in North Africa, the resurgence of Islamic terrorism, the progressive U.S. withdrawal from Afghanistan, the seizure of Crimea by Russia in 2014 and the tensions over Hong Kong and Taiwan due to Chinese ambition. International relations changed and, with them, the economy and domestic politics.

THE RETURN OF THE STATE

After the political failure of the recipes for austerity in the period 2009-2013, reluctant state interventionism resurfaced, mostly monetary through quantitative easing, which was combined with Western protectionism towards China and sanctions against Russia, and finally new economic policies which



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led, albeit slowly, to an increase in investment stocks. The old model of globalization and monetary tightening bowed to new needs while the legacy era of Reagan and Thatcher, Clinton and Blair waned. However, politics accelerated and distorted the picture even more than the economy. Populism and nationalism were on the rise, the legitimacy of the establishment and its institutions were in grave danger and the shrewder rulers of the old order tried to move toward a new paradigm of greater governance of the economy and society in order to avoid the sudden collapse of the old system. A hybrid system took shape in which technocracies and old political classes implemented reforms that catered to a tired, impoverished electorate at-

tracted to nationalist and populist parties, and new entrepreneurs of demagogic politics came to power by moderating and merging with the old power structures. In this transformation and circulation of elites, in which there will be failures on both sides due to lack of realism, Western political systems will demonstrate their plasticity and flexibility to the detriment of an idealized vision of democratic representation. Meanwhile, international relations were on edge, with the United States increasingly inclined to simplify the system between the Western bloc, which it hegemonized, and an ever-narrower group of enemies, one that included China, Iran and Russia. The Atlantic bond was tightening again in a stronger and more deci-

sive way for all the allies both in the foreign projection of U.S. "follower states" and in the internal political balance. This was the debilitated and hardened scenario in a world on the brink of chaos into which the COVID-19 pandemic made its entrance in 2020. The pandemic concluded the economic paradigm shift with extended quantitative easing, massive government-induced fiscal stimuli, the explosion of public deficits and new public investments in renewable energy and technology. At the same time, the pandemic was an opportunity for the old centrist establishment to reinvent itself and curb the rise of new radical movements by highlighting their risks in a complex framework dominated by fear. This is the

case with Joe Biden's victory in America, the new convergence in the center in Germany, the re-election of Macron in France and the government of national unity led by Mario Draghi in Italy. Like all victories, these have generated a price to pay, one called inflation. An increase in the cost of living was driven in late 2020 by the logistics and energy sectors, inflation caused by conflicts involving raw materials and the huge post-pandemic fiscal stimuli of the U.S., China and the European Union.

THE RUSSIAN INVASION

However, the demon of politics ran deeper than economic



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Navi Mumbai, India. The growth of India, together with Turkey, is increasing the rift between the West and the rest of the world.



The Galata Bridge over the Bosphorus, Istanbul. The growth of certain powers, such as Turkey, reveals a world halfway between the short period of disorderly pluralism that lasted from 2008 to 2022 and a bipolar reorganization, with a clearer gap between the enlarged West and all the rest.

problems as another event considered unlikely until a few months earlier, Russia's invasion of Ukraine, ushered in 2022. Putin attempted an unsuccessful coup on the pro-Western Ukrainian government, but despite failing in this objective, the Russian autocrat turned the political-economic scenario of Western countries upside down. First, we had to face the war in foreign policy, had to make public opinion accept expensive sanctions against Russia and the supply of western weapons to Ukraine; second, we had to face the energy crisis both internally and in terms of supply. The change in relations with Russia caused a real shock in many of the leading groups of the large European countries, as it ended two decades of Ostpolitik. But Russia has also disrupted many other international stages, including the grain crisis in Africa, the return of immigration to Europe, the Chinese advances on Taiwan, the destabilization of the Iranian regime, the Turkish, Egyptian and Indian imperialist aims in neighboring territories and in general a public discourse more marked by security and state sovereignty. — One of the paradoxes of this evolution is the relationship between politics and the energy sector. After years of pushing for renewables by global politics and international finance with the consequent suspension of investments in fossil fuels, the war has revealed the full fragility of the green agenda in Western countries. Renewables, although growing, are insufficient to cover energy needs and moreover are composed of materials

almost entirely controlled by China. It is clear that for at least the next two or three decades the world will not be able to free itself from gas, oil and nuclear power and that many punitive aspects of green legislation, from the closure of gas, coal and nuclear plants to disincentives towards internal combustion engines, are unsustainable on an economic and social level in the emergency situation caused by the conflict in Ukraine. The war has brought back to reality that which the pandemic, and the rush to couple public spending and ideology by Western governments, had projected into the utopian superstructure. The ecological transition, considering the volume of investments required, is still possible, but in different, more mixed and less accelerated forms. Inflation has also made two other factors clear: the first is that an increasingly expansive monetary policy with interest rates at or close to zero is not sustainable for long periods, and an increasingly immaterial and digital economy cannot do without raw materials. Those who control them—such as Russia, China and the U.S.—enjoy both a political and an economic competitive advantage. These are two facts that even the financial markets have had to accept and consider. In this inflationary scenario central banks find themselves raising rates and reducing their balance sheets, while the economy slows down and states find themselves managing ever more cumbersome public debts and balance sheets and preoccupied by the fight against high energy prices.

TOWARDS A NEW PARADIGM

However, the economy must always be interpreted within a broader political and cultural framework. The neo-liberal and globalization era has come to an end, and the world is entering a new interregnum, a transition with contours that are partly clear and partly blurred. The return of the state to the economy and the resistance of sovereignty in some sectors such as technology and energy, the growth of protectionism and the breaking of global value chains, the unification of the enemies of the West in China, Russia and Iran and the growth of certain “middle world” powers such as Turkey and India deliver us a world halfway between the short period of disorderly pluralism that lasted from 2008 to 2022 and a world that seems to tend towards bipolar reordering, with a clearer split between the wider West and all the rest. It is in this new framework that the boundaries and possibilities for politics are changing. On energy, we will be able to act more outside the conventional and ideological schemes, with the effective reality of the situation prevailing over the green agenda, with the need for diversification within a new security and strategic paradigm of national interest. The same goes for technology and its components, from minerals to semiconductors, where a state of Hobbesian nature on a global level will force us to turn towards real politik in order not to fall behind or at least to limit the damage, even in a logic of supranational aggregation in Europe or cooperation between the two sides of the Atlantic. Similarly, sovereignty will manifest itself for strategic infrastructures, and nimby resistances and reluctance to invest in the long term by governments will have to be overcome in the name of emergency and the logic of state control. While state sovereignty is likely to expand on these fronts, it will be far more limited for everything else. International waltzes in which all nations dance with one another are no longer admissible, with profound repercussions on the internal politics of states. In fact, it must not be forgotten that in pluralistic chaos the sovereignty of states, the stronger ones in particular, tend to be absolute. In a bipolarized order things veer towards a system with limited sovereignty for all except the U.S. This means that the hegemonic power will be less inclined to tolerate lapses from new enemies, in both foreign and domestic policy. The metus hostilis—fear of the enemy as a unifying element—will once again become the glue of the Atlantic League, with the U.S. more influential than ever in limiting the sovereignty of European states. We have not yet reached this point of simplification, but we could get there soon, especially if the future peace in Ukraine is not solid and stable and if Xi's totalitarian strengthening drives him towards greater military aggression. We are currently in an intermediate state, one in which international relations seem to offer a sort of “rationalized pluralism.” No longer will there be the disorder injected by the new authoritarianisms on the global scene of a few years ago and no emer-



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gence of a single enemy with consequent bipolarity. Instead, there will be a reunited block facing a limited number of opponents, a scenario in which the hegemonic U.S. power acquires greater weight on the galaxy of pro-Atlantic “follower states” than in the recent past. The brevity of the transition that started in 2022 and its capacity to trigger new balances, ruptures, risks and instability will be demonstrated by future geopolitical developments.

We

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HAPPY 1973!

by Francesco Gattei

THE NEXT DECADE, LIKE THE 1970S, WILL BE A PERIOD OF POLITICAL TURBULENCE, CONFLICT AND INFLATION. THE REVISION OF THE GLOBALIZED MODEL THAT HAS ACCOMPANIED US FOR DECADES HAS DISRUPTED THE GEOPOLITICAL BALANCE. ECONOMIC BLOCKS AND ISLANDS WILL PROBABLY EMERGE, NOT UNLIKE THOSE SEEN 50 YEARS AGO

ON FEBRUARY 24, 2022, the hands of the clock of history moved back 50 years. Three threats, seemingly defeated during the 1980s and 1990s, have returned to the headlines: double-digit inflation, the energy crisis and the nuclear threat. For some decades, we have built an idealized world that, opening up to global trade, technological and digital success and a path of international collaboration, seemed destined to successfully face different challenges. Every now and then, we swerved off course (the twin towers, the Lehman crisis or the Arab





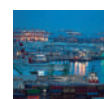
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People lining up outside a post office for petrol vouchers during the fuel crisis, United Kingdom, November 1973. The next decade, like the 1970s, will be a period of political turbulence, conflict and inflation.



2022 saw not only certain complexities of an economic nature, but also a geopolitical fracture. Since February this year, we have evidence that energy flows and strategic materials will require some rethinking. That dependence on China for 90 percent of rare-earth elements, Taiwan for 60 percent of processors, and Russia for 40 percent of gas is a potential time bomb. The photo shows a promenade in Beijing.



A liquefied natural gas terminal in the Port of Barcelona.

spring), but those three historical enemies seemed to have lost their teeth.

THE IDEALIZED WORLD

With regard to inflation, for example, we needed to create a slight feverish state, around 2 percent, after years of stagnant or worse downward trending prices. An exercise that had been almost impossible in Japan since 1990. And in Europe it seemed equally complicated. Dismantling Cold War institutions such as NATO seemed a natural consequence of a peaceful vision of international relations, one in which economic and commercial interests always prevailed over territorial interests and led to international disengagement by the U.S. As recently as 2019, Macron postulated the “brain death” of NATO, an institution without leadership and direction. And a new revolutionary era was taking shape for energy: to change in 30 years the mix created over the last 300! After the Paris Agreement in 2015, the prospects of a new world—increasingly electric, digital and green—now appeared imminent, an era in which fossil fuels were a noisy and polluting legacy of the first industrial revolutions, incompatible with the cleanliness and decorum of modern woke capitalism.

COVID-19, while catapulting us into a medieval reality of quarantines and spreaders, had paradoxically promoted this interpretation: locked down in our homes, we had tested the fea-

sibility of a zero-mile economy, with fully digital professional and personal relationships, united by a global and noble cause: the race for the vaccine. The return of nature (dolphins in Venice!), a more balanced and local life highlighted the possibility of resetting our economic model. We had the tools to do it and had completed the application test in just a few days. Obviously, this omitted the gigantic economic cost of the experience, which had led governments and central banks to print money as never before in history. A model in which many sectors were forced to close their doors pending a restart. An economy suffering infarction, with zero emissions because it is immobilized and kept alive by “helicopter money.”

A DIFFERENT RESET THAN EXPECTED

And when the gates of freedom reopened in 2021, we tested the real conditions of the reset: we had not entered the light, green, peaceful and digital world that had been painted, but instead had abruptly gone back to the 1970s. A fragmented world of conflict and inflation. Physical and extractive, full of queues (at airports and on beltways) and bottlenecks. The pre-COVID world seemed almost orderly in comparison, and in any case, the antithesis of the click economy that we had experienced with the pandemic.

The first evidence of the new paradigm emerged in the logistics chain, with the shortage of materials and goods that it seemed

natural to receive quickly. As we dreamed of drone deliveries, we discovered that the drifting Ever Given could cut off the Suez Canal. Delays in construction sites, especially in Asia grappling with extreme lockdowns, lack of personnel and delays in production of materials and raw materials are the conditions of the “everything shortage” of our times.

The new world will bring many interconnected phenomena of structural transformation: the need for nearshoring of economic activities to reduce delivery risks will result in a permanent increase in the cost of goods and services with the reduced availability of products “Made in China.” And it will bring back to us western consumers certain high-emission factories that we had conveniently moved to the east. Goodbye to the “less inflation and fewer emissions” recipe of globalization-oriented policies.

To this purely economic dynamic, 2022 unexpectedly added the geopolitical fracture. For years we had assumed that industrial activities could be placed in the best way possible without other negative factors. In the West, few light industries and lots of services; in the rest of the world, the heaviest extraction and transformation. Since February this year, we have evidence that energy flows and strategic materials such as chips will require some rethinking. That dependence on China for 90 percent of rare earths or Taiwan for 60 percent of processors and Russia for 40 percent of gas are potential time bombs. These relocations or the identification of new supplies will also give rise to important and structural inflationary pressures.

THE ENERGY STANDSTILL

And finally, even energy—the subject most neglected in recent years—will emerge transformed by current events. Trapped in an anti-fossil narrative and not anti-carbon as it should be, we have deliberately limited the transformation options to a few sources (renewable, no nuclear) and uses (focus on high electrification), and now we find ourselves trapped in a corner. On the one hand we need to produce more oil and gas (and use more coal, at least in the winter) to replace the huge volumes of missing Russian hydrocarbons; but we won’t accept that these activities can last too long because they are at odds with the anti-fossil narrative. It follows that today we remain at a standstill, with price increases that are not reflected in greater investments and greater oil and gas production.

At the same time, the option “produce more renewables to escape the crisis” (by nature already insufficient to cover total industrial and winter consumption) would direct supplies towards growing dependence on China. And it would also suffer the negative effects of the increases in the prices of raw materials and fossil fuels that are required to produce the steel, plastics and glass needed for the same wind turbines or solar panels.

In conclusion, 2023 will confirm the continuation of the new paradigm. An expected reset, but very different from the one



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conceived. The next decade, like the 1970s, will be a period of political turbulence, conflict and inflation. The revision of the globalized model that has accompanied us for decades has knocked the geopolitical balance. Economic blocks and islands will probably emerge, not unlike those seen 50 years ago. And when it comes to energy, we will pay for the schizophrenia of a narrative that is too beautiful to abandon and its painful impracticability. In the absence of a rapid change of course, the energy shock that is dominating gas could soon involve other essential sources.

Happy New Year, Happy 1973!

we

FRANCESCO GATTEI

He is Chief Financial Officer at Eni. Previously he was the Americas Upstream Director of Eni, Vice President of Strategic Options & Investor Relations at Eni and, before that, in charge of the E&P portfolio at Eni.

CHINA OF XI'S THIRD TERM

by Anders Hove



FOR BEIJING COAL REPRESENTS A SHORT-TERM SOLUTION TO ADDRESS THE ENORMOUS CHALLENGE OF ENERGY SECURITY, BUT LOW-CARBON TECHNOLOGIES REMAIN THE CENTRAL PILLAR OF CHINA'S INDUSTRIAL STRATEGY

AS GLOBAL CLIMATE DISCUSSIONS CONTINUE after the Sharm El Sheik COP27, and the world confronts a major world energy crisis that hits each country in a different way, many are worried China's interest in climate issues has waned. While China has major energy security challenges, and coal has risen as a short-term solution, technology progress and rapid industrial scale-up in renewables and electric vehicles have new momentum. As a central pillar of China's industrial strategy, low carbon technology will continue to transform the nation's economy in a cleaner direction—ultimately contributing to solving the very energy security issues that are currently front and center.

At the just-completed 20th Party Congress, President Xi Jinping won an unprecedented but expected third term and ensured the top ranks of the Party will be filled with loyalists. The text of his speech reflected a changed worldview, highlighting the risks to China of global instability and new challenges and dangers to China's economy. After COP27 in Egypt, climate watchers have noted that whereas the Paris climate agreement came about due to a partnership between China and the U.S., today that relationship is at a new low, with China cutting climate cooperation in retaliation for the perceived slight of U.S. House Speaker Nancy Pelosi's visit to Taiwan this past summer. On the global energy scene, China is heavily dependent on en-

ergy imports for oil and gas. Domestically, in a little more than a year, China has twice experienced serious power outages, once due to quirks in the local energy market design, and then this summer due to climate change-related drought and heat waves. Coal is widely seen as a short-term answer to such issues. According to language used by top leaders, as a domestically produced fuel, coal can serve as the "ballast stone" to keep China's economic ship stable in turbulent seas.

Putting it all together, do security concerns abroad and new coal at home spell the end, or at least a pause, in China's ambitious plans to reach carbon neutrality? Notably, climate and ecological protection were among the highlights of the 20th Party Congress, and for good reason: China rightly views these fields as areas where the state has played a successful part in guiding a major technological transformation with benefits for China's environment and for the whole world.

THE RACE OF RENEWABLES

On renewable energy, China has long been the largest builder of hydropower, wind power, and solar photovoltaic (PV) power. Even in the face of concerns about their variability, China's build-out of wind and solar is accelerating. Last year, China added well over 100 GW of wind and solar, far more than any other country. Indeed, China accounted for 40 percent of new solar added globally in 2021.

The country's stated 2030 target for wind and solar sits at a combined 1,200 GW, an astonishing figure that far surpasses the total electric generating capacity of Europe today. Yet there is little doubt China will easily blow through this target. Whereas China had over 500 GW of wind and solar at the end of 2020, its provincial five-year plans for wind and solar would add over 850 GW by 2025. If that provincial wind and solar build-out continues, China would have over 2,000 GW of wind and solar combined by 2030.

While these two clean energy sources account for just over 12 percent of electricity produced in 2021, a near quadrupling of their share would put China ahead of what it needs to be on track with models of mid-century carbon neutrality from Tsinghua University—at least as regards transforming the power sector.

NATIONAL INDUSTRIAL TRANSFORMATION

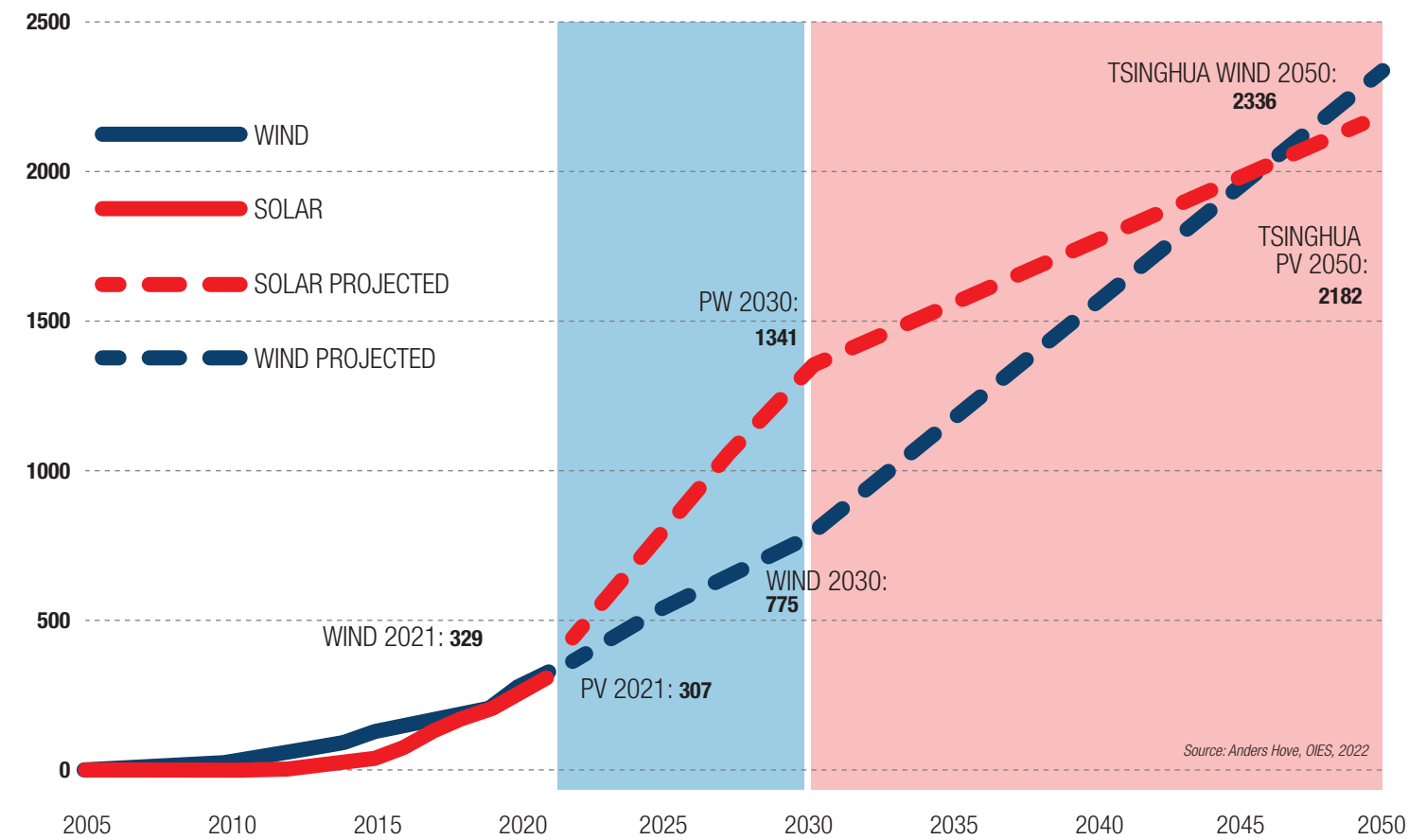
The transportation sector is a similar story. China has the world's largest car market and is highly dependent on imported oil. China is now the world's largest oil importing country, with imports accounting for over 75 percent of consumption.

Yet China is also adopting electric vehicles at an unprecedented pace. In 2020, China already led the world in terms of EV sales, with over 1 million annual sales for three years running. Yet EVs accounted for just 5 percent of auto sales that year. Last year, the share shot up to 15 percent. This year, de-

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CHINESE WIND AND SOLAR ENERGY CAPACITY (GW)

At the end of 2021, China produced more than 600 GW of wind and solar energy. Advancing at this pace, by 2030, it will have derived over 2,000 GW of energy from these sources and will be on track to achieve the carbon neutrality targets set for 2050 by Tsinghua University.



spite Covid-related supply chain disruptions, the EV share will likely top 25 percent, with over 7 million EV sales, accounting for nearly two-thirds of the global market for electric vehicles. On a monthly basis, EVs accounted for over 30 percent of passenger vehicle sales in September.

What accounts for this stunning growth? Domestic industrial transformation is the key. Chinese carmakers, including start-ups, have proved able to rapidly scale up EV and battery manufacturing capacity. While subsidies and central government goals have helped—indeed, China just extended EV subsidies to the end of 2023—these are playing less of a role. Instead, domestic manufacturers are eager to bring attractive EVs to market to meet the desires of a rapidly evolving urban car-buying public that prefers the latest tech-heavy domestic offerings to more stodgy imports. Carmakers are answering that call with more mid-market EVs such as those from Xpeng and BYD. Whereas China had previously shown a “barbell pattern” of high-end and low-end EVs, the market is now seeing options that can attract car buyers interested in a regular, well-priced car. Indeed, several of these options are now being exported to Europe and other markets.

China now has well over 10 million EVs on the road, still a tiny fraction of the country’s vehicle fleet, and passenger vehicles account for only around a fourth of China’s oil consumption. Today’s China EV story will produce long-term benefits

that take time to build up: The manufacturing scale-up of EVs and batteries in China has implications for the world’s adoption of EVs in every field, such as trucks and buses. In a decade, China’s car and truck fleet may be well on their way to full electrification, and used Chinese vehicles will be plying the roads throughout developing Asia. Put simply, the hockey-stick growth of EV manufacturing in China will likely contribute to a global EV revolution.

To be sure, renewables and EVs are just a part of addressing the climate change challenge. Decarbonizing China’s vast industrial sector, such as steel, cement, glass or petrochemicals, will require changes that are difficult to envision today. Integrating renewable energy will require changes to markets that imply institutional adjustments rather than just manufacturing scale-up and investment. New coal plants to address current power shortages will remain in operation for decades, potentially requiring costly retrofits for carbon capture, and nobody knows how these costs will be paid or whether the technology will be fully developed in time. Lastly, adoption of clean energy will require minerals and materials that are currently in short supply and could become a major bottleneck globally.

THE CHINESE EXAMPLE

For climate change, China’s scale-up of manufacturing, and its commitment to low-carbon technology as an industrial devel-



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opment strategy, have major benefits for China and the world. Clean energy technology will eventually transform China’s power and transportation sectors, help improve urban air quality, reduce carbon emissions and eventually decrease the country’s dependence on vulnerable imports of oil and gas. Even in a world where other countries worry about China’s potential dominance of new energy technologies, China’s example shows that these technologies are economically viable and realistic for developing countries and advanced economies alike—and that they can scale up more quickly than was imagined even a few years ago.

On the global stage as well, events at COP27 have suggested China continues to view its climate policies as a part of its diplomatic outreach, particularly to the developing world. In a surprise announcement, lead China climate negotiator Xie Zhenhua announced that China would contribute to a loss and damage fund for poorer countries affected by climate change, even though it doesn’t have to. And China announced a new action plan to control methane, which was a part of earlier U.S.-China cooperation that China officially suspended this summer.

What should we conclude about China’s commitment to climate progress as 2022 draws to a close? First, while energy security concerns are paramount, climate change remains a top priority. Second, because climate policy aligns with important

industrial and technology development goals, this is unlikely to change, even if new coal plants continue to go up. Third, China will remain active on the diplomatic front, whatever the temperature of U.S.-China relations. Thus, in the wake of the 20th Party Congress, there is room for cautious optimism on China’s climate commitments.

We

ANDERS HOVE

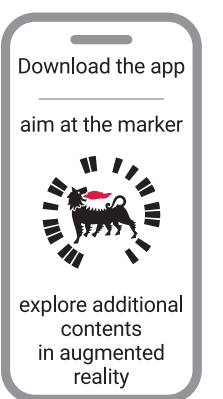
He joined the OIES China Energy Research Programme in October 2022. Previously, he was Project Director for the Sino-German Energy Transition project at GlZ, a German federal enterprise providing services in the field of international development cooperation. He worked in Beijing from 2010-2022.



Wangjing SOHO, Beijing. The Wangjing SOHO is a multipurpose complex consisting of three towers, 115, 127 and 200 meters tall, designed as three interweaving mountains. The project was designed by Zaha Hadid Architects.

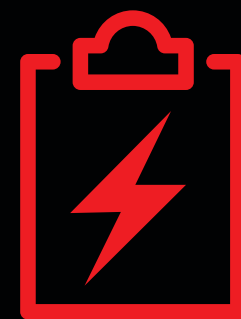


Festivities for Chinese New Year. Climate change is a priority for China and, in the wake of the 20th Party Congress, its climate policy is in line with important industrial and technological development targets.





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Successes

by Rita Lofano

BIDEN

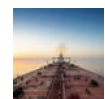
& challenges

2023 WILL BE THE YEAR OF AMERICAN LNG: THE U.S. WILL REMAIN EUROPE'S LEADING SUPPLIER, SELLING AT PRICES THAT HAVE PRACTICALLY DOUBLED. BUT FOR THE WHITE HOUSE, THERE WILL BE PROBLEMS BOTH IN THE ECONOMIC AND POLITICAL FIELDS. AND, IN THE BACKGROUND, THE WAR IN UKRAINE CONTINUES

"AND THE WINNER IS..." Joe Biden, who wins the Oscar of Oil for "Best Deal of the Year." The U.S. president's decision to put 180 million barrels of oil from Strategic Reserves on the market from March to today to combat soaring energy prices after the Russian invasion of Ukraine has reportedly yielded the U.S. administration USD 17.3 billion. It sold while prices were high: WTI peaked at USD 124 a barrel in March before falling back to around USD 73 in December, at an average price of USD 96.25. Now, in order to refill the Strategic Reserves (which have fallen to around 382 million barrels), Biden intends to buy when prices are traded "steadily" at USD 70. Even if oil were paid USD 72 a barrel (at the top of the range indicated) the



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From March to date, the U.S. president has placed 180 million barrels of petrol from strategic reserves on the market, collecting more than USD 17 billion. The photo shows an American oil tanker.

USD 17.3 billion collected by the administration would make it possible to buy back 240 million barrels, a third more.

THE OSCAR OF GAS

And in 2023? Biden is aiming for another Oscar: the gas award. This year, American LNG exports reached a record 3,500 billion cubic feet Energy Information Administration (EIA). In the first half of 2022, the U.S. became the world's leading exporter of liquefied natural gas, overtaking Qatar and Australia, on the back of demand from Europe. In the first 11 months of

the year, shipments of American LNG to Europe increased by 137 percent compared to 2021 (Kpler), equal to more than half of total imports in the region, where stocks depleted this year due to the lack of supplies from Russia will need to be fed.

The U.S. can count on a greater availability of LNG to sell on the spot market compared to its main competitors in the sector, Qatar and Australia. The U.S. is also much more competitive in terms of transport. One example above all: the distance from Cove Point, in Maryland, to the port of Brunsbüttel in Germany, is practically half the distance a cargo from Qatar has to

of crude oil extracted in the United States reached a record 3.4 million barrels per day (MMb/d) and exports of refined products such as gasoline and diesel totaled another 3 MMb/d. Conversely, in November, net imports of crude oil reached their lowest level since 2001 at 1.1 MMb/d against, for example, imports of over 7 MMb/d five years ago. But America's shale fields are aging, and production growth has slowed. Extraction forecasts for next year estimate 12.34 MMb/d, provided that prices remain high enough to encourage investment. Domestic oil demand alone in 2023 is estimated to increase by 0.7 percent to 20.51 MMb/d.

Terminal operators are rushing to increase capacity, including adapting terminals to the giant carriers that can hold more than 2 million barrels of oil. The CEO of America's largest crude export facility, Sean Strawbridge (at Port of Corpus Christi, Texas), sees "a wonderful opportunity" for American producers. Strawbridge estimates for this, the fifth largest port in the U.S. and the deepest in the Gulf of Mexico, an increase in exports of 100,000 barrels per day, following the record 2.2 million shipments reached in October.

A DIFFICULT YEAR FOR BIDEN

In the command room the motto has changed to "Houston, we do NOT have a problem." In reality, the complications office is always open. Just stop by Capitol Hill. A new legislature begins in January, the Republicans return to the helm in the House and for Biden it will not be a walk in the park, especially if he confirms that he wants to try again for the White House in 2024. Another round, another run. It's one long election campaign, and it remains to be seen whether the lucky star will stick by him as it did in the midterm vote.

There is a war that will reach its first birthday in February, there is inflation that has not yet been tamed and a looming recession. There is the unknown factor of China, which has lifted its zero-Covid policy but expects a million deaths. And again, there is China which conducts military exercises with Russia and continues to monitor Taiwan's air and naval space. The script is becoming clear. The job of director remains with Biden, but to win the golden statue, he needs a perfect ten: he needs America to keep up its reputation.

we

RITA LOFANO

Journalist, for over twenty years she has worked at the AGI news agency, where she is now deputy director. She has been a U.S. correspondent since 2008.

travel. Only Algeria is closer to Europe, but it operates above all with long-term contracts. This means that the U.S. will continue to be Europe's leading LNG supplier in 2023, selling at prices that have practically doubled, after the record USD 35 billion collected through September 2022, up from USD 8.3 billion in the same period in 2021 (EIA).

THE EXPORT OF CRUDE OIL

While liquefied gas is the spearhead of American energy, the U.S. is on track to become a net exporter of oil in 2023. Exports



DISPUTED WATERS

The demarcation line of the maritime borders between Lebanon and Israel, recognized by the agreement of October 11, 2022, is largely based on Line 23. Israel has the exclusive right to develop the Karish gas field; Lebanon, in exchange, is authorized to grant licenses to develop the Kana field, dividing the revenue from its exploitation with Israel.



THE ISRAEL-LEB ANON DEAL

by Moritz Rau

THE MARITIME BORDERS AGREEMENT, THAT CAME AFTER YEARS OF INDIRECT TALKS, COULD MARK A NEW CHAPTER FOR ENERGY COOPERATION IN THE EASTERN MEDITERRANEAN AND BE A MODEL FOR THE UNRESOLVED MARITIME BOUNDARY ISSUES BETWEEN TURKEY, GREECE AND CYPRUS

ON OCTOBER 11, 2022, Israeli Prime Minister Yair Lapid announced the conclusion of a “historic agreement” with neighboring Lebanon on the demarcation of common maritime borders. The deal came after years of indirect talks mediated by the U.S. and marks a milestone in relations between the two countries, which have officially been at war since Israel’s founding in 1948. It will reduce tensions between the two countries and allow offshore natural gas exploration in formerly disputed areas. Under the terms of the agreement, Israel receives the exclusive right to develop the Karish gas field. In return, Lebanon is authorised to grant the licence for the development of the Qana field. Since this gas field partially stretches beyond the

Lebanese EEZ into the Israeli zone, Israel is to share in the revenues under a supplementary agreement with Total, the operating French company. In case of further deposits discovered in the future that extend across both maritime borders, the two parties intend, with the help of the U.S., to come to an agreement on the sharing of these revenues as well.

THE QUEST FOR REGIONAL STABILITY

Bordering the Middle East, one of the world’s most erratic and unpredictable regions, from 2010 onwards, offshore natural gas finds in the Eastern Mediterranean have received much public attention. Joint ventures on the development of natural gas

fields have been linked to economic win-win effects and been presented as a new platform for cooperation and a potential “game-changer” for the establishment of a new security architecture in the Eastern Mediterranean. Yet, energy has prompted little collaboration between littoral states until today, while it has exacerbated already existing maritime boundary conflicts, not only between Israel and Lebanon, but also between Turkey on the one hand and Greece and Cyprus on the other. Turkey’s gas explorations inside the Exclusive Economic Zone (EEZ) of the Republic of Cyprus and near the Greek islands of Kastellorizo and Crete escalated the situation in recent years. In Cyprus the dispute over offshore gas resources turned into an-

other obstacle to progress in the UN-led peace process. Following Turkey's research activities off the coast of the Greek island Kastellorizo in summer 2020, Greece and Turkey came close to a military confrontation.

In these conflicts the EU stands by its two member states, Greece and Cyprus. Nevertheless, regional stability in South-Eastern Europe, the Eastern Mediterranean and the Middle East can only be achieved in cooperation with Turkey, one of the largest military powers in the region. It therefore remains in the EU's interest to cooperate with Turkey. Beyond energy, this also remains an important approach to the issues of migration, climate change and security policy in the context of Turkey's NATO membership. Peace and stability are basic prerequisites without which neither the use of gas reserves nor the expansion of renewable energies in the region can be accelerated. It is therefore important to think about how cooperation in the energy sector can have a de-escalating and confidence-building effect.

A MODEL FOR THE REGION?

This raises the question whether the U.S.-brokered agreement on the delimitation of maritime boundaries between Israel and Lebanon can be a model for the unresolved maritime boundary issues between Turkey, Greece and Cyprus. In a press statement, the Turkish Foreign Ministry welcomed the agreement and called for the disputes between the Cypriot communities over the distribution of the profits of possible gas export revenues to be settled in a similar format. However, this would only resolve one of several interlinked conflicts surrounding the Cypriot EEZ Turkey calls into question the rights of islands to establish an EEZ and asserts a continental shelf that expands far into that of the Republic of Cyprus. Furthermore, Turkey is the only UN-member state that does not recognise the Republic of Cyprus as an official state and denies them the right to represent the island in international negotiations. The question arises as to who could mediate here. Theoretically, the U.S., as an international power, would be the first choice. A joint initiative of large EU states active in the region would also be conceivable. For example, Germany, France and Italy.

An agreement between the parties to the conflict on the course of the maritime borders or at least on the extraction and utilization rights of certain gas fields would offer possibilities for alternative energy transport routes including Turkey. Israeli and possibly Cypriot gas deposits could also be exported to Turkey via an underwater pipeline running through Cyprus' EEZ. This would open the prospect of large quantities of alternative natural gas deliveries to Turkey, which would reduce its dependence on Russian imports. With the exploitation of the Cypriot fields, the island of Cyprus could also be supplied with gas and at the same time get access to an international consumer market.



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The prerequisite for this would be the willingness of all parties to the conflict to compromise and cooperate.

However, under current political circumstances, marked by the upcoming national elections in Greece, Turkey and Cyprus in 2023, a course of rapprochement hardly seems realistic in the coming months. Rather, it is to be feared that the election campaigns will emphasize national identities in distinction to neighboring states and exploit them to mobilize a patriotically oriented electorate. It remains to be seen whether a window of opportunity will emerge after the elections for diplomatic initiatives to transform converging interests into cooperative projects.

gas demand, Turkey faces global competition and is challenged by higher prices for supplies from, for instance, the U.S., Egypt and Qatar. Due to population growth and the rising energy demand of the economy, gas consumption in Turkey is expected to continue to grow in the years to come. That Turkey signed the Paris Agreement in October 2021 also plays a role here. To seriously support the goals of the agreement, Turkey needs to develop a coal phase-out strategy, in which natural gas could play an important role. It is in Turkey's interest to diversify its natural gas imports in the future in order to ensure that Turkey's increasing demand for natural gas does not lead to greater dependence on Russia. Trade cooperation with Israel and Cyprus could help solve this problem.

A PRAGMATIC APPROACH

Since unresolved exclusive economic zone conflicts have been important obstacles to offshore natural gas research and development in the Eastern Mediterranean in recent years, energy policy considerations alone will not suffice. New formats of regional energy cooperation should provide linkages for diplomatic initiatives and conflict mediation. Background negotiations might help determine whether joint production of Israeli and Cypriot gas deposits for the Turkish sales market is conceivable. It would make sense to draw lessons from the maritime border agreement between Israel and Lebanon and to discuss with Turkey, Greece and Cyprus how a similar approach with pragmatic views and a good portion of beyond the box thinking could be implemented. An essential aspect in this regard is to examine which actor might be appropriate for indirect negotiations. Theoretically, the U.S. as an international power and with its regional expertise would be the first choice. However, a joint initiative of large EU states with active involvement in the region would also be thinkable. For example, Germany, France, and Italy.

we

REASONS FOR TURKEY TO COOPERATE

The fact that the Turkish economy has been suffering from significant energy price hikes since the beginning of the Russian war against Ukraine could increase Turkey's readiness for cooperative ventures in the Eastern Mediterranean's Energy sector. Turkish-Russian energy relations are intact and Turkey benefits from not supporting Western sanctions policies. A large part of Turkey's gas consumption continues to be covered by supplies from Russia, and in 2021, the domestic share of imports from Russia was 44.9 percent. Oil imports from Russia have even doubled recently. However, in the case of liquefied natural gas imports, which now represent around 42.5 percent of natural

MORITZ RAU

Since September 2021 Moritz Rau has been a researcher in the Global Issues Research Group of SWP (German Institute for Foreign Affairs). He deals with energy affairs and regional cooperation in the Eastern Mediterranean. His work focuses on Cyprus, Greece, and Turkey.

An Israeli naval ship is moored in Mediterranean waters off the Israeli border crossing at Rosh Hanikra, known in Lebanon as Ras al-Naqura, on the border between the two countries. In October, Israeli Prime Minister Yair Lapid announced the signing of an "historic agreement" on the delimitation of the maritime borders with Lebanon.

Tourists pose for a photo near a sign at the Rosh Hanikra tourist attraction on the Israeli side of the border with Lebanon.



Global flows

a new landscape

by Giacomo Luciani

ENERGY TRANSITIONS WILL MOST LIKELY LEAD TO A REDUCTION IN INTERNATIONAL ENERGY TRADE AND AN INCREASE IN THE IMPORTANCE OF TRADE IN ENERGY-INTENSIVE PRODUCTS

THE ENERGY TRANSITIONS that, in the coming years, must be achieved all over the world will lead to a radical change in international trade in energy-related products. The Paris International Energy Agency has quantified this evolution in two of its scenarios (see graph on p. 39).

Today, most energy trade consists of oil and petroleum products, and for decades oil has been the main globally traded commodity. Its weight on total international trade varies with the price; in 2019, oil alone represented 9.5 percent. Methane and coal follow at a significant distance, with a share of global trade of less than 2 percent and 1 percent respectively. International exchanges of electricity are minimal on a global level, and national networks are only interconnected and synchronized within the European Union where member countries exchange considerable quantities of electricity, limited, on average, to 15 percent of production.

With the decline in the use of fossil fuels, whether slow or rapid, this level of trade is destined to change. In general, the energy sector will play a less important role in international

trade, mainly because electricity is difficult to transport over great distances and fossil fuels are set to lose importance in energy trade as a whole.

THE EVOLUTION OF OIL AND GAS TRADING

This outlook raises many questions. The first concerns the endgame for oil and gas trading. According to a current view, one accepted in the International Energy Association (IEA) reports, the production of oil and gas is destined to be increasingly concentrated in countries with substantial reserves and low production costs. This belief is based on the expectation that demand for oil and gas will decline faster than supply, that prices would tend to be low and that investments in research and development of new reserves would be discouraged. This would lead to a growing dependence by industrial countries, including China and India, on imports from OPEC countries or Russia.

However, recent years prove that things can go very differently. Investments by major international oil companies have been



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discouraged by the belief that the sector is now in decline amid growing concern about climate change. As a result, supply has decreased faster than demand, which, rather than decreasing, continues to increase, and prices have tended to rise.

The fact is that, even assuming that demand reaches a peak before 2030 and then begins to slowly decline, oil and gas will initially be eliminated from those uses for which they are more easily replaceable, in particular by electricity. The uses for which substitution is most difficult (mobility, heavy land and sea transport, aviation and petrochemicals) will continue the longest and are essential for the economic life of any country. This means that, for a long time, the reduction in the demand for oil and gas will not be reflected in a similar reduction in the strategic importance of the remaining imports. The problem of security of supplies will not diminish in importance, indeed it could become even more serious, because the system will inevitably lose flexibility.

Therefore, the hypothesis that it is acceptable to depend on an ever-decreasing number of suppliers—whose willingness to comply with international standards and the peaceful resolution of disputes is, to say the least, dubious—is very problematic. This means that political and security considerations will lead to the encouragement of investments in the exploration and development of new resources, provided that they are in countries other than the major exporters, and preferably

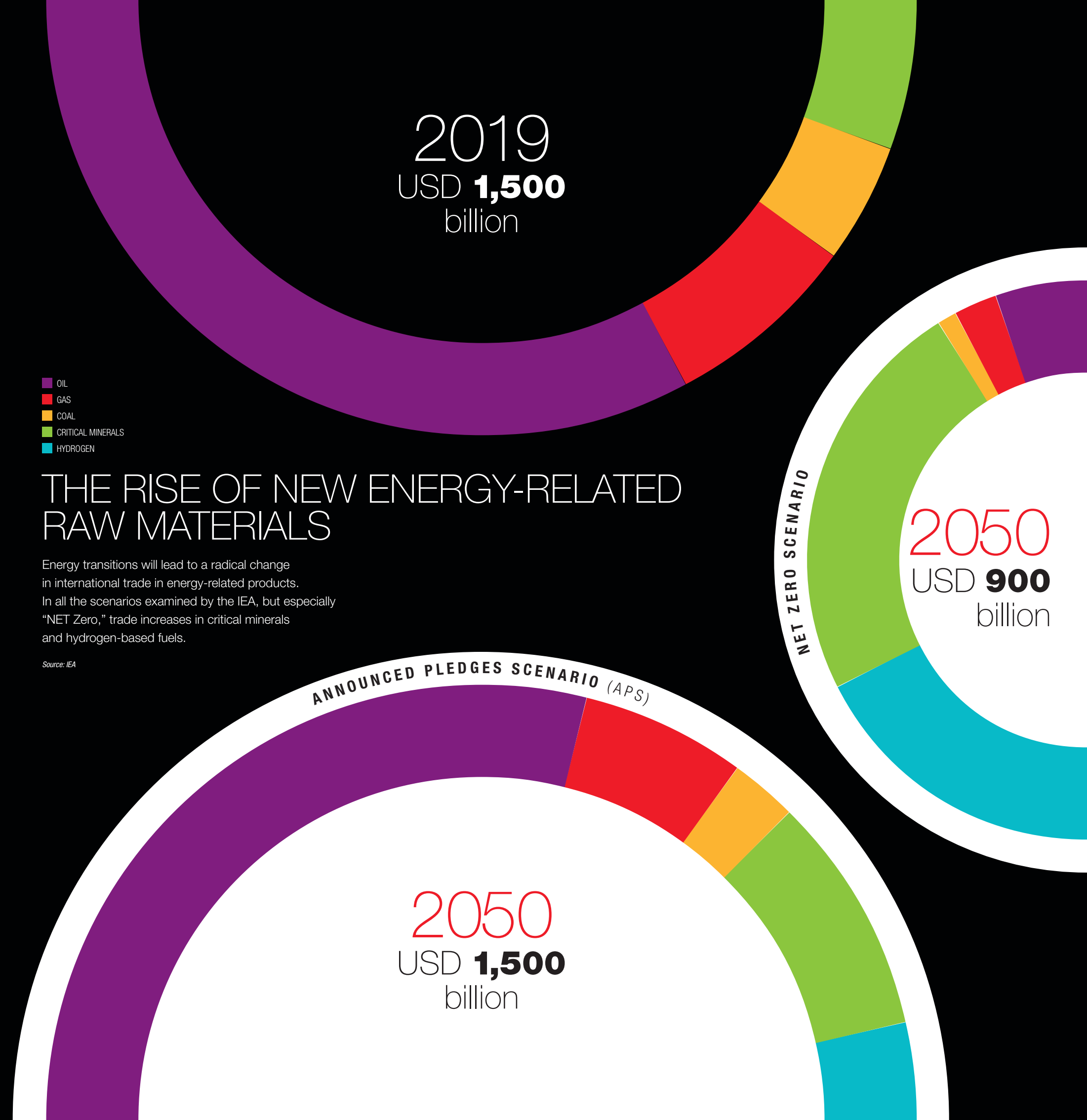
politically aligned with respect for international standards and human rights. These investments may have to be protected from competition by the main producers, precisely to avoid excessive dependence on them. As a result, the international oil and gas market could be segmented, with different prices depending on the political assessment of the country of origin. The cap on the price of Russian oil that the G7 will seek to impose from December 2022 can be seen as a general test in this direction.

TRADE IN OIL PRODUCTS AND THE FUTURE OF REFINING

The progressive reduction in the demand for oil will also inevitably have consequences at an industrial level. It seems inevitable that there will be an increase in the trend—already present in Europe for decades—towards a reduction in refining capacity, therefore a greater dependence on imports of products rather than crude oil. However, not all products satisfy every component of demand: petrol cannot be used in place of diesel, or kerosene for aviation, naphtha for petrochemicals and so on. But a barrel of oil of a given quality processed in a refinery with specific characteristics does produce a combination of products that cannot easily be changed. Therefore, if the demand for a particular product declines faster than the demand for other products, refineries may find it difficult to adjust the composition of production to that of demand. This problem already exists



Dock for loading and unloading oil tankers from the refinery for sea transportation, Thailand. The progressive reduction in the demand for oil will also inevitably have consequences at an industrial level. It seems inevitable that there will be an increase in the trend—already present in Europe for decades—towards a reduction in refining capacity, and therefore a greater dependence on imports of oil products rather than crude oil.





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today with particular reference to diesel, for which European refining capacity is insufficient to cover demand, and which up to now has been imported from Russia in very large quantities. Downstream from refining, increasing problems are likely to arise for the petrochemical industry, which in Europe relies mainly on naphtha cracking. If European refineries no longer produce sufficient quantities of naphtha, it is impossible for basic petrochemicals to survive on imported naphtha; the entire sector will be transferred to producing countries that are integrating downstream in refining and petrochemicals (Saudi Arabia and United Arab Emirates) or in importing countries that have invested in recent years in gigantic new refineries

(India and China). It is therefore to be expected that international trade will involve decreasing quantities of crude oil and an increasing proportion of petroleum products or petrochemicals.

THE IMPACT OF ELECTRIFICATION

As already mentioned, international trade in electricity is currently almost insignificant, except in the European Union. In the rest of the world, almost all countries are very reluctant to accept electricity interconnections with their neighbors, mainly for fear that this will turn into ties of dependency with security implications. Grids are often not well interconnected even within states: to cite a macroscopic example, in the U.S., Texas has—deliber-

instead of passive consumers supplied by producers through the grid. In this vision, the grid plays a role of simple support, to alleviate the fact that solar and wind are non-dispatchable sources whose on-demand availability cannot be guaranteed. But there could also be local tools to help solve this problem, such as batteries or demand flexibility.

At the other extreme, there are the proponents of international interconnections and the construction of large, long-distance DC transmission lines to connect particularly abundant sources of green electricity (offshore wind in the North Sea, solar in the Sahara, large hydroelectric plants in Central Asia or Sub-Saharan Africa) to consumption in densely populated regions, such as eastern China or Europe. This second vision would evidently lead to important international exchanges of electricity, but it is very difficult to implement, both due to the obvious geopolitical obstacles and the high costs and returns that are uncertain and in any case very deferred over time.

THE PROSPECT OF AN INTERNATIONAL HYDROGEN MARKET

Much excitement surrounds the possibility that green electricity could be exported internationally in the form of hydrogen or its derivatives, such as ammonia or methanol. The reasoning is similar to that applied to large electricity interconnections: renewable sources are not equally distributed in the world; on the contrary, there are regions where they are much more abundant where the population is scarce and the local demand for electricity is limited. Therefore, we could produce low-cost green electricity in these regions and use it to produce hydrogen from water by means of electrolysis. The countries with the greatest hope for hydrogen as a solution for the decarbonization of their heavy industry—such as Germany or Japan—plan to rapidly increase their imports of hydrogen from distant sources, such as Australia, Chile or Saudi Arabia.

This enthusiasm is reflected in the official documents and reports by the IEA, and is shown clearly in the graph on p. 39, where, in the Net Zero scenario at 2050, hydrogen accounts for 35 percent of international trade in energy products. However, on closer inspection, it is evident that the prospects are not as rosy as they may appear at first glance. In fact, most of the countries that could become major hydrogen exporters are still heavily dependent on electricity produced from fossil fuels, so it is not very logical to consider hydrogen produced from renewable energy “green” when fossil sources continue to meet the domestic demand of the country. We should start thinking about producing and exporting hydrogen only after the production of electricity for internal consumption has been completely decarbonized. Secondly, the hydrogen produced and exported would be relatively expensive, and this would prevent the renewable electricity from being sold at high prices. Sometimes, we read that



An electrical generator at the CenterPoint Energy facility, Texas. Currently, international trade in electricity is almost insignificant. Grids are often not well interconnected even within states. To cite a macroscopic example, in the United States, Texas deliberately has no electrical interconnection with other states, and thus escapes the regulation of federal authorities. In this case, it is a sort of declaration of electricity independence.

Australia or Chile could become the “Saudi Arabia of hydrogen,” but while Saudi Arabia sells crude oil at about eight times its cost of production, in the case of hydrogen the margin would be slim if not even negative: with hydrogen, you don't get rich. Finally, why export hydrogen, ammonia or methanol rather than transforming these commodities locally into products with higher added value? If Germany were to import hydrogen in the form of ammonia, it would make no sense to convert ammonia back into hydrogen, because most of the hydrogen produced today from fossil sources is used to produce ammonia. So why import ammonia to transform it into fertilizers or explosives in Germany when this transformation could take place at the source? These perplexities lead us to believe that it is unlikely that international trade in hydrogen will be capable of developing at the pace implied in the IEA scenario.

TRADE IN METALS AND ELECTRICAL EQUIPMENT

The prospect of rapid electrification of energy uses will certainly also have important implications for the production and trade of metals and electrical equipment. However, there is also great uncertainty surrounding this issue: we know that it will require huge investments to put into production new mines for copper, nickel, lithium, cobalt, manganese, silver, bauxite and rare metals, but we cannot be certain that it is possible to increase production to the rate assumed necessary by the electrification scenarios, nor in which countries these mines will be.



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It would be difficult to extrapolate the future from the current situation, one characterized by China's strong dominance in the refining of metals and the production of basic electrical equipment such as batteries or solar panels, indeed in almost the entire, vast range of electrical machinery. This situation will certainly have to be corrected to prevent it from becoming an element of economic and security risk. The Inflation Reduction Act recently passed in the U.S. is a decisive step toward revitalizing U.S. manufacturing, but it has been criticized as protectionist by European countries. These countries, in turn, are competing to attract investment in giant factories for the production of batteries, while catching up on solar panels and electric motors seems a more difficult challenge. It will not be easy to achieve a coordinated and cooperative effort to develop metal manufacturing and equipment as an alternative to China. The risk remains that the difficulty of the task and the environmental impact—above all of the new mines and metal refin-

ing—will end up significantly slowing the penetration of electricity in satisfying needs such as heating or mobility. The potential for local and international conflicts, human rights violations and new local environmental damage is very high. It would be a miracle if these problems could be avoided. It follows that, while on the one hand it seems inevitable that international trade in these products will grow rapidly on the other it is very likely that the path will be an arduous one.

TOWARDS A NEW GLOBAL DISTRIBUTION OF INDUSTRY

We will certainly see profound changes in international energy-related trade, but we must beware of hasty and simplistic conclusions. To me, it seems inevitable that the need to decarbonize energy will also lead to profound changes in the location of all the industrial sectors that are most closely linked to the availability of energy in general, or to specific forms of energy.

Historically, the location of industry has been strongly influenced by the availability of energy. The textile industry was developed near watercourses capable of supplying the necessary mechanical energy. Many industries were developed near coal resources for as long as this was the main fossil fuel. It was only with the discovery of oil, extraordinarily versatile and easy to transport, that it was possible for industry to be located closer to the market than to the source of energy. Renewables are available in very unequal quantities and the energy produced is difficult to transport. There will always be a significant price gap between locations with abundant renewable

energy potential and more disadvantaged locations. Among the carbon-free sources, only nuclear offers a freedom of location comparable to that of oil.

Energy transitions will thus most likely lead to a reduction in international energy trade and an increase in the importance of trade in energy-intensive products. These prospects bring further into question the future of industry in Europe, and underline the importance of recycling, the circular economy and new technologies that reduce the energy intensity of industrial transformations.

We

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Energy transitions will most likely lead to a reduction in international energy trade and an increase in the importance of trade in energy-intensive products. For this reason, the recycling of materials, the circular economy and new technologies that reduce the energy intensity of industrial transformations are of fundamental importance.



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THE CHANGE OF PACE OF THE EU

by Nathalie Tocci



THE UKRAINIAN CRISIS LED TO AN ABRUPT POLICY SHIFT, ONE NOT TYPICAL OF THE UNIMPRESSIVE SPEED OF EUROPEAN DECISION-MAKING. THE EU COUNTRIES HAVE RUSHED TO FIND ALTERNATIVE SUPPLIES, APPROVE NEW INFRASTRUCTURES, WHILE ENHANCING THEIR CLIMATE TARGETS

AS THE UKRAINE WAR ESCALATES with no end in sight, Europe's resilience is put to the test. Nowhere is this clearer than in the energy sphere, where the crisis first created the perfect timing for Russia's invasion and then was weaponized against Europe in a broader confrontation with the West. In this clash, two interpretations of resilience come to the fore, those of Vladimir Putin and Jean Monnet, the father of European integration. The one that prevails will shape the outcome of the war and the future of Europe. Government action in the coming year is expected to shape the future of Europe and handling of the energy crisis.

TWO SIDES OF THE RESILIENCE COIN

Putin and Monnet represent two sides of the resilience coin: pain endurance and transformation through crisis. Putin believes that resilience is about pain endurance and that liberal democracies lack it. He believes Europe's pain threshold is low, certainly much lower than Russia, whose people are willing to sacrifice themselves for their motherland. In Putin's view, Russia is resilient; Europe is not. This interpretation is in stark contrast with the quintessential European understanding of resilience—outlined in Jean Monnet's memoirs: "Europe [will] be built through crises, and [will] be the sum of their solutions." Under his definition, resilience is about reacting, adapting and lifting up after a fall.

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These two interpretations are both true and incomplete. It is true that liberal democratic societies in Europe have a low—or lower—level of pain endurance compared to authoritarian Russia and that west European societies have gone through less hardship than Russians over the last decades. However, this does not mean they are less patriotic or more politically flaccid than Russia or that they haven't experienced challenging conditions. Furthermore, taking Putin's definition of resilience as a reference, the EU has not broken down despite its "perma-crisis" since 2005 (the 2005 constitutional crisis, the sovereign debt crisis, the migration crisis, Brexit, the pandemic and the Russo-Ukrainian war). At each juncture, many predicted a fall, but none of these catastrophes came to pass. The very existence of the Union and its evolution over time proves that Monnet's interpretation of resilience was not just a wish, but a prediction that so far has borne out. At each crisis, European integration, far from breaking, made steps forward, from the single market to the monetary union, passing through enlargement, and, more recently, NextGenerationEU. It remains to be seen whether the war and the multiple crises it has unleashed will see the EU react in ways more akin to the Eurozone and migration crises or the pandemic.

PUTIN'S GAMBLE

With the resumption of economic activity post-lockdowns, energy demand was growing again. However, energy supply couldn't keep pace, and the result was the rise of energy prices in the second half of 2021. This created a propitious strategic environment for Putin to manipulate energy markets in the fall of 2021 to further increase prices and then to invade Ukraine. As prices rose in late 2021, Putin deliberately fed that trend with Gazprom reducing storage levels in Europe and withholding additional gas volumes on spot markets. This helped fill Moscow's war coffers and increased Russian leverage in Europe. Putin must have been sure that faced with high prices and gas dependence on Russia, Europe would have barked without biting over Ukraine. But things worked out differently. The EU and the U.S. have shown a remarkable united and strong response by exacting severe sanctions, but the Russian president's conviction regarding Europe's lack of resilience likely remained unscathed. His response was to up the ante and turn off some taps.

Initially, Putin did not do much beyond basking in the funds that skyrocketing energy prices brought about, and Europe paid Russia a whopping €1 billion per day in the first half of 2022. When Europeans eventually agreed on an oil embargo, developed plans for energy demand reduction, began filling gas storages with alacrity and signed gas contracts with alternative suppliers, Russia hinted at possible supply interruptions to Europe. In this period, the Kremlin spread a propagandistic narrative that linked spiraling gas prices to sanctions while denying



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any weaponization of energy. Given Putin's interpretation of resilience, faced with the pain of rising energy bills, inflation and recession, social discontent in Europe would rise.

MONNET'S RESPONSE

Monnet would have seen things differently. Truth be said, Europeans were caught off-guard with the war. Russia's invasion not only swept away the scraps of hope left from the post-Cold War era, but also invalidated the model that had been built during the last decades of the Cold War, which saw the pursuit of energy ties across geopolitical divides. Despite the trauma of this failure, the shock of the invasion led to an abrupt policy

shift, abrupt when compared to the typically unimpressive speed of European decision-making.

The EU took longer to move on energy but considering how intertwined Europe and Russia were in this field and member states' different energy mixes and vulnerabilities, it is significant that by summer 2022 the EU had agreed on an embargo on Russian coal and oil. Gas is a different story. Given its strong regional dimension, Europe could not withstand an immediate halt of Russian gas, especially for Italy and Germany who were highly dependent on gas in general and Russian gas in particular. This said, Europeans did not stay put. Countries have rushed to find alternative supplies and approve new infrastructures.

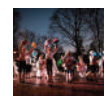
Alongside this, European countries enhanced their climate targets. Renewables and energy efficiency have gained a new relevance as they contribute to energy security. With a green Europe having become the EU's new identity and mission, the aim became that of reconciling energy security with the transition. The Commission's RepowerEU plan was an attempt to square the circle.

The EU has also proposed unprecedented measures, both temporary and structural, to contain prices and address the socioeconomic disparities generated by the crisis. First, it agreed on electricity reduction targets that foresaw a 10 percent voluntary reduction in gross electricity consumption and a mandatory 5 percent cut during peak demand hours. Second, the Council agreed on capping the remuneration of power for inframarginal technologies at €180 MWh. The revenues accrued would then be redistributed to families and businesses in need. The Council also proposed a temporary "solidarity contribution" by European oil and gas companies. Third, the EU is working on capping prices from other suppliers, beginning with Norway given its extraordinary profits despite siding with the EU in the war with Russia. Furthermore, the EU, within the G7, has discussed an oil price cap aimed at kicking in when the EU oil embargo starts. Finally, the EU has begun to work on a structural reform of its energy markets, including a supervision of the TTF gas price market and the decoupling of the electricity and gas markets. Ideas remain embryonic and complexities abound, but countries will need to ensure that the temporary measures adopted to deal with the energy emergency are functional to longer-term structural reforms as well as greater integration rather than fragmentation of the EU's energy market. While countries still disagree on certain solutions, such as price cap, European institutions have been working on enhancing solidarity and joint action by proposing joint procurement of gas. Both temporary measures and structural market reforms must be well designed, and this takes time. However, speed is essential to prevent member states from going it alone. A failure to reach quick agreements at EU level could trigger beggar thy neighbor dynamics to the detriment of all.

Last and most important is the need to reconcile energy security and the energy transition. On paper, it all makes sense and RepowerEU indicates the way, including increasing renewable targets from 40 to 45 percent of the European energy mix by 2030, and a rapid development of a hydrogen industry. Achieving this in practice is no sure thing. In the energy security emergency triggered by the war, Europeans have invested billions of euros in new and expanded fossil projects and allocated huge figures to shield consumers from soaring utility bills (€674 billion from September 2021 to October 2022). By way of comparison, NextGenerationEU, the EU's post pandemic recovery plan, amounts to €750 billion over the seven-year budget cycle. Moreover, it's important to consider the lock-in effects



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A group of young people perform a festive dance in the center of Khmelnytskyi, Ukraine. The war in Ukraine, the end of which is not yet in sight, is putting Europe's resilience to the test, especially in terms of energy.



The Moskva river, Moscow. Putin was sure that high prices and dependence on Russia for gas would drive Europe to bark, but not bite, over Ukraine. But things went differently: the EU, together with the United States, responded in a meaningfully united and forceful manner, even with severe sanctions.



A gas extraction plant in Russia. In 2021, 45% of the gas for the European Union came from Russia.



View of Grenoble, considered to be 2022's greenest city. Europe is increasingly committed to the decarbonization process and to increasing its use of clean energy.

created by new fossil fuel contracts and investments, as well as the twisted notion of selling more carbon permits to finance RepowerEU, which includes fossil projects.

It is easy to criticize this as squarely contradicting the European Green Deal. At COP27 several parties accused Europe of hypocrisy, but the EU has reassured other actors that it is even more committed to its long-term climate objectives. Yet the truth is that it is impossible to navigate the storm without fossil fuels. This is not to say that Europe's decarbonization targets are destined to be trashed. To the contrary. Energy efficiency has finally been taken seriously because of the crisis. Renewables will be ramped up beyond what our pre-war plans were. Finally, it is crucial to embed decarbonization projects—from renewables to hydrogen and carbon capture and storage—within the new energy relationships with old and new energy partners in the Middle East and North Africa region, sub-Saharan Africa and the Caucasus.

A BUILDING BLOCK IN EUROPEAN INTEGRATION

All this is possible but will cost huge sums of money, alongside laws, regulations, and diplomacy; much more than what was planned before the war began, which itself was enormous. The energy transition requires healthy economies. In fact, decarbonization is not sustainable without growth, much in the same way that growth can be fueled by a well-designed decarbonization process: it is a two-way street. Hence, the energy transition requires that European economies be put back on track, and

this depends on rapidly and effectively addressing the energy crisis. This, alas, cannot be done without fossil fuels. In other words, what appears as a contradiction. Energy security and energy transition are actually two sides of the same coin.

The elements of change, reform and transformation are all there. They are complex, unpredictable and riddled with obstacles and apparent contradictions. Yet there is a widespread recognition across European governments that this—much like the pandemic—is a crisis that can only be navigated by standing together. Uncoordinated measures and policies would cause intra-European competition, which would lead to an exacerbation of the current energy crisis. And there is a chance, arguably a realistic one, that Europe will navigate this crisis too and that the solutions it will find will become yet another building block in its history of integration. The upcoming months and year will indeed be crucial for Europe to build stronger mechanisms and solidarity. The jury is out on whether Putin or Monnet will win the day, and whether and how the Union will prove and strengthen its resilience. But at the height of this crisis, my bet today is squarely on Jean Monnet.

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THE INTERDEPENDENCE ON CRITICAL RAW MATERIALS

THE CHALLENGE FACING THE EU FOR THE NEXT FEW YEARS IS TO MAINTAIN AN OUTWARD-LOOKING APPROACH, MOVING CLOSER TO THE U.S. TO MITIGATE ITS ISOLATIONIST TENDENCIES AND DEVELOP ITS INDUSTRIAL CAPACITY TO REDUCE DEPENDENCE

by Marco Giuli

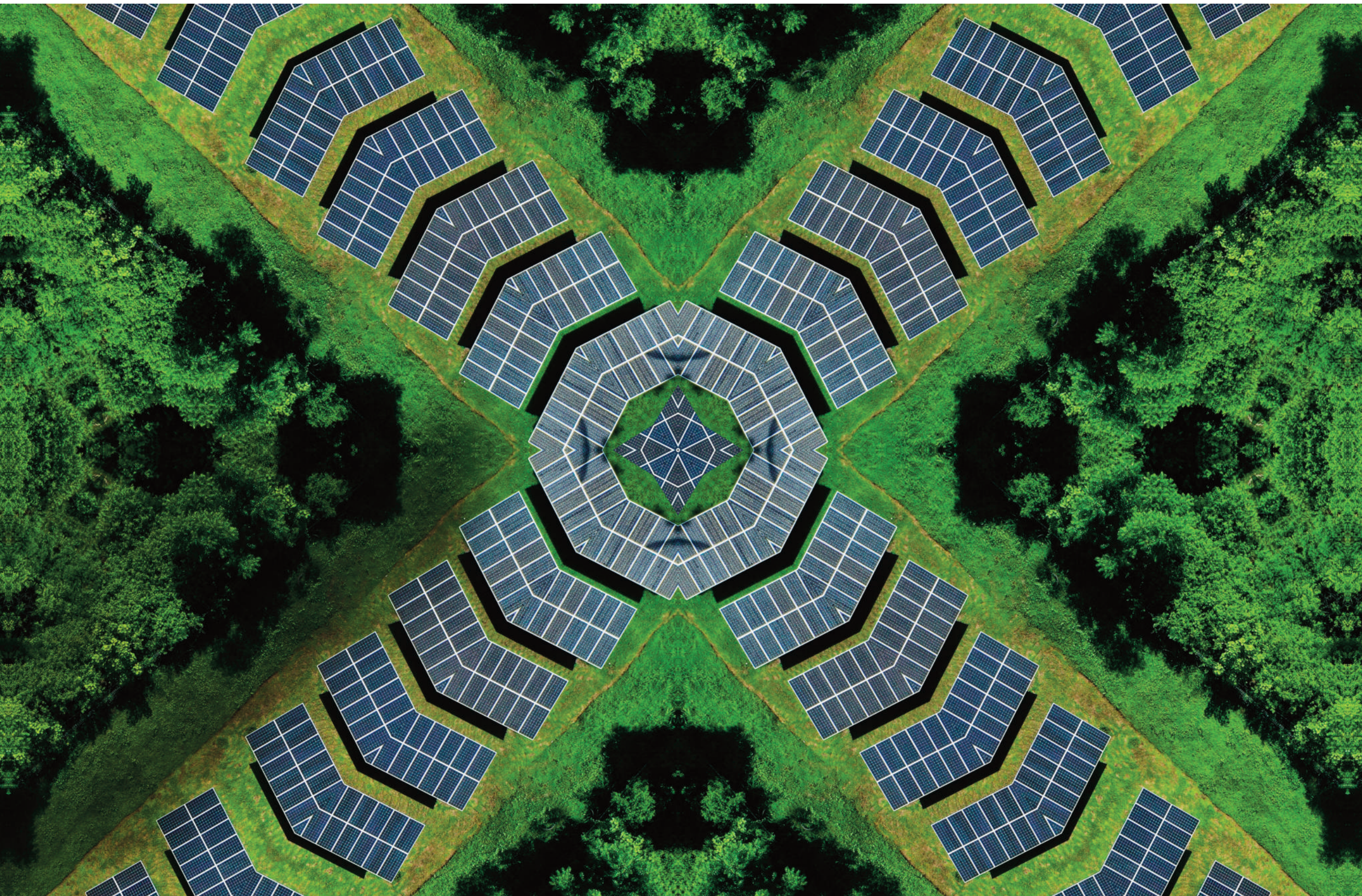
WITH THE ENERGY TRANSITION UNDERWAY, the demand for clean energy technologies is expected to massively surge. So too does the demand for a number of critical raw materials (CRMs) required to develop and facilitate them. With a significantly concentrated production, CRMs flows constitute one of the mechanisms through which the global pursuit of decarbonization is re-designing the geography of inter-state energy relations, giving rise to new economic and political opportunities and vulnerabilities.

A NEW GEOGRAPHY OF INTERDEPENDENCE

According to the European Commission, Europe's march toward climate neutrality will determine an astonishing rise in the demand for CRMs. The EU's demand for lithium for li-ion batteries is expected to rise from current 6,000 metric tons (t) to 158,000-337,000 t; cobalt from 30,000 t to 154,000-430,000 t; natural graphite from 250,000 t to 470,000-3,480,000 t. Rare earths elements (REEs) needed for wind turbines and electric vehicles' permanent magnets are set to rise from 4,000 to 6,200-17,100 t of neodymium, and 200 to 1,410-2,800 t of dysprosium. The demand for platinum, essential for hydrogen-related technologies such as fuel cells, might rise from 39 t to up to 60 t. The "criticality" of these materials refers to their economic importance and supply risk, mostly defined by a reliance on imports and supply concentration. The EU imports more than 90 percent of its lithium, natural graphite, REEs, platinum and borates requirements, and more than 70 percent of cobalt, and silicon metal. This supply is extremely concentrated, with China holding a strong position in the mid- and downstream sections of certain CRMs value chains. China supplies 52 percent of processed materials for batteries, 41 percent of processed materials for wind turbines and 50 percent of processed materials for solar panels. The EU is also dependent on China for almost 100 percent of its REEs primary and processed supply. While Chinese dominance over CRMs supply chains originally resulted from environmental and economic development objectives, mounting great power rivalry turned CRMs interdependence into an area of geopolitical contest.

NEW BOARD, NEW GAME

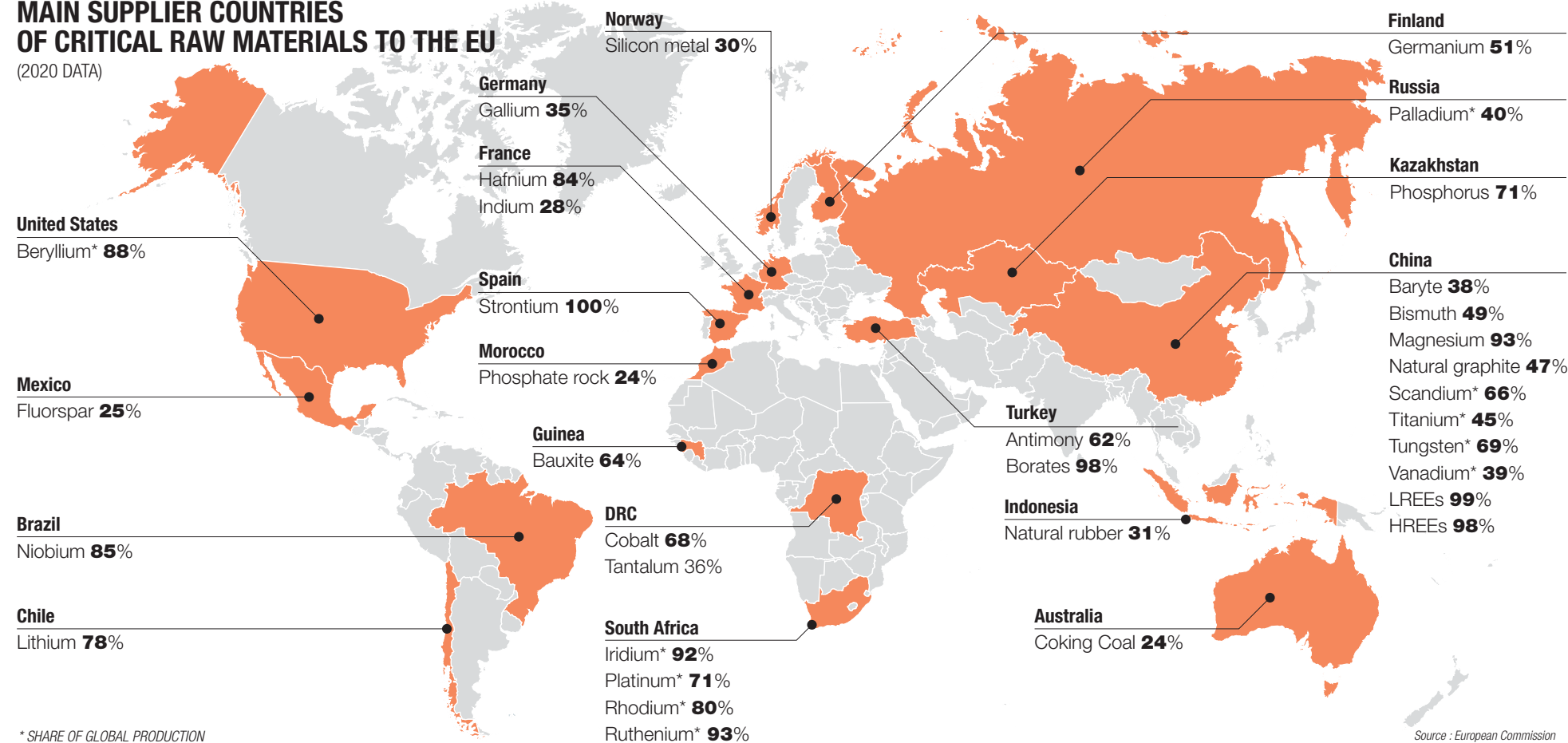
CRMs are a test case for the EU's declared pursuit of open strategic autonomy. While this concept means different things to different EU capitals, it is broadly understood as the ability to collect the benefits of interdependence while limiting exposure to risk. Fortunately for the EU, important factors of geopolitical risk mitigation are at play with CRMs. While current dependence is high and concentrated, CRMs reserves are spread across countries that entertain institutionalized and friendly relations with the EU, such as Latin American countries, Australia, Canada and South Africa. More importantly, CRMs supply disruptions should not have systemic effects on importers' economies, as they would not alter the operational costs of existing energy systems. A REEs or lithium disruption would cause a sudden spike in capital expenditure for wind turbines or battery producers, but would have no effects on the generation costs of installed wind turbines or the refueling of an existing electric vehicles fleet. Such low systemic sensitivity to supply shocks suggests that CRMs supply manipulations would have low coercive potential. Also, the EU has more effective instruments to manage CRMs interdependences than to manage current fossil fuel interdependences. In the context of fossil fuel dependences, EU pressures for reducing vulnerability through diversification have failed. Lack of unified institutional capacity in the choice of fuels sources and suppliers—which was jealously safeguarded under exclusive national sovereignty even after the Lisbon Treaty—has been combined with member states' divergent supply security preferences, perceptions often related to Russia's reliability as a gas supplier. These differences have exacerbated Europe's vulnerability to flows, prices and even discursive manipulations, problems which became dramatically evident with Russia's weaponization of energy as part of its aggression against Ukraine. In addition, the EU's attempts to strengthen gas supply security through rules diffusion among suppliers via multilateral initiatives such as the Energy Charter Treaty, regional networked governance schemes across the Mediterranean and bilateral structured energy dialogues with strategic suppliers,



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MAIN SUPPLIER COUNTRIES OF CRITICAL RAW MATERIALS TO THE EU

(2020 DATA)



The supply of many critical raw materials is highly concentrated in a few countries. For example, China supplies 98 percent of rare-earth elements (REEs) to the EU, Turkey supplies 98 percent of the borate and South Africa supplies 71 percent of platinum and supplies an even greater proportion of platinum group metals, such as iridium, rhodium and ruthenium. The EU relies on individual EU companies for its supply of hafnium and strontium.

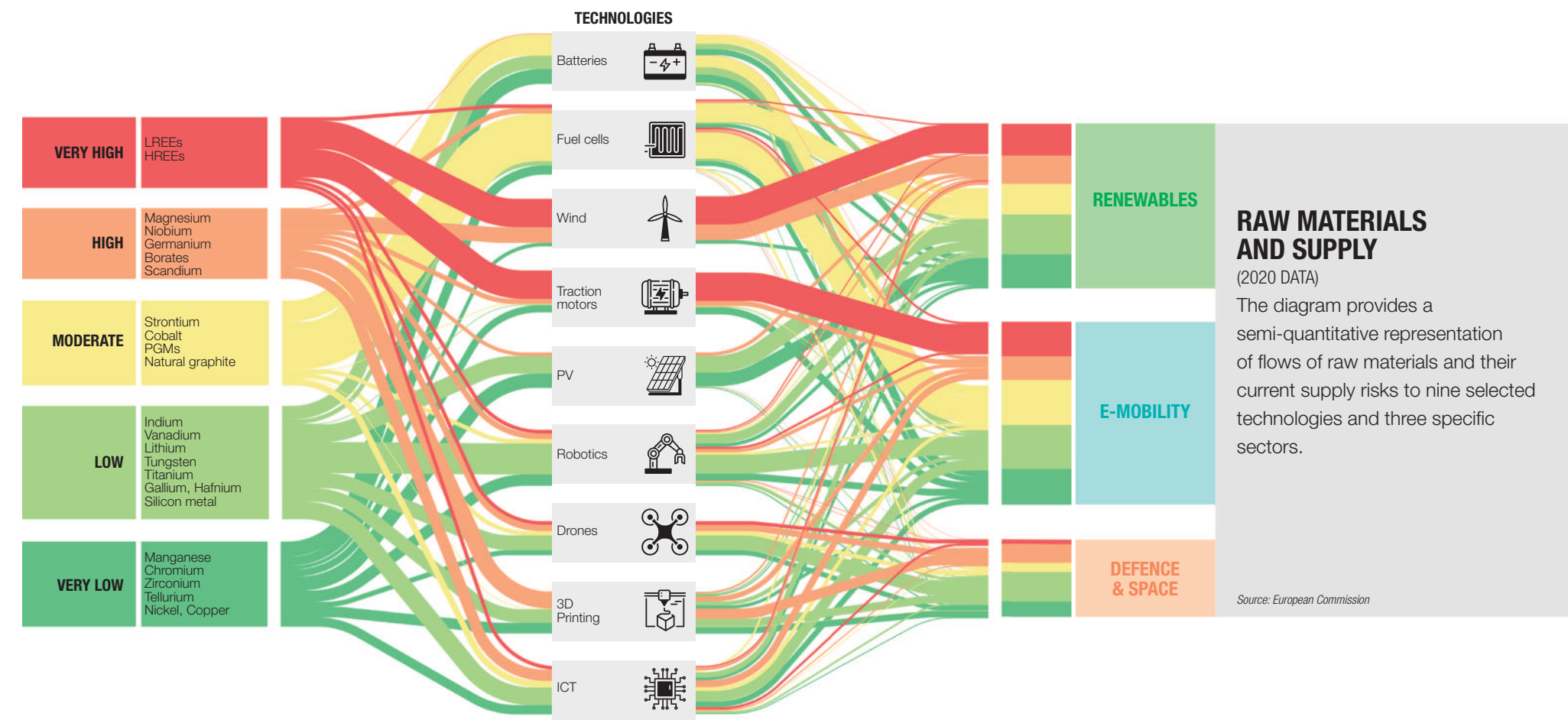
failed, largely because of supplier countries' resistance. Fossil revenues afforded suppliers' power resources vis-à-vis the EU and strengthened suppliers' domestic vested interests opposed to EU attempts to establish forms of hierarchic external governance in the energy field. As a result, fossil fuel interdependence turned out to be a poor predictor of the EU's external influence. Fortunately, CRMs interdependence is set to work differently from fossil fuel interdependence. First, it would be mostly managed through policy areas where the EU has at disposal sizeable power resources as a result of unified actions in trade, development aid, or research and innovation. Notably, the EU successfully leveraged bilateral trade talks to counter suppliers' CRMs export restrictions and relied, jointly with the U.S. and Japan, on multilateral dispute settlement mechanisms to challenge Chinese REEs export quotas. Second, CRMs constitute a tiny fraction of CRMs suppliers' exports and revenues, providing them less power resources and nourishing local vested interests far less than fossil fuels. This would reduce some suppliers' resistance to large importers' pressure for rules diffusion. Finally, in the long term, support to innovation in material substitution, efficiency and recycling can reduce the demand for imported CRMs. So far, end-of-life recycling input rates for CRMs are significantly low—ranging from 22 percent for cobalt to 0 percent for lithium and REEs. However, in most cases this depends

on economic reasons, which are expected to be overcome by an increase in primary material cost and a diffusion of end products. Material substitution or the adoption of different technologies may constitute promising responses where recycling is a more problematic option, as is the case, respectively, of REEs and lithium. Nevertheless, these options are not expected to be available in the short-to-medium term. With low geological endowments and limited societal acceptance for domestic mining activities, Europe's chief short-term option to reduce vulnerability lies in a more diversified supply.

INDUSTRIAL POLICY, MEET NATIONAL SECURITY

While the abovementioned factors limit the coercive potential of CRMs supply chain manipulations by suppliers, major risks for the EU stem from the great powers' attempts to assert sovereignty across mid and downstream sections of CRMs value chains. Distinctive concerns include China's emergence as an external governance provider among CRMs suppliers—as demonstrated by the activism of state-owned enterprises in more or less successfully taking over CRMs assets in third countries, from Australia to Canada, from Chile to the Democratic Republic of Congo—and the EU's clean energy sector's exposure to the potential fallouts of escalations in U.S.-China geo-economic warfare.

Such escalation might result in a breakup of global supply



chains which would raise significant concerns for the EU. In economic terms, such decoupling would raise the cost of the energy transition. Supply chain bottlenecks and a subsequent rise in capital expenditure for CRMs end users have already squeezed the profit margins of European clean energy product manufacturers. In governance terms, a protectionist wave might undermine the role of international norms and institutions, from which the EU derives its power resources for securing smooth and rules-based CRMs flows. In political terms, national retrenchments might stand in the way of the idea of "climate clubs" of like-minded countries willing to cooperatively deepen climate action and provide access to safe CRMs supply chains.

Notably, EU policymakers fear the U.S.'s increasing tendency to frame CRMs supply chain resilience in national security terms. Transatlantic misalignment has emerged already in the context of local content requirements and subsidies introduced under the recent U.S. Inflation Reduction Act, which aims at dislodging China's control on clean energy supply chains by turbocharging the reshoring of capacity across the whole CRMs value chain. A move that echoes—and responds to—decades of developmental activism by the Chinese state in the clean energy supply chains. This points to a geo-economic confrontation played through interventionist industrial policies, where Europe is not at ease. Despite early attempts to develop defense

instruments in trade policy and embryonic forms of industrial policy, a reactive regulatory style without preference for radical solutions play as a constraint.

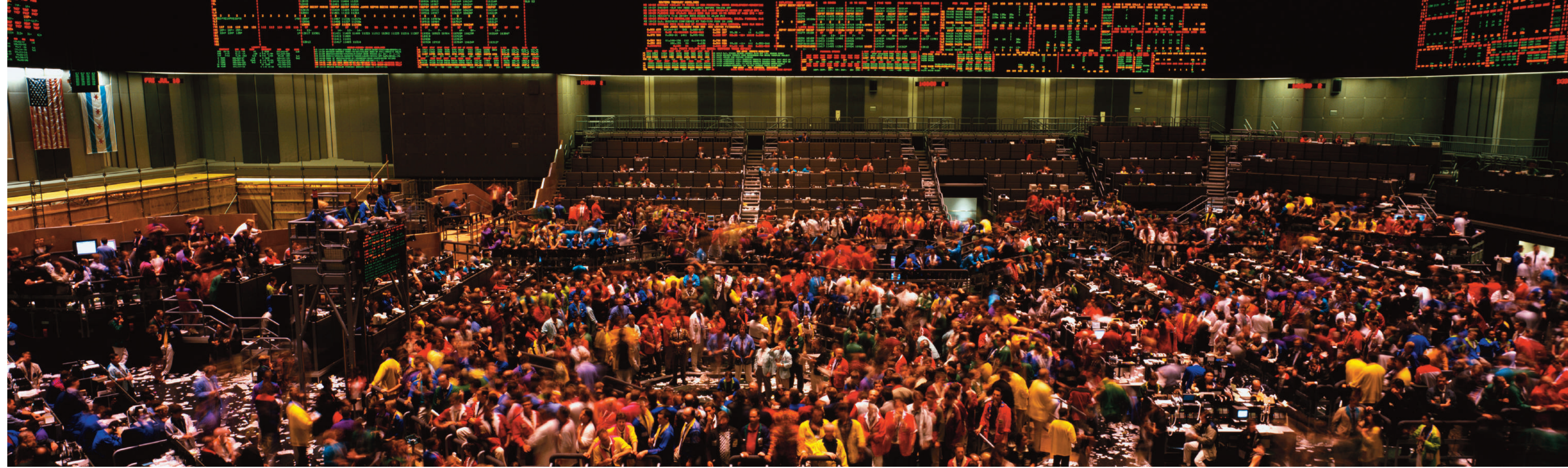
Considering the abovementioned risks, a protectionist turn by the U.S. is not good news for Europe. Rather than block CRMs interdependence, Europe has an interest in rebalancing and managing its mineral relations with China, rather than disconnecting. But Europe can hardly do it alone. Preventing CRMs supply bottlenecks, expanding global mining capacity, and improving transparency and sustainability standards in the mining business require that the EU leverage transatlantic leadership and financial firepower. The challenge for the coming years will be to maintain an outward looking approach, one that reaches out to the U.S. The goal is to mitigate isolationist tendencies, while developing its own industrial capacity—at least in processing and components—and to reduce dependence and enhance external influence in standard-setting. Any approach will need to be pragmatic and hybrid, balancing, rather than reconciling or integrating, a constellation of commercial, normative, and strategic considerations.

we

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THIS IS THE ONLY WAY TO FACE A VERY DIFFICULT 2023 FOR EUROPE, WITH A CONTINUED SHORTAGE OF GAS AND STRUCTURAL WEAKNESSES IN THE EUROPEAN ENERGY SYSTEM. FOCUS ON RENEWABLE SOURCES WITHOUT NEGLECTING TRADITIONAL SOURCES



ENERGY? IT'S ALL NECESSARY

by Davide Tabarelli

AFTER THE SHOCK OF 2022, prices will fall, but the question is when? In highly financialized markets, where there is great instability, sooner or later prices come down, though when is hard to say. It is unlikely to happen in 2023 because the crisis we are experiencing is structural and is destined to last for years, with issues connected not only to Russian gas, but also derived from profound weaknesses in Europe's energy system. Gas has become a commodity like any other, subject to sometimes incomprehensible mechanisms, with instability now the rule and the only certainty. However, there is a lot of gas in the world, including Italy which has always been rich in mineral resources.

It will take time, but gas will arrive, and prices will fall, here and in the rest of Europe.

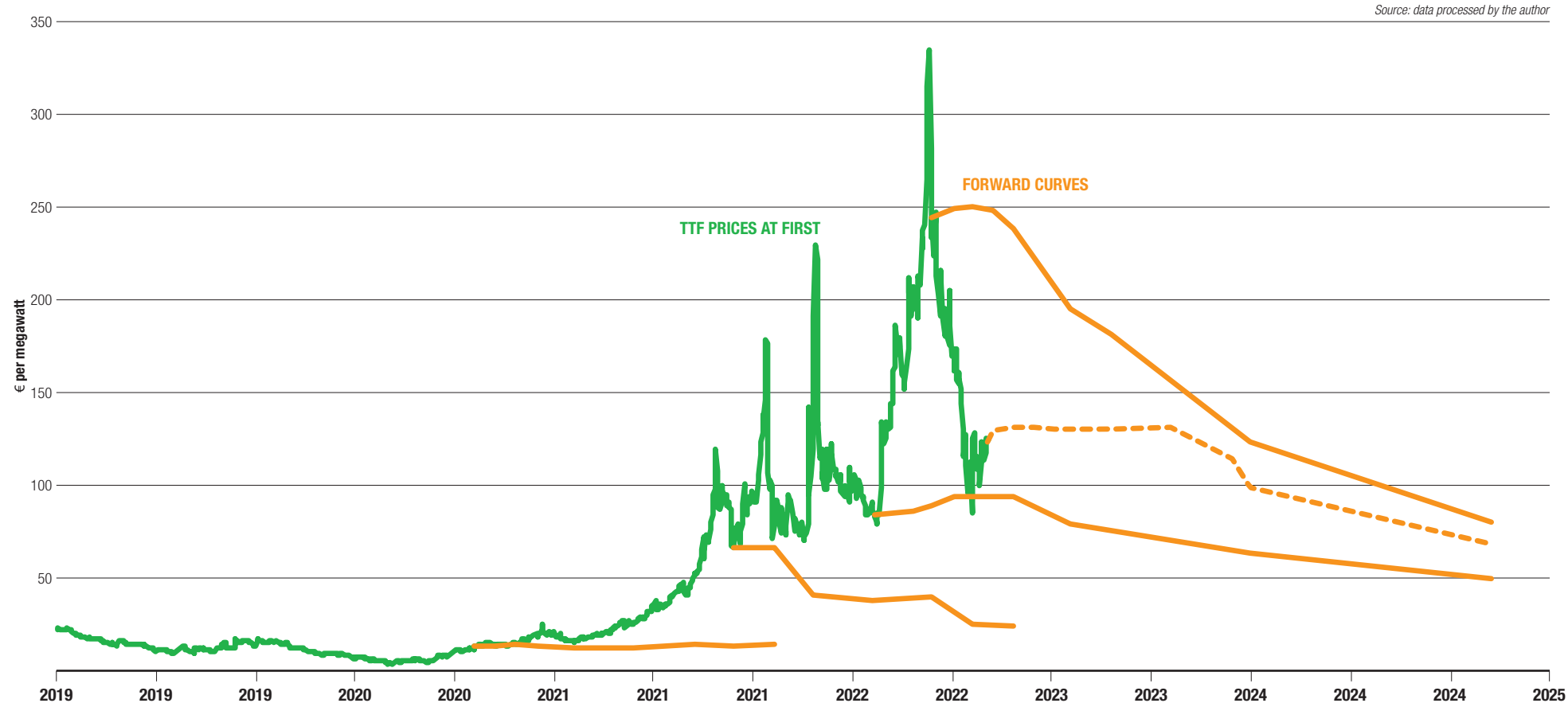
ALTERNATIVE SOURCES: IMPORTANT BUT NOT DECISIVE

Alternative sources will also arrive, the sources we would all like to be more important, but their contribution cannot be decisive in the coming years. They will help diversification and reduce total greenhouse gas emissions; however, these improvements will be marginal, not far from today. What is happening this year in Italy, amid the crisis, is typical, even for 2023. Under political pressure, acceleration of the construction of

new photovoltaic and wind power capacity is rightly sought, with an increase on the order of 5 billion kilowatt hours (BkWh), which will bring the total to over 50 BkWh. It is a positive goal, but it still represents just 17 percent of the total demand. Moreover, this occurs with a slump in hydropower production due to an exceptional drought suffered over the past year caused by very low rainfall. In 2022, the drop in hydropower will be on the order of 30 percent, about 15 BkWh fewer than the year before, a loss that cancels out three times the increase in new renewables. Seasonal intermittence, in addition to daily intermittence, is the great physical limitation

that prevents renewables from becoming more important in the immediate and near future. Unfortunately, there is little growth despite economic advantage, given that renewable costs are enormously lower than selling prices. Wind power costs less than €100 per megawatt hour (MWh), while photovoltaics costs as little as €50. The prices on the power exchange, where renewable producers can also sell, have for months been over €250 MWh, kept high by gas prices. The gas crisis makes it even more urgent and expedient to accelerate the deployment of renewables, but their physical limitations prevent them from growing faster.

TTF PRICES, TRENDS AND MATURITIES



The figure shows, in green, the trend of gas prices on the Amsterdam TTF, the reference market for all of Europe, compared with the forward curves, in orange. The forward curves represent the prices of gas with increasingly distant delivery over time. Their negative slope (backwardation) describes a situation in which the prices of the closer expirations are higher than those of the distant expirations.

WHAT COUNTS IS GREATER MARKET STABILITY

The solution to lower gas prices lies in re-establishing a greater balance in a market where—due to the war—40 percent of the supply has been cut: 155 billion cubic meters (bcm) provided to Europe by Russia, of which 29 billion are destined for Italy. Replacing this volume within a few months is impossible and it will take years to rebuild the infrastructure required to bring more gas to Europe. The other solution, feasible in the short term, is to reduce consumption through a reduction in economic activity, or even through rationing. In the first case, companies are no longer able to pay bills that are up to four times those paid last year, and thus they are forced to cut consumption. Rationing is the consequence of supply cuts, which may become necessary in times of peak demand due to the cold, in January and February, when stocks have difficulty meeting demand.

In 2023, the situation will remain marked by instability, with violent fluctuations in prices and with household bills and business invoices that follow these movements, though more slowly. It will still be the stock exchanges—in particular the London Intercontinental Exchange (ICE)—that will guide the entire energy price structure. It is also on these stock exchanges that much of the regulators' attention is concentrated, as the exchanges are tempted to intervene on the thrust of the polit-

ical world, which the regulators see as an instrument of speculation. In this period of total chaos, originating from the madness of war, stock exchanges have expressed highly significant indications through their prices. They have efficiency problems, are illiquid and are afforded excessive importance compared to the size of the physical market. However, there is no alternative in Europe and the quotations by the TTF (Title of Transfer Facility) anticipated events very well. The TTF had already been on a steep rise since June 2021 and its rise from €30 to €50 MWh, which later rose to €80, seemed unjustified, because it was rationally believed that war was an event that could not happen. Instead, the TTF market was proved right because the war came on February 24, 2022. Where disorder reigns, the markets, with their instability, have provided significant indications. They are always, despite various problems, the result of the buying and selling decisions of thousands of operators, all united, even the speculators, by having to make the best decisions based on the information available to them. This is the benefit of highly liquid and even financialized markets: the broad and open dissemination of information without restrictions. What the TTF did was to indicate that buyers who always speculated upwards, driving prices from €20 to €100 MWh at the end of 2021, were afraid that a war would come that would lead to a dramatic shortage of supply. Most observers

thought this possibility to be madness, but then the buyers were proved right, and the upward spiral not only began to make sense, but then continued throughout the remainder of 2022.

LOOKING TO THE FUTURE

Having recognized the strengths and weaknesses of the TTF market, it is useful to take from it information for the future. For example, observing the graph, we can see that on October 1, 2020 the forward curve was flat and prices for 2021 were forecast as stable at €15 MWh. The red line is nothing more than the series of prices set on October 1, 2020, for contracts that expired in the following months up to 2022. Back then, when the war was still far away, the price forecast for the start of 2022 was €14 MWh; later, however, the price surged to well over €100. From the crisis onwards, from the end of 2021, the forward curves always show a decline, as they started from very high values and downward movement was taken for granted. When the quotations for future maturities are lower, then the market is said to be in backwardation. The opposite situation, with future prices higher, is a contango. The latest curves at the end of November 2022 indicate a drop in prices in 2025, but towards levels which, over the months, have risen and are stuck at €100. In essence, the markets are telling us that gas prices will remain very high for a long time. The hope is that they are wrong, as they have often been in the past.

We can—indeed we should—criticize the market for financial excess, but these are the usual problems that are brought up to justify actions to limit government prices. At other times, pointing the finger at speculation is a pretext for avoiding having to tackle more serious problems, which always concern the fundamentals, simple issues, such as increasing supply and reducing consumption. Much of European policy has ended up in this paradox: faced with the dramatic nature of the crisis and with few intervention tools available, it has often ended up accusing the markets of inefficiency, to relieve itself from its obligation to restore the equilibrium of fundamentals. For a year, European policy focused on price caps, an easy slogan which, as the months went by, became more complicated, difficult to apply and, essentially, of little use in bringing down prices.

Something has been done on the supply front, through regasification facilities, which arrived very late, while domestic production in Europe, especially in the Netherlands and Italy, continues to fall. The shift to coal took place silently, almost secretly, mostly in the former East Germany, where much of the capacity is concentrated that has long been earmarked for closure. In Italy—which is, with Germany, the country most exposed to imports from Russia—movement to reopen coal-fired power stations has been too slow. Those that had recently been closed have been rekindled, but more could have been done to restart those that had been closed for some time. In view of slightly more serious problems in 2023 due to a shortage



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An offshore platform. The energy picture for 2023 in Europe is far from peaceful, with continuing gas shortages and the difficulties that have emerged with French nuclear power. Hence the urgent need to make new investments in all energy chains, obviously starting with renewables, without however neglecting traditional sources.



Belleville Nuclear Power Plant, in the town of Belleville-sur-Loire le Cher, France. Nuclear power could be of significant help in securing and diversifying the energy supply. However, nuclear power itself, for example in France, is suffering an even worse crisis than gas, since it is not replaceable in either the short or the medium term.



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of Russian gas, there is the urgent need for a more rapid reactivation of the coal-fired capacity set aside in past years across Europe. These are temporary reopenings—only for the duration of the crisis—waiting for tensions to ease when more gas or more renewables arrive, after which they can be closed again. Nuclear energy can be of significant help, such as in Germany, where the closure of three plants has been postponed for at least a couple of years. However, a worse crisis is looming for nuclear power than for gas because it must compete with vast quantities of underground methane in the world. While it is underground, it is only a matter of bringing it to markets with new investments, which require two or three years, but will come. In contrast, French nuclear power, which is in crisis, is not replaceable, neither in the short nor medium term. Building new capacity in Europe, even in France, is essentially impossible, due to hostility towards this technology. The fact that only three reactors are under construction in Europe—one in France, one in England and one in Finland in the start-up phase — demonstrate the impossibility of building dozens of new plants capable of replacing the old ones. This problem explains the high electricity prices in France, keeps the prices of the rest of Europe high and gives indirect support to gas prices. Paradoxically, precisely now that there is a shortage of gas from Russia, gas capacity is urgently needed for France, the only country able to compensate for the shutdown of old nuclear plants. The energy picture for 2023 in Europe is anything but serene, with a continuing shortage of gas and the difficulties that have emerged with French nuclear power, which show a worsening trend. Hence the urgent need to make new investments in all energy chains, obviously starting with renewables, without however neglecting traditional sources, in particular gas, which is the only thing that can save us in the short, medium and long term.

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PRIORITY THE ENERGY CRISIS

by Brahim Maarad

IT IS AT THE TOP OF THE EUROPEAN POLITICAL AGENDA, AS STATED BY PRESIDENT URSULA VON DER LEYEN, WHO WOULD LIKE MORE SUPPORT FOR EUROPEAN COMPANIES, TO CONVINCING THEM TO STAY, INVEST AND PRODUCE IN EUROPE



IN 2023, WE WILL PUSH FORWARD an ambitious agenda for citizens—tackling high-energy prices to reduce the burden for families and businesses across Europe, while accelerating our green transition. At home and across the globe, we will defend democracy and the rule of law.” These were the words of the president of the European Commission, Ursula von der Leyen, summarizing the Work Program for 2023. The energy crisis is a top priority and concern and cannot be otherwise.

ALARM FOR THE NEXT SEASON

Gas reserves are 95 percent full and the EU feels safe for this winter. But there are concerns over the next filling season as there is a concrete risk that Russia will cut the remaining 20 percent of supply to the Union bloc. The European government is looking to cover its back, but it doesn't always succeed. It has already implemented various initiatives: the joint purchase of gas, mandatory for at least 15 percent of the required storage volume; the diversification of sources, focusing increasingly on Norway, Azerbaijan, the United States, Algeria and

Qatar; and the reduction of consumption, 15 percent less in both gas and electricity. But that may not be enough, so work is underway on other measures. In particular several EU Member States are insisting on a cap on the price of gas traded on the Title Transfer Facility (TTF) in Amsterdam. While the Commission promises to propose a reform of the electricity market by the end of the year, a step that will lead to decoupling methane's price from the price of electric energy. A total stop to the supply of gas from Russia accompanied by cold weather and poor preparation by EU countries is the most feared scenario considered in the fall economic forecasts by the



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1 A EUROPEAN GREEN DEAL

The Commission will propose a general reform of the EU electricity market, one which will include the decoupling of electricity and gas prices. To encourage the rapid development of green hydrogen, the Commission will propose creating a new European Hydrogen Bank, which will invest € 3 billion in the relaunch of a hydrogen market in the EU. In 2023, the Commission will also take measures to reduce waste and its environmental impact, focusing on food and textile waste. Similarly, in response to the concerns of citizens, the Commission will propose a revision of EU animal welfare legislation.

2 EUROPE READY FOR THE DIGITAL AGE

To address the current and future risks of strategic dependencies, the Commission will propose EU measures to ensure adequate and diversified access to the critical raw materials needed for European digital and economic resilience. The Commission will also propose a common European space for mobility data to promote the digitization of the mobility sector.

3 AN ECONOMY AT THE SERVICE OF PEOPLE

The Commission will carry out a review of economic governance to ensure it is still fit for purpose. It will also carry out

a mid-term review of the EU budget for the period 2021-2027 and will allocate new resources based on the proposed single rulebook for corporate tax in Europe. To ensure that the EU's common currency is fit for the digital age, it will present a proposal that establishes the principles of a digital euro before a possible issuance by the European Central Bank.

4 A STRONGER EUROPE IN THE WORLD

The Commission will present the EU space strategy for security and defense and a new strategy for EU maritime security.

5 PROMOTION OF THE EUROPEAN LIFESTYLE

Because only 15 percent of young people have completed studies, training or apprenticeships in another EU country, the Commission will propose an update to the current EU learning mobility framework to make it easier for students to move between systems of education. 2023 will be the European Year of Skills.

6 A NEW IMPETUS FOR EUROPEAN DEMOCRACY

In 2023, the Commission will present a defense of democracy package, one that includes an initiative on protecting the EU's democratic space from outside interests.

European Commission. This scenario would result in a 0.7 percent recession in 2023 and a further surge in inflation.

This was also the picture outlined by Ursula von der Leyen in her speech on November 9 to the European Parliament: "The magnitude of the energy crisis calls for both a sense of urgency and strategic foresight. We have made more progress than we thought ever possible. Since the beginning of the war, Putin has cut 80 percent of his exports of pipeline gas to Europe. In only eight months, we have managed to replace most of it. For instance, we have more than doubled our imports of LNG from the U.S.—from 22 billion cubic meters (bcm) last year, to 48 bcm this year so far. This has made it possible to fill our storages by 95 percent. And at the same time, we have reduced our gas consumption by 15 percent." But it's not over.

"Yet, the next filling season—at the end of this winter—will be even more challenging. We will face three main obstacles. First, Russia may decide to disrupt completely its gas supply to Europe. Secondly, the global LNG capacity will not grow fast enough to fill this gap. And thirdly, growth in Asia may absorb most of this additional LNG. As a result of these factors, next summer, Europe may fall short by some 30 bcm of gas for filling our storages" highlighted the president.

This is another reason why joint purchasing is a top European strategy for next year. "Instead of outbidding each other, Europeans should buy gas together. This is very simple. Aggregation of demand will be mandatory for at least 15 percent of the volumes needed to fill gas storages. And the companies involved may form a gas purchasing consortium. We do this because we have learnt the lesson. We saw in August of this year, at the height of the filling season, how Member States were outbidding each other and thus really driving up the prices. We definitely can be smarter on that one," President von der Leyen has explained on multiple occasions. And since decisions in Brussels affects other countries, especially neighboring ones, the European Union is moving to ensure that no one is harmed by its actions. In particular, the EU wants to involve the six states of the Western Balkans in this joint purchasing mechanism and has promised them investments of €1 billion towards the energy transition. With North African countries, first and foremost Egypt and Algeria, it has signed a memorandum of understanding to launch a partnership on renewables and hydrogen.

SOLIDARITY AND SHARING ARE ESSENTIAL

Another element is intra-European solidarity: "We know that some Member States are more directly exposed than others to Russian gas. The situation is especially challenging for landlocked countries in Central Europe. But in the end, if you look at our Single Market with highly integrated supply chains, a disruption in one Member State has a massive impact on all Member States. So, sharing gas is absolutely critical," stressed

President von der Leyen. "Member States have already had for five years an obligation under EU law to conclude solidarity agreements with their neighbours in their home region. However, if you look at what has been concluded so far, of 40 possible agreements only 6 have been concluded. This is simply not enough in times of a crisis like this one. This is why we will put in place default rules for Member States."

But this strategy still comes at a price, a price paid by European families and businesses. "But we also see that resisting the Russian energy coercion comes at a price. European families have seen their gas bills skyrocketing. And our companies are struggling to keep up competitiveness. It is not only about the competitiveness in the Single Market—that is also important. But it is also about the global competitiveness that our companies are fighting for."

This concern is exacerbated by the Inflation Reduction Act (IRA), the U.S. law investment plan to subsidize clean energy that discriminates against European companies. "There is a risk that the IRA can lead to unfair competition, could close markets, and fragment the very same critical supply chains that have already been tested by COVID-19. We need to look at these issues closely—and at the same time learn what we could also do better," said President von der Leyen in a December 4 speech to students at the Diplomatic Academy of the College of Europe in Bruges.

"Europe will always do what is right for Europe. So yes, the EU will respond in an adequate and well calibrated manner to the IRA. But does this mean that we will engage in a costly trade war with the United States in the middle of an actual war? This is not in our interest. Nor in the interest of the Americans. And it would harm global innovation, too," she stated.

Rather than embarking on a new trade war against our American ally, Ursula von der Leyen seeks greater support for European companies that will convince them to stay, invest and produce in Europe, support through simpler and more predictable state aid and European funding in step with the times. "I see three main ways to do so. First, we have to adjust our own rules to facilitate public investments into the transition. Second, we have to reassess the need for further European funding of the transition. Third, we have to work with the United States to address some of the most concerning aspects of the law," explained the President.

In detail, "the Inflation Reduction Act should make us reflect on how we can improve our state aid frameworks and adapt them to a new global environment. First, we must look at how we can make our frameworks more predictable and simple. Europe has built a very sophisticated system, but businesses today want simple and predictable rules. My second point has to do with complementary European funding. While it is critical that Member States have the flexibility to invest their budgets in strategic sectors, this approach cannot be self-standing. As such



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it would favor deep-pocket states and lead to distortions that would eventually undermine the Single Market. Thus, we also need a common European answer to the challenge, both in the short and mid term. The new assertive industrial policy of our competitors requires a structural answer. In my State of the Union address, I introduced the idea of establishing a sovereignty fund. The logic behind it is simple: a common European industrial policy requires common European funding. The goal of our European industrial policy is for European industry to be the leaders in the clean transition."

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Lights on in the homes of a residential complex in the IJburg neighborhood of Amsterdam, Netherlands. The low temperatures in Europe are forcing families and businesses to use heating, putting the market's capacity to meet growing demand to the test.

A factory worker uses an industrial robot. The European Commission will allocate new own resources on the basis of the proposal for a single rulebook for corporate tax in Europe.

BRAHIM MAARAD
AGI reporter. Brussels correspondent.



THE SPECTER

of
DEINDUSTRIALIZATION

by Chiara Proietti Silvestri

CLOSURES, CUTS IN PRODUCTION, REORGANIZATION OF PRODUCTION SHIFTS, RELOCATION. THESE ARE THE SCENARIOS THAT EUROPEAN INDUSTRY FINDS ITSELF HAVING TO DEAL WITH FOLLOWING THE ENERGY CRISIS AND THE SHORTAGE OF RAW MATERIALS CAUSED BY THE CONFLICT BETWEEN RUSSIA AND UKRAINE

2 022 IS COMING TO A CLOSE and the year-end balance sheet is not the most positive. On energy, two historical data will remain etched in memory: the record €316 megawatt hours (MWh) reached on August 26 by the wholesale price of gas on the Dutch Title Transfer Facility (TTF) stock exchange—considered the reference market for continental Europe—and the 44.3 percent inflation rate in the Eurozone reached in March, in reaction to the increase in energy prices following the outbreak of the Russia-Ukraine war. Numbers that reveal a European economy under pressure. An unprecedented energy crisis, geopolitical uncertainty and record-high inflation are putting a strain on consumer purchasing power

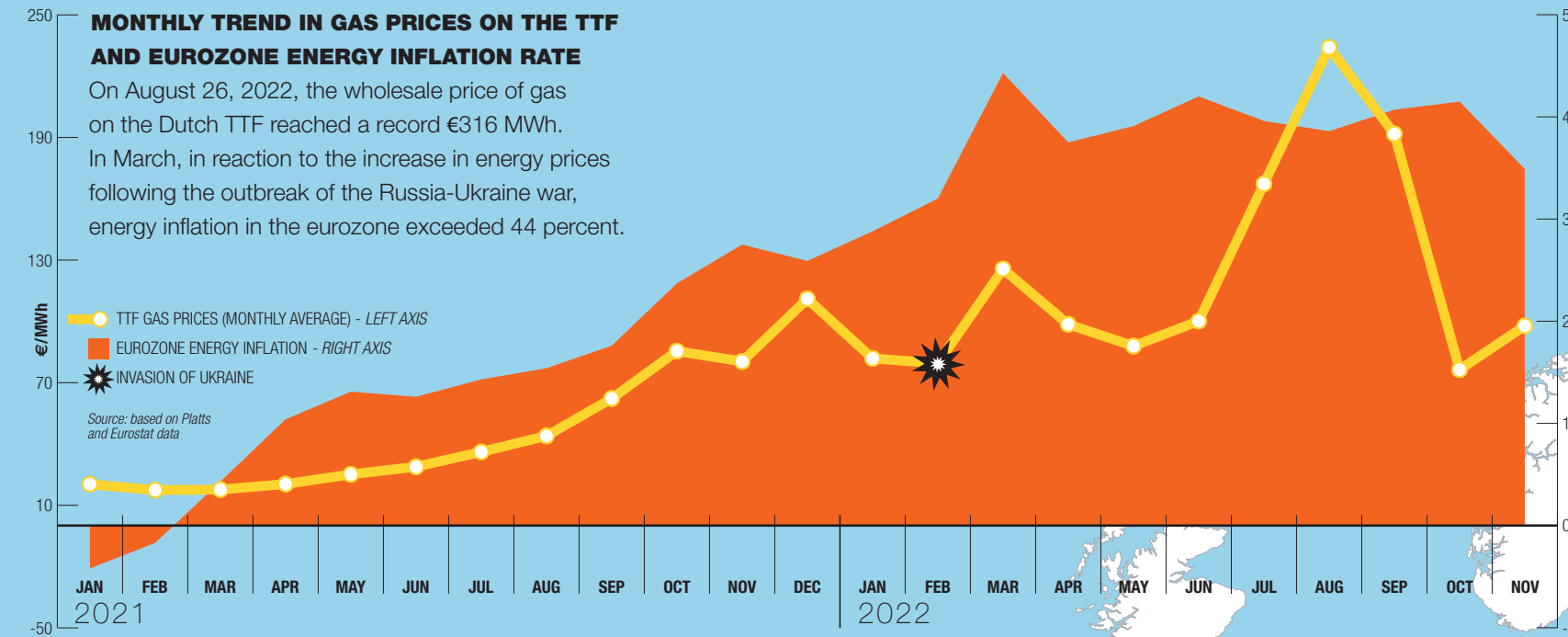
and business resilience. Energy-intensive industries, in particular, are the most vulnerable to energy costs that are hard to sustain, to the extent that many are forced to close. We are starting to witness a phase in which very high prices determine a “destruction” of the demand for productive uses, with the increasingly substantial risk of deindustrialization.

THE ENERGY CRISIS

The trend in gas prices mirrors the most disruptive events that characterized 2022. The Russian invasion of Ukraine at dawn on February 24 was the watershed that aggravated an already critical energy picture featuring strong imbalances between supply and demand. Prices—already high since July 2021—had only just stabilized below €100 MWh when the war began. With an armed conflict on Europe’s doorstep, the first packages of sanctions against Russia and the progressive loss of volumes of Russian gas, deep concern was aroused over the security of supplies in Europe, with knock-on effects on the entire global gas market. And prices started to rise again. Then, there were fears of a complete blockade of flows from Russia, the biggest natural gas exporter in Europe with a pre-war quota of 40 percent of EU imports. Let us remember the rush by European countries to fill stocks ahead of the winter season, which paved the way for a further surge in prices up to the peak in August. The result was a global energy crisis, considered to be the worst ever. Starting from September, the trend reverses: after reaching the highest peak on August 26 with the record figure of €316 MWh and a monthly average of €234 MWh, spot gas prices on the TTF platform began to fall to €76 MWh in October, reaching a daily low of €23.7 MWh on November 1. We have to go back to June 18, 2021, to find lower market prices. A welcome respite for families and businesses in Europe. However, this bonanza proved to be connected to entirely circumstantial factors: unusually mild temperatures, availability of liquefied natural gas and full storage sites. There was also the additional weight of the sharp drop in industrial consumption due to the closure of factories and businesses burdened by unsustainable costs. While initially the fall in industrial consumption could be attributed to a fuel switch, i.e., the transition to alternative fuels to natural gas, as the crisis continues the specter of deindustrialization is looming. So much so that, in late November and early December, gas prices started to rise again to over €130 MWh.

THE REPERCUSSIONS ON THE EUROPEAN ECONOMY

In contrast to the first half of the year, which was more dynamic thanks to a gradual process of normalization of post-pandemic economic and social life, starting from the third quarter the European economy entered a much less favorable phase. This is confirmed by the latest forecasts on European GDP, released by the European Commission in the autumn, which revised



INDUSTRIAL PLANTS IN THE EU SHUT DOWN OR OPERATING AT REDUCED CAPACITY IN THE TWO-YEAR PERIOD 2021-2022

70 percent of Europe’s fertilizer production has been halted or slowed down, and 50 percent of European production capacity for base metals such as aluminum and zinc has been lost. Companies have been crushed by high energy prices and the shortage of fundamental raw materials for certain production processes caused by the Russia-Ukraine war.

Note: the location of the individual plant is indicative of the country where it is located.

- F FERTILIZERS
- S STEEL
- A ALUMINUM
- Z ZINC

EU COUNTRIES
 NON-EU COUNTRIES

Source: based on data from Eurometaux, GfK Center, ICIS

Euro crisis



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growth for 2022 downwards compared to the spring forecasts (3.3 percent vs 5.4 percent).

This picture also undermines the confidence climate of European businesses, which remain pessimistic in terms of economic prospects. Since February, the Economic Sentiment Indicator (ESI) for the eurozone—the result of the business and consumer surveys—has fallen below its historical average, signaling a deterioration in confidence in the European economy. In November (latest data available), the erosion of confidence in manufacturing firms intensified, compared to a slight improvement on the consumer side.

These data follow the real performance of the European manufacturing industry, which has contracted since the third quarter of the year. As of July, the Eurozone Manufacturing PMI (which measures the level of activity of purchasing managers) fell below the expansion threshold, even though the rates of decline in production and new orders in November proved less aggressive than the record rates observed in October.

REMEDIAL ACTION BY EUROPEAN BUSINESSES

In recent months, the major European industry associations have expressed their concerns to the top levels of the EU in-

stitutions regarding the future of companies in energy-intensive sectors, sounding the alarm over the risk of deindustrialization. European industry employs 35 million people, around 15 percent of the active population, and is responsible for 30 percent of total gas demand. Energy-intensive industry—steel, paper, cement, ceramics, chemicals, food, foundries, glass—represents 87 percent of industrial gas consumption and is therefore most exposed to the current energy crisis.

Estimates show that 70 percent of fertilizer production in Europe has been halted or slowed down, also affecting downstream production, such as plastics and the food and beverage industry. Fifty percent of European production capacity of base metals such as aluminum and zinc has been lost, and there have also been reductions in steel, paper, ceramics and glass. There has also been the added weight of the shortage of fundamental raw materials for certain production processes caused by the Russia-Ukraine war. The ceramics sector, for example, complains of a shortage of clay from the Ukrainian region of Donbass. In addition, restrictions on imports from Russia have affected the aluminum, nickel, palladium and vanadium markets; in the same way, the trade in potash—an essential input in the production of fertilizers—has been affected.

From an energy point of view, there are concerns over the pressures on prices from a “short” gas market, in addition to potential tensions on the oil front. The decision by OPEC+ in October to cut oil production by 2 million barrels per day (MMb/d) comes on top of the entry into force of the Russian oil embargo on December 5, which is expected to take some 3 MMb/d off the European market. The International Energy Agency (IEA) has sounded the alarm over the future of supplies for next year, which suggests that the energy crisis will not end in 2023.

The year that is just beginning has an uphill start, even if less steep than initially imagined. The extraordinarily mild autumn temperatures have made it possible to save gas and keep stocks at relatively high levels for the period; this should enable us to get through the coming winter without excessively critical situations. However, we must plan for the winter of 2023-2024, which will be the real test of the stability of the European energy system. In a scenario of Russian gas supply reduced to zero, the responses of European policy will have to be convincing and coordinated if we are to prevent the price increases that occurred during the competition to fill storage this summer. Then there is the fundamental charter of reducing energy consumption which can make a difference, especially with the scarcity of supply we are currently experiencing.

To date, politics has focused on measures to contain the cost of energy supplies and protect the purchasing power of households and businesses. However, while bringing the cost of energy back to sustainable levels is a must, it is also essential to do so without stimulating demand with savings reward policies that are still struggling to take off. Measures to deal with a crisis of this magnitude require dialog and coordination at community level to ensure that the most rational interventions become best practices for all, safeguarding the European social and business fabric. The risk of going it alone is that only the countries with greater fiscal capacity are able to overcome the emergency unscathed, leaving all the others behind. And while a two-speed Europe can make sense; a lame Europe is a scenario that does not suit anyone.

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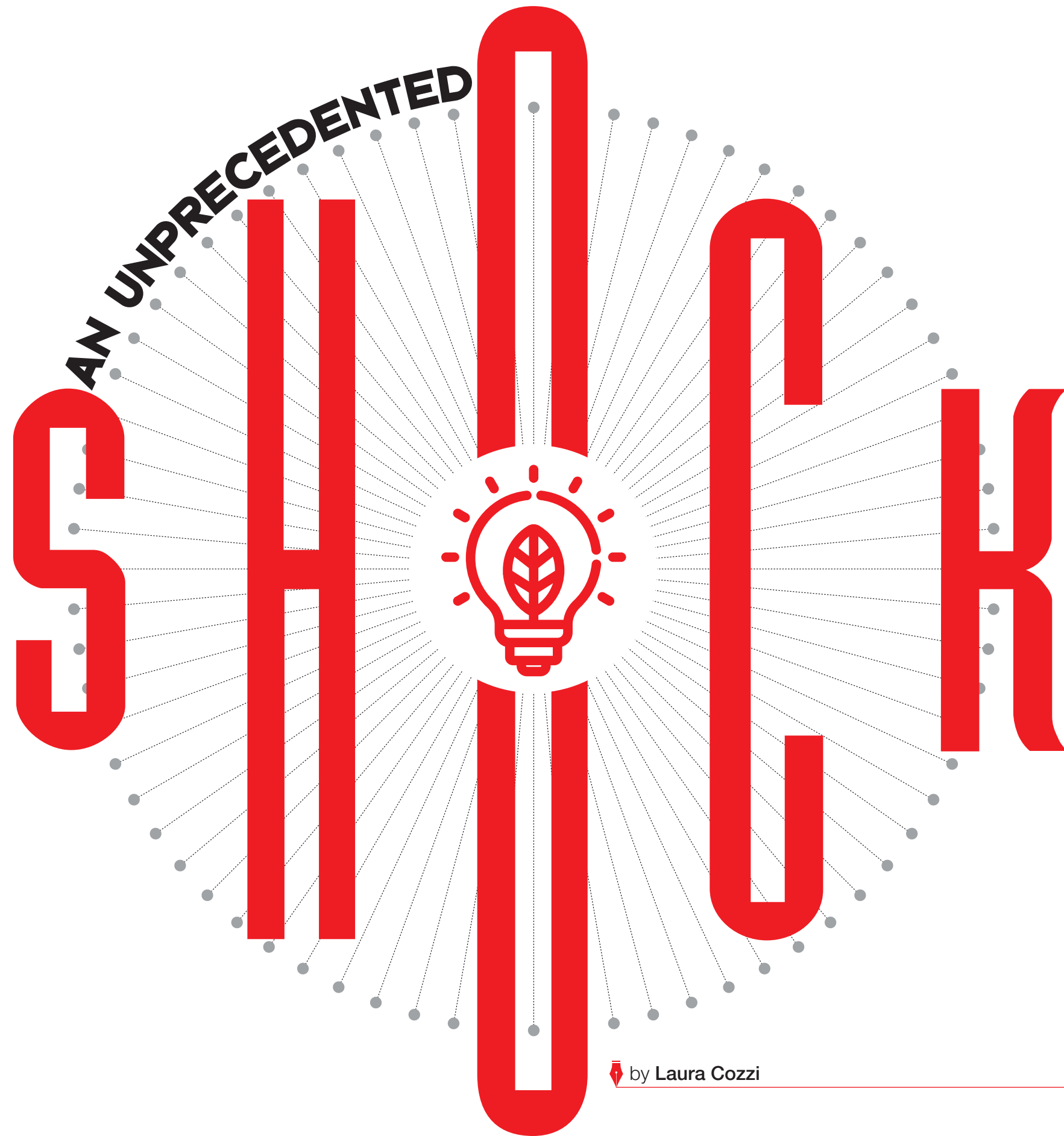
Closures, cuts in production, reorganization of production shifts and the risk of relocation are the scenarios facing European industry. Many companies have taken measures to reduce energy consumption as much as possible through process optimization, use of alternative energies and creative solutions. From early shifts at dawn, to investment in more efficient machinery and even providing staff with gloves and coats in order to leave the factory heating off this winter. Beyond the emergency measures, we need concrete answers from politics. The risk of an ever-increasing number of industrial companies having to close or move outside Europe—with an aggravation of dependence on third countries—is high, with consequent job losses, sharp decline in competitiveness and exacerbation of social tensions.

SHORT-TERM PROSPECTS

Expectations for the future are not rosy as they are influenced by weak demand conditions, inflationary pressures and geopolitical tensions. The term “recession” is once again being heard in the press releases by the European Commission, which reiterates that the risk is now a reality for many member states, despite the fact that overall European growth is still expected to be positive (0.3 percent in 2023 and 1.6 percent in 2024).

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THE GLOBAL ENERGY CRISIS, WHICH IS HURTING ECONOMIES AROUND THE WORLD, CAN BE A HISTORIC TURNING POINT TOWARDS A CLEANER AND MORE SECURE ENERGY SYSTEM THANKS TO THE BIG RESPONSE FROM GOVERNMENTS. IT IS VITAL TO INCENTIVIZE PRIVATE ACTORS TO PLAY THEIR PART BY ACCELERATING INVESTMENTS



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THE WORLD IS IN THE MIDST of its first global energy crisis—a shock of unprecedented breadth and complexity. Global markets are experiencing record prices for energy commodities. Spot natural gas prices in Europe have regularly been above USD 40 per million British thermal units (MBtu), more than double the oil price on an energy-equivalent basis. International coal prices have seen unprecedented high levels—above USD 300/ton—more than tripling the average price of the 2010s. In turn, tight natural gas and coal markets led to exceptionally high electricity prices in many markets. The global energy crisis is hurting households, industries and entire economies—most severely in the developing world where people can least afford

it. For the first time in decades, the number of people around the world without access to electricity is set to rise in 2022. Because of the pandemic and the current energy crisis, 75 million people that recently gained access to electricity are likely to lose the ability to pay for it, as are 100 million people that had gained access to clean cooking. Russia loses in this reshuffling of international trade. Prior to its invasion of Ukraine, Russia was the world's largest fossil fuel exporter: Russia exported about 50 percent more oil and gas combined than Saudi Arabia, the next biggest exporter. In the latest International Energy Agency's (IEA) *World Energy Outlook (WEO)*, more Russian resources are drawn eastwards to Asian markets, but Russia has been un-

successful in finding markets for all of the flows that previously went to Europe. In 2025, Russia's oil production is projected to be 2 MMB/d (bpd) lower than last year's IEA projections, with gas production down by 200 billion cubic meters (bcm). While Russia is to gain much more income this year, around USD 150 billion more in oil and gas sales in 2022 than the average over the past decade, it is clearly a long-term loser.

A TURNING POINT

The IEA's WEO finds that today's crisis can be a historic turning point towards a cleaner and more secure energy system thanks to the unprecedented response from governments around the world, responses that include the Inflation Reduction Act in the United States, the Fit for 55 package and REPowerEU in the European Union, Japan's Green Transformation (GX) program, Korea's aim to increase the share of nuclear and renewables in its energy mix and ambitious clean energy targets in China and India. Moreover, the recently announced USD 20 billion Just Energy Transitions Partnership to accelerate coal phase down in Indonesia is a milestone in supporting the reduction of a reliance on fossil fuels in developing countries.

For the first time ever, a WEO scenario based on today's prevailing policy settings has global demand for every fossil fuel exhibiting a peak or plateau. In this scenario, coal use falls back within the next few years, natural gas demand reaches a plateau by the end of the decade and rising sales of electric vehicles (EVs) mean that oil demand levels off in the mid-2030s before ebbing slightly to mid-century. This means that total demand for fossil fuels declines steadily from the mid-2020s to 2050 by an annual average roughly equivalent to the lifetime output of a large oil field. The declines are much faster and more pronounced in the WEO's more climate-focused scenarios.

Global fossil fuel use has grown alongside GDP since the start of the Industrial Revolution in the 18th century. Reversing this rise will be a pivotal moment in energy history. The share of fossil fuels in the global energy mix in the Stated Policies Scenario falls from around 80 percent to just above 60 percent by 2050. Global CO₂ emissions fall back slowly from a high point of 37 billion tons per year to 32 billion tons by 2050. This would be associated with a rise of around 2.5 degrees Celsius in global average temperatures by 2100, far from enough to avoid severe climate change impacts. Full achievement of all climate pledges would move the world towards safer ground, but there is still a large gap between today's pledges and a stabilization of the rise in global temperatures around 1.5 degrees Celsius.

MORE INVESTMENTS

A huge increase in energy investment is essential to reduce the risks of future price spikes and volatility, and to get on track for net zero emissions by 2050. From USD 1.3 trillion today, clean energy investment rises above USD 2 trillion by 2030 in a sce-

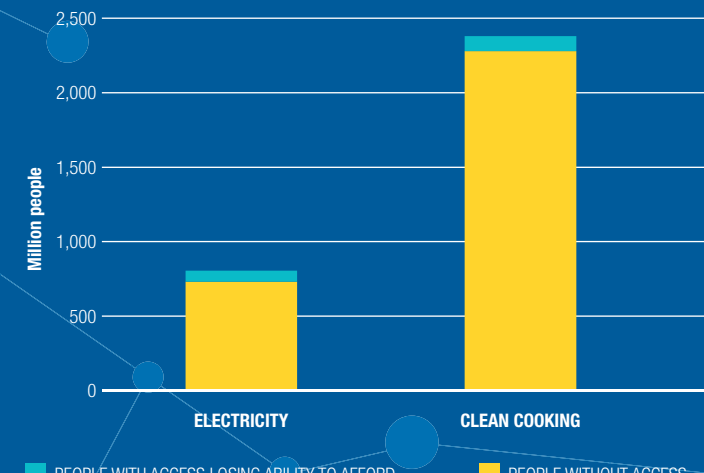
The light at the end of the tunnel

The world is experiencing its first global energy crisis, which has brought with it inflation and the risk of recession. However, the crisis seems to foreshadow a historic shift towards a cleaner and more secure energy system in which renewables are significantly on the rise. For the first time in a World Energy Outlook (WEO)

scenario in line with stated policies (STEPS), there is a peak in the global demand for each of the fossil fuels. In order to stay in line with the Net Zero Emissions (NZE) scenario, spending on clean energy will have to triple by 2030 and shift towards developing economies.



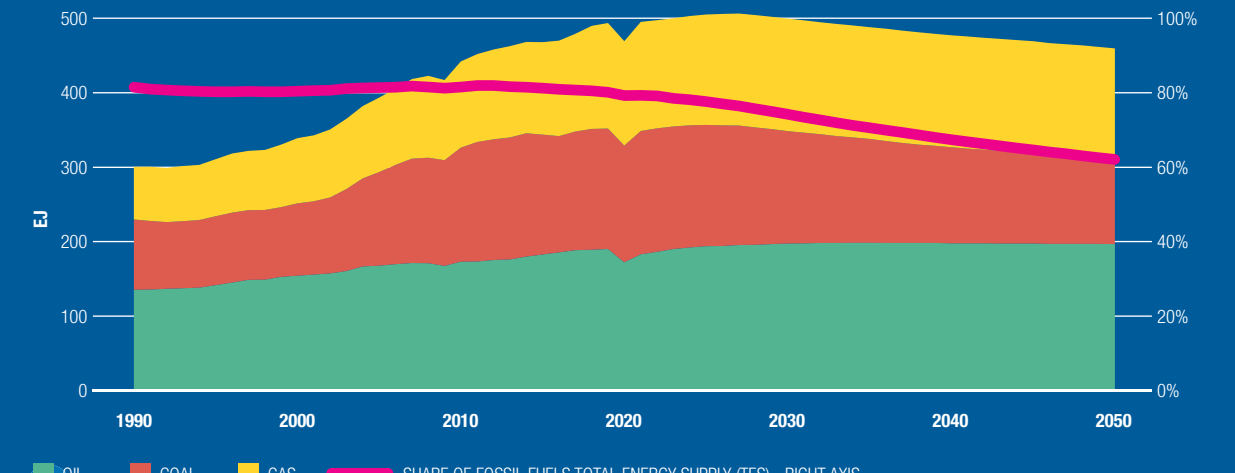
ACCESS TO ENERGY, A STEP BACKWARDS



Around 75 million people in sub-Saharan Africa and developing countries in Asia, which have only recently gained access to electricity, are at risk of not being able to pay for it, and 100 million people can no longer afford to cook with LPG.

Source: IEA (World Energy Outlook 2022)

DEMAND FOR FOSSIL FUELS

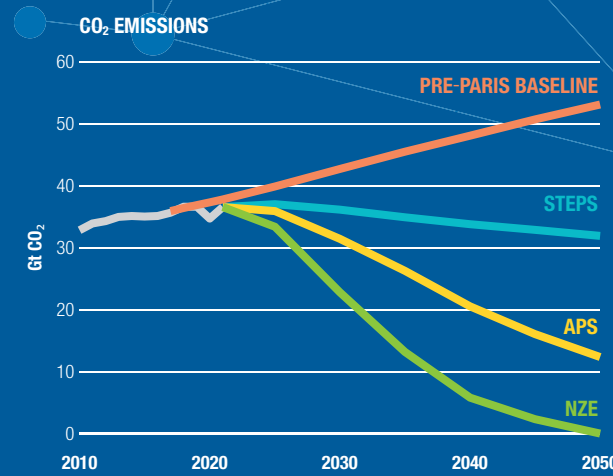


For the first time ever, a WEO scenario based on the stated policies (STEPS) shows global demand for each fossil fuel reaching a peak.

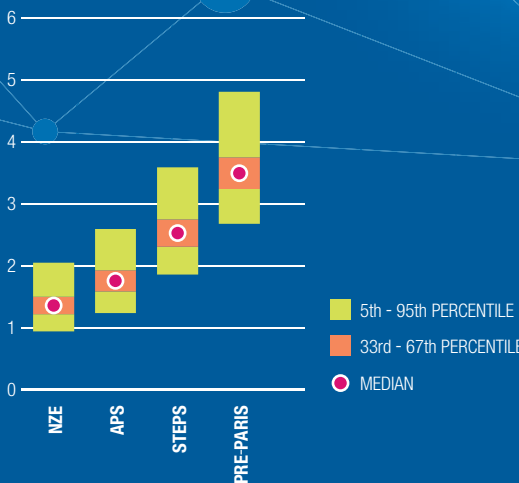
By 2050, fossil fuels will represent just over 60 percent of the global energy mix, down from the current figure of 80 percent.

Source: IEA (World Energy Outlook 2022)

ENERGY-RELATED CO₂ EMISSIONS



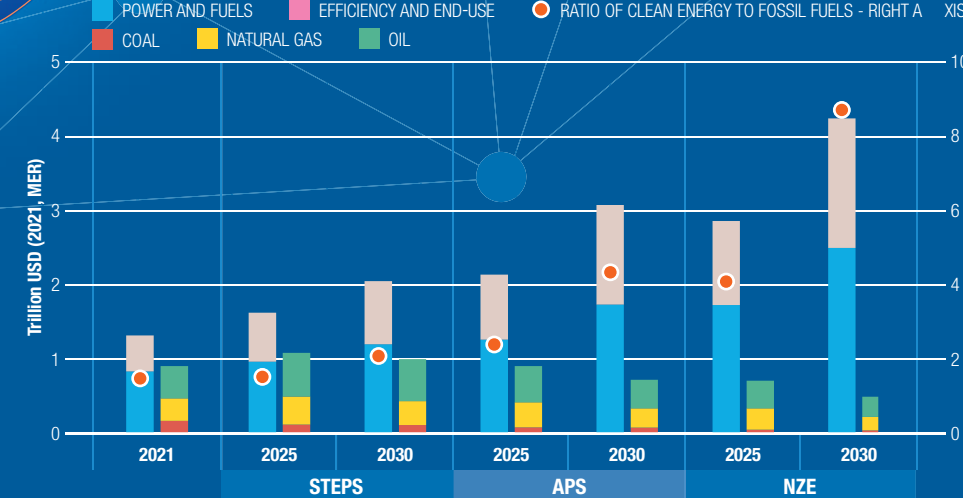
TEMPERATURE RISE IN 2100



In the STEPS, global CO₂ emissions will slowly decline from a maximum of 37 billion tons to 32 billion tons a year; however, this would be associated with an increase in average global temperatures of approximately 2.5 °C by 2100, which would not be sufficient to avoid the most serious impacts of climate change.

Source: IEA (World Energy Outlook 2022)

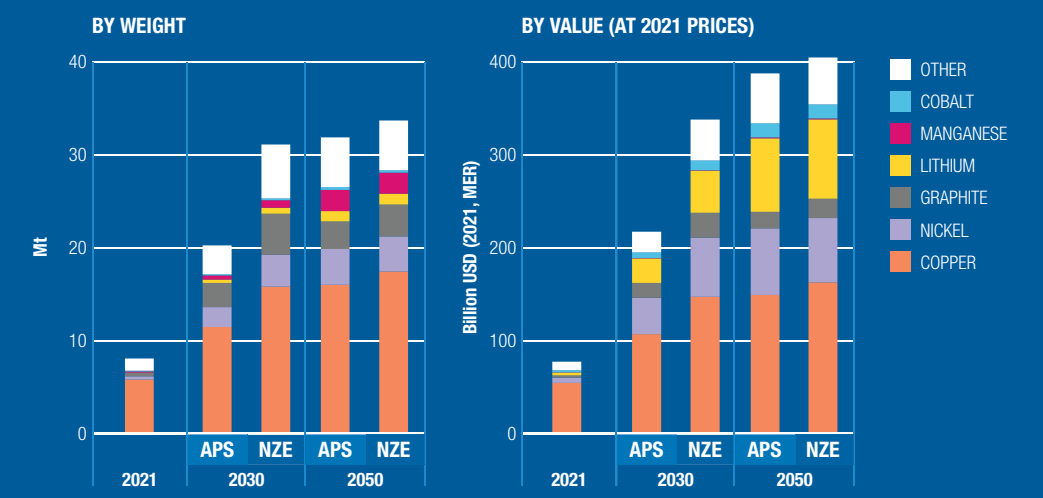
INVESTMENTS BY SCENARIO



The stated policies scenario (STEPS) foresees that, by 2030, investments in clean energy will surpass USD 2 trillion, compared with today's figure of 1.3 trillion; however, to keep the temperature increase below 1.5 °C (NZE), investments will need to exceed USD 4 trillion.

Source: IEA (World Energy Outlook 2022)

DEMAND FOR CRITICAL MINERALS



In the NZE scenario, demand for critical minerals for clean energy technologies will quadruple by 2050, with particularly high growth in demand for materials needed for the production of electric vehicles.

Source: IEA (World Energy Outlook 2022)



© GETTY IMAGES



Logistics hub in the Saint-Nazaire offshore wind farm, the first to be built off the coast of France. The farm, which was opened by president Emmanuel Macron last September, has an overall capacity of 480 MW. When working at full capacity, its eighty turbines will be able to cover 20% of the Loire-Atlantique's electricity needs.

nario based on current policy settings, but it would have to be above USD 4 trillion by the same date if we were to be consistent with limiting temperature increase to 1.5 degrees Celsius, highlighting the need to attract new investors to the energy sector. Governments should take the lead and provide strong strategic direction, but the investments required are far beyond the reaches of public finance. It is vital to harness the vast resources of markets and incentivize private actors to play their part. Today, for every USD 1 spent globally on fossil fuels, USD 1.5 is spent on clean energy technologies. By 2030, a scenario compatible with 1.5 degrees Celsius (Net Zero Emissions – NZE scenario), every USD 1 spent on fossil fuels is outmatched by USD 5 on clean energy supply and another USD 4 on efficiency and end-uses. If clean energy investment does not accelerate as in the NZE Scenario then

higher investment in oil and gas would be needed to avoid further fuel price volatility, but this would also mean putting the 1.5 degrees Celsius goal in jeopardy. Under current policy settings, an average of almost USD 650 billion per year is spent on upstream oil and natural gas investment to 2030, a rise of more than 50 percent compared with recent years. This investment comes with risks, both commercial and environmental, and cannot be taken for granted. Despite huge windfalls this year, some Middle East producers are the only part of the upstream industry investing more today than prior to the Covid-19 pandemic. Amid concerns about cost inflation, capital discipline rather than production growth has become the default setting for the U.S. shale industry, meaning that some of the wind has gone from the sails of the main source of recent global oil and gas growth.

NEW VULNERABILITIES

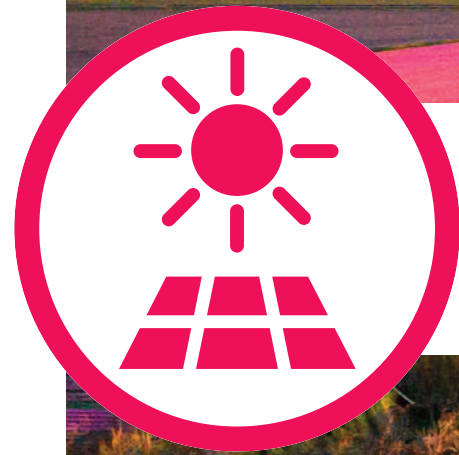
As the world moves on from today's energy crisis, it needs to avoid new vulnerabilities arising from high and volatile critical mineral prices or highly concentrated clean energy supply chains. If not adequately addressed, these issues could delay energy transitions or make them more costly. Copper sees the largest increase in terms of absolute volumes, but other critical minerals experience much faster rates of demand growth, notably silicon and silver for solar PV, rare earth elements for wind turbine motors and lithium for batteries. Continued technology innovation and recycling are vital options to ease strains on critical minerals markets. High reliance on individual countries such as China for critical mineral supplies and for many clean technology supply chains is a risk for transitions, but so too are

diversification options that close off the benefits of trade. The journey to a more secure and sustainable energy system may not be a smooth one. But today's crisis makes it crystal clear why we need to press ahead.

we

LAURA COZZI

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THE TREND IN INVESTMENTS

by Alessandro Lanza
and Annamaria Zaccaria



THE PRICE INCREASES COULD LAUNCH A SEASON OF HUGE INVESTMENTS, ESPECIALLY IN THE CLEAN ENERGY SECTOR, IN LIGHT OF THE PLEDGES MADE ON THE REDUCTION OF GREENHOUSE GAS EMISSIONS AND FOR THE SECURITY OF SUPPLY

THE RUSSO-UKRAINIAN WAR has undermined the stability of the energy “trilemma”—security, affordability and sustainability—and, if not managed correctly, could lead to the failure of the energy transition. The EU ban on the import of Russian coal, crude oil and oil products transported by sea has caused fossil fuel prices to soar.

Easing the burden on consumers is an immediate priority for many policy makers: the total energy bill paid by consumers worldwide is likely to reach USD 10 trillion in 2022, hitting

the poorest parts of society hardest and pressuring governments to cushion the blow through ad hoc measures. Governments act through interventions in support of the poorest families and energy-intensive businesses and market interventions aimed at encouraging investments in renewable energy.

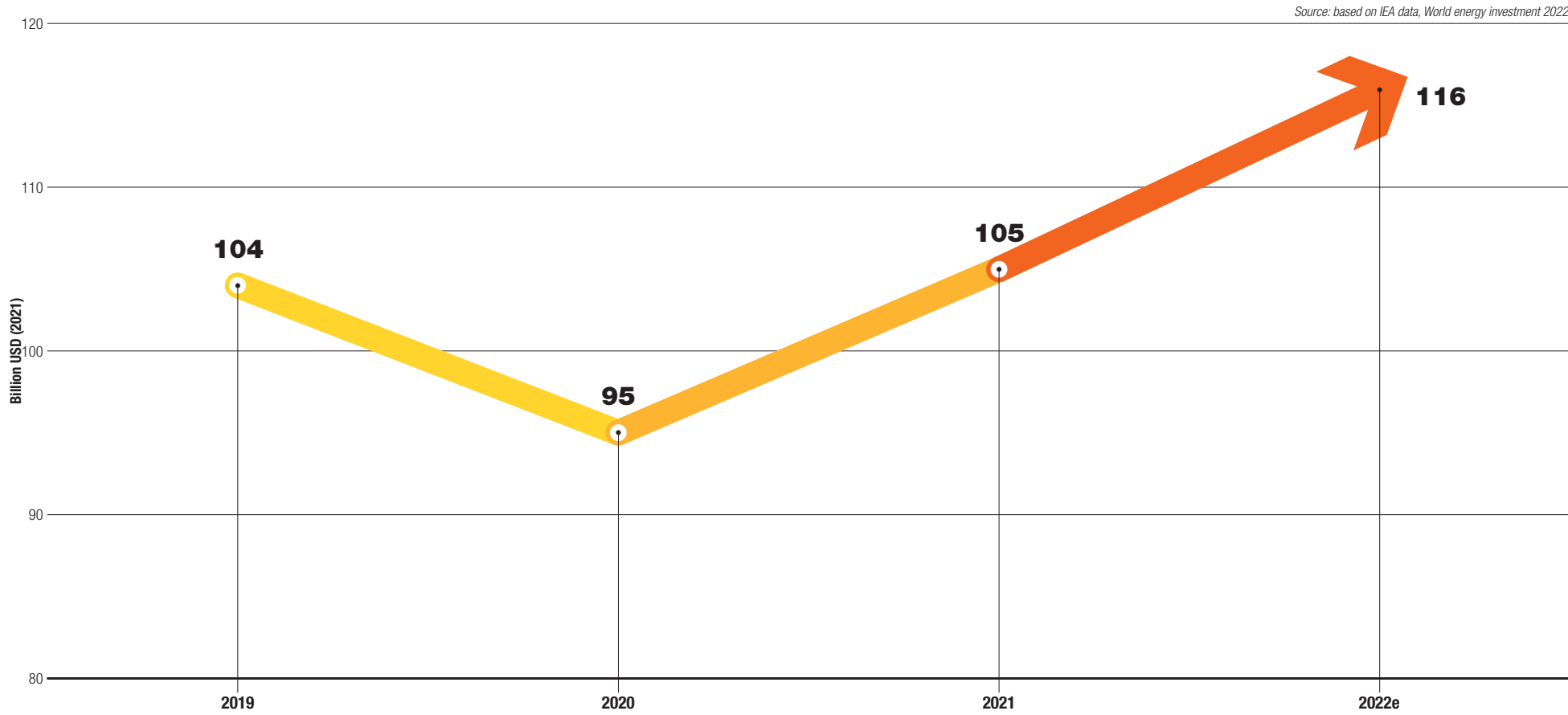
High prices are encouraging some countries to step up investments in fossil fuels, but international agencies estimate that these profits will largely be used for investments in renewable energy in light of the pledges made to reduce greenhouse gas

emissions and towards security of supply. These elements are the pillars, for example, of the REPowerEU plan of the European Union. However, in the absence of support policies, high prices remain a dangerous signal in the poorest countries.

A SEASON OF INVESTMENTS

The price increases, therefore, would seem not only to have negative effects but could initiate a season of huge investments, especially in the clean energy sector under the stimulus of high

CHANGE IN INVESTMENTS IN COAL



Investments in coal, following a decline in 2020, have increased for two consecutive years, partially replacing natural gas, with negative effects in terms of CO₂ emissions.

prices and supply shortages in European countries. World energy investments in 2022 according to estimates by the International Energy Agency (IEA) are expected to reach a total of USD 2.4 trillion, up 8 percent from USD 2.2 trillion in 2021. However, it is important to understand that nearly half of the USD 200 billion in additional investments this year will be attributable to higher costs, rather than adding additional energy supply capacity or energy savings. These cost pressures are most visible in the supply of fossil fuels, but they are also affecting clean energy technologies: after years of downward trends, the costs of solar panels and wind turbines have increased between 10 percent and 20 percent compared to 2020.

Investments in clean energy are finally starting to grow and are projected to exceed USD 1.4 trillion in 2022, accounting for nearly three-quarters of the growth in overall energy investment. The average annual growth rate of clean energy investment in the five years following the signing of the Paris Agreement in 2015 was just over 2 percent. Renewable energy, grids and storage now account for more than 80 percent of total investment in the energy sector.

Solar PV makes up nearly half of new investments in renewable energy, with spending split evenly between large-scale projects and distributed solar PV systems. The focus for wind power is shifting to offshore: while 2020 was a record year for onshore

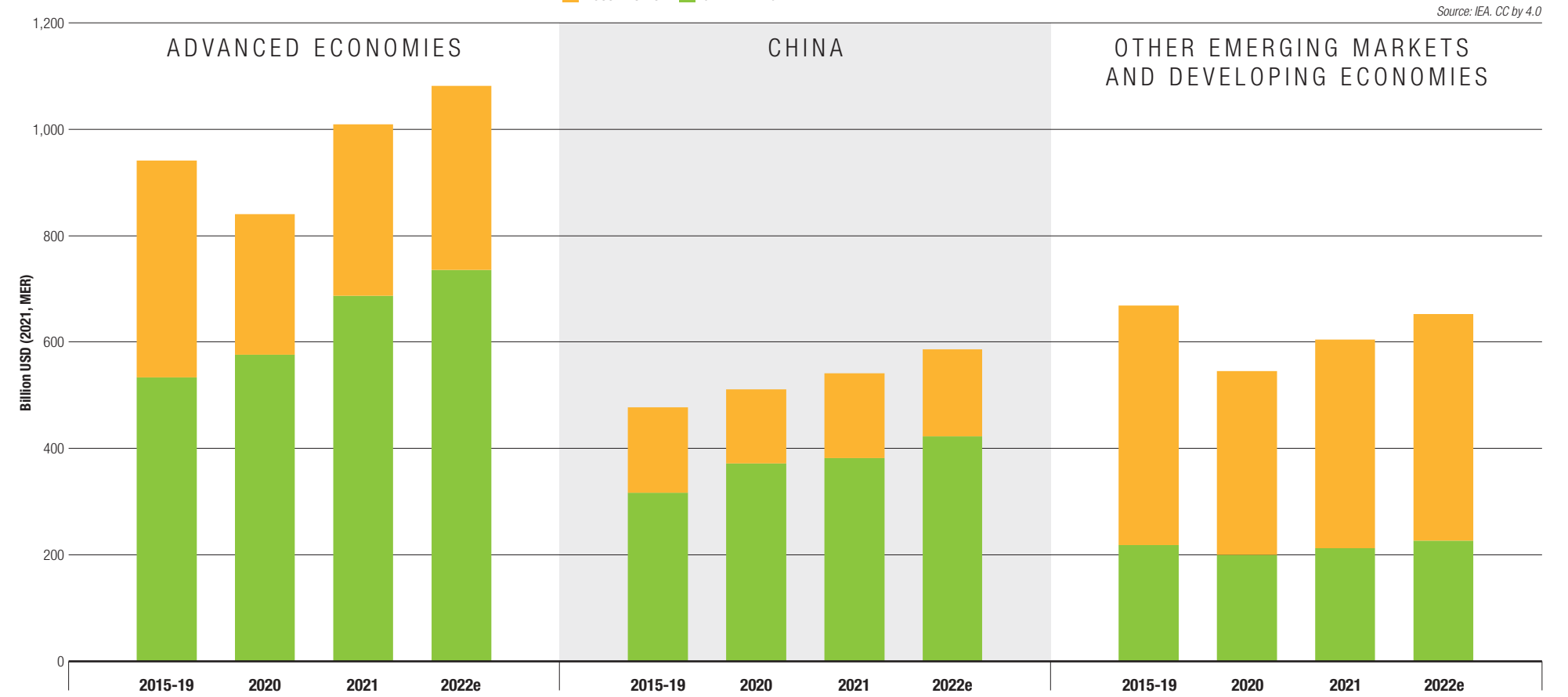
installation, 2021 was a record year for offshore, with over 20 GW commissioned and around USD 40 billion in expenditure. And while, on the one hand, the price increase seems to have dispelled the fear of the “green paradoxes”—i.e., the fact that the low operating cost of clean energy sources tends to reduce the price of energy, thus progressively limiting the incentive to invest—on the other hand, investments in renewable energy in this scenario would especially replace natural gas, but could be accompanied by an alarming increase in coal-fired plants.

The energy transition is losing gas as an immediate means of reducing CO₂ emissions: green energy and gas were both, in principle, to be used to replace coal. But after the surge in prices, renewable energy and coal are both becoming tools to reduce dependence on gas. This contrasts with the objectives of reducing emissions in the short term.

NEW TECHNOLOGIES ON THE MARKET

The combination of high prices and public support should lead to the market entry of new products and new technologies (hydrogen, batteries, CCS). More than 90 percent of the stimulus spending to support a sustainable recovery, the IEA warns, is in advanced economies. Most of the growth in investments in clean energy leaves behind developing economies; virtually all of the global increase in spending on renewables, grids and stor-

ENERGY INVESTMENTS BY REGION



age since 2020 has taken place elsewhere. More than 80 percent of EV sales are concentrated in China and Europe; over 90 percent of global public spending on EV charging infrastructure is in China, Europe and the U.S. There is a risk that today's energy crisis will push millions of people back into energy poverty: nearly 90 million people in Asia and Africa who previously had access to electricity can no longer afford to pay for their basic energy needs.

Rising prices of critical minerals—due to a combination of rising demand and concerns over shrinking supply—pose an additional threat to clean energy technologies. Russia is the world's leading producer of the palladium (43 percent) used in automobile catalytic converters and is the largest producer of class 1 nickel for batteries, producing 20 percent of global supply. Russia is also the world's second largest producer of aluminum (6 percent) and the second and fourth largest producer of cobalt and graphite, respectively. Exploration spending saw a 30 percent increase in 2021, with the U.S., Canada and Latin America driving most of the growth. This increase should help diversify future sources of supply, even if it takes time for exploration spending to translate into production growth.

Governments, companies and investors are faced with a complex situation when deciding which energy projects to support, often choosing among short-term measures that have an im-

mediate impact on prices and the amount of energy consumed and that are not automatically aligned with long-term goals.

In this scenario, investments play a key role because they can:

- Relieve pressure on consumers.
- Guide the world towards net-zero.
- Stimulate economic recovery.
- And—especially for Europe—reduce dependence on Russia.

we

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Emerging markets and developing economies, excluding China, account for two-thirds of the world's population, but their share of investments in sustainable energy is just a tiny fraction of the total.

COP27 FUTURAFRICA

by Giulia Sofia Sarno

IN SHARM EL-SHEIKH, AFRICAN COUNTRIES HAD A FUNDAMENTAL ROLE AND SPACE. IT IS NOW ESSENTIAL FOR AFRICA TO DELIVER TIMELY RESULTS IN CLIMATE FINANCE, INCLUDING MITIGATION ISSUES

COP27 WAS AN AFRICAN COP (Conference of the Parties) as it led to a series of unexpected breakthroughs for the continent. In Sharm el-Sheikh climate-vulnerable countries led the negotiations with grit and cohesion demonstrating that they can be powerful actors in shaping the agenda. African countries contributed significantly to building unity among global south actors. With a surprising and ambitious move, at the start of the negotiations the Egyptian Foreign Minister Sameh Shoukry announced that funding for loss and damage was—for the first time in history—on the summit’s agenda.

AN EVER-INCREASING NEGOTIATING POWER

The increased negotiating power of Africa and global south actors delivered an unprecedented result with the creation of the loss and damage fund, something that advanced economies stonewalled for over thirty years. Through the fund, the rich countries that hold an historical responsibility for climate change would provide financial support for the damages and losses incurred by poorer nations following climate disasters, even if key details are yet to be defined. A crucial result for Africa, which is among the worst hit regions, is that in 2022

alone extreme weather events killed at least 4000 people and affected 19 million, even though the real figures are likely to be higher as the consequences of climate disasters are often unrecorded. It is estimated that by 2050 climate impacts could annually cost African nations USD 50-billion.

Another breakthrough concerns finance. Barbados Prime Minister Mia Mottley presented the Bridgetown Initiative, which aims at transforming the global financial architecture, to address the climate crisis and support developing economies trapped in a vicious circle of financial distress and climate disasters. It stems from the recognition that the Bretton Woods institutions are not fit as a global financial system to mitigate the risks associated with climate change and maladaptation. The initiative was included in the Sharm el-Sheikh Implementation Plan, the final COP27, and it offers an unprecedented opportunity for a systemic change long-awaited by climate vulnerable countries.

Developing economies are often stuck in a vicious circle of high-debt-levels and climate vulnerability, which reinforce each other. Indebtedness reduces capacity to invest in climate resilience building, which leads to extensive damages and losses caused by extreme events and to more debt to pay for them, as

well as to higher borrowing costs due to the increased level of climate risk in the country. The COVID-19 pandemic had already led to an increase in debt distress levels across Africa, and with the outbreak of the Ukraine war and attendant rising costs the situation worsened considerably. In mid-2022, 23 African countries were in debt distress or at high risk.

The key proposals of the Bridgetown Initiative include preventing a debt crisis with emergency IMF relief and long-term concessional funding, expanding the lending capacity of multilateral development banks to developing economies by USD 1 trillion to be invested in climate change and finally developing long-term instruments that can mobilize USD 3-4 trillion for mitigation projects and reconstruction grants.

In 2023 key events will advance these discussions with significant implications for the continent: the international finance summits, including G7, G20 and multilateral development banks (MDBs) meetings, as well as the first “transitional committee” meeting to discuss the rules of the loss and damage fund ahead of COP28.

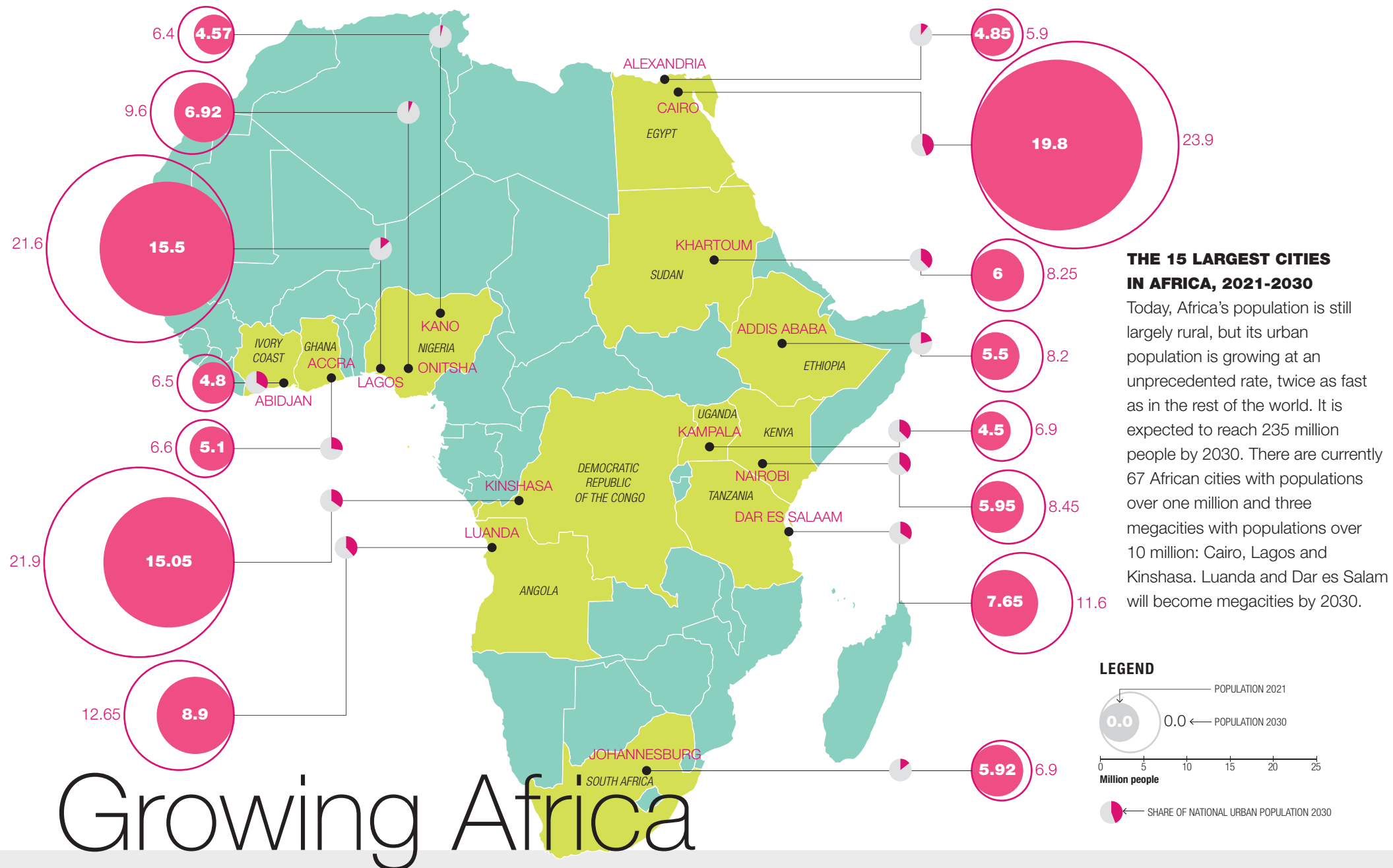
The Sharm el-Sheikh summit also kickstarted groundbreaking conversations to scale up climate finance. Only a year ago a pro-

posal from the African Group of Negotiators to scale up the target to USD 1.3 trillion per year starting from 2025 was rejected, while this year the Sharm el-Sheikh Implementation Plan states that developing countries will need USD 5.8-5.9 trillion by 2030 to implement their nationally determined contributions (NDCs). A significant shift, highlighting how inadequate the current target of USD 100 billion per year is, while the actual contribution to date falls short of USD 20 billion.

A NEW GEOPOLITICAL CONTEXT AT THE CENTER OF COP27

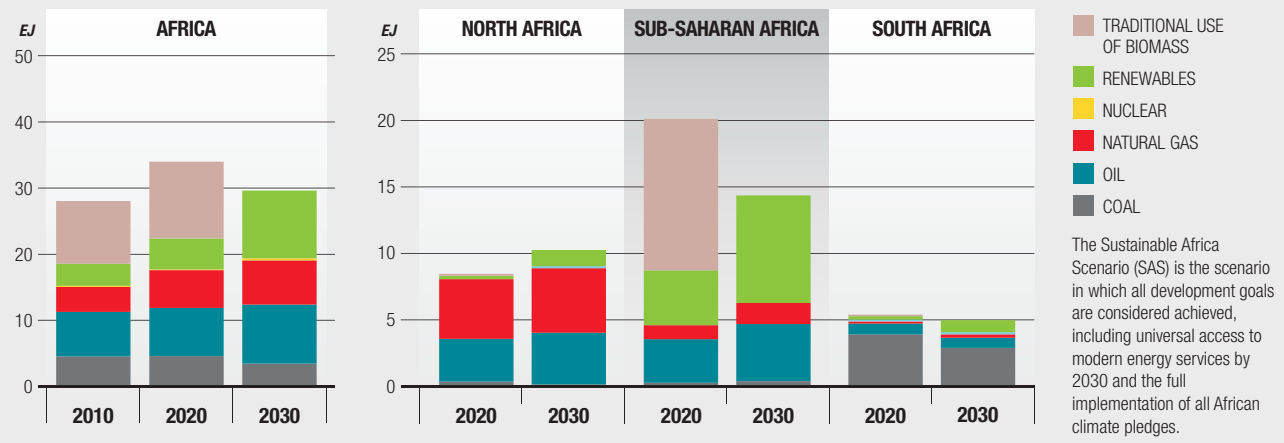
COP27 was also the first climate summit taking place in the new geopolitical context shaped by the conflict in Ukraine. As war-related energy crises unfold and Putin’s weaponization of fossil fuels undermined energy security in Europe, the EU scramble for gas raised concerns over the sustainability of diversification strategies. Africa is at the center of these discussions as several European countries turned to the continent to meet their diversified gas demand.

Even though not officially on the summit’s agenda, the future of gas in Africa was a strongly debated issue at COP27. The



Growing Africa

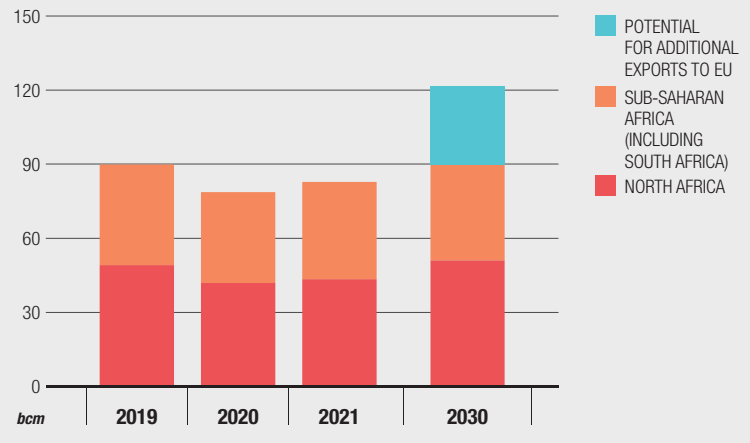
TOTAL PRIMARY ENERGY SUPPLY IN THE SAS



In the Sustainable Africa Scenario (SAS), economic and demographic growth in Africa lead to an increase in the consumption of all combustible primary materials, except for the traditional use of solid biomass and coal. Primary energy supply increases at an average annual rate of 3 percent between 2020 and 2030,

while total primary energy supply (including traditional use of solid biomass) decreases by 13 percent by 2030. Renewables account for more than three-quarters of the increase in current energy supply and will become the number one source of energy by 2030.

NATURAL GAS EXPORTS FROM AFRICA IN THE SAS



In the Sustainable Africa Scenario, if the European Union manages to stop all natural gas imports from Russia by 2030 and Africa fills 20 percent of the deficit that will be created, it will increase the demand for African gas by 30 bcm in 2030.

Source: IEA, Africa Energy Outlook

African Union reaffirmed its Common Position on Energy Access and Just Energy Transition, which states that “Africa will continue to deploy all forms of its abundant energy resources including renewable and non-renewable energy to address energy demand”. In the words of Tosi Mpanu Mpanu, lead negotiator for Congo, the priority for Africa is to address poverty and achieve universal energy access, not to save the planet. Leaders of African countries with sizable gas reserves, such as Nigeria, Senegal, Mozambique, Congo, Equatorial-Guinea, Algeria and COP27 host, Egypt, strongly support this approach advocating for natural gas as the solution for Africa’s energy needs. They also look at European efforts to move away from Russian imports as an opportunity both for business and political support for their vision. Meanwhile, several African climate groups supported the campaign “Don’t Gas Africa” and wrote an open letter to African leaders stating that a dash for gas in the continent is dangerous and short-sighted. They raise concerns over the risk of locking-in fossil fuels and creating heavy dependence on export revenues that are set to decrease as the global energy transition unfolds. They also fear that as gas will be exported the profits will remain in the hands of countries’ elites with little benefits for African people. The International Energy Agency (IEA) recently helped clarify the picture. According to the Africa Energy Outlook 2022, in order to reach universal access to modern energy by 2030 and full implementation of African climate pledges, both natural gas and renewables play an important role. The study shows that electricity can be the backbone of Africa’s future energy systems, with renewables accounting for over 80 percent of new power generation capacity added in 2030 in the Sustainable Africa Scenario. At the same time, gas will play a role in supporting industrialization in the continent, especially in the steel, cement and fertilizers sectors, as well as to displace costly oil products and complement renewables in the power sector. The available African gas reserves could supply 90 billion cubic meters (bcm) a year by 2030 and IEA calculations show that their exploitation over the next 30 years would bring the African share of global emissions to a mere 3.5 percent. Nevertheless, IEA points out that while production of gas remains important for the economic and social development of the continent, some attention must shift towards meeting domestic demand. Global efforts to accelerate the clean energy transition will reduce gas export revenues, thus the emphasis should also be on developing well-functioning infrastructures to exploit gas internally. This would allow African countries to be

less exposed to the volatility of export revenues and would ensure that gas can be used as a resource to fuel development within the continent. In addition, current market opportunities should not distract from a careful evaluation of new long-term gas projects. Advanced economies should prioritize accelerating clean solutions in Africa. The extraordinary African potential for renewables is still severely underdeveloped: the continent is home to 60 percent of the best solar resources globally, but has 1 percent of installed solar PV capacity. Renewable energy sources will be pivotal, especially for the achievement of universal energy access, as highly dispersed population in rural Sub-Saharan Africa makes off-grid technologies powered by renewables the most suitable solution for ensuring access. In addition, renewable power cost is largely fixed at the point of deployment and is not exposed to global price volatility. To achieve these objectives, investments need to be scaled up. According to the International Renewable Energy Agency (IRENA) out of USD 2.8 trillion invested in renewable globally between 2000 and 2020 only 2 percent went to Africa.



A SUITABLE SYSTEM TO SUPPORT AFRICA

Therefore, the results achieved at COP27 are critical. On the one hand the order of magnitude of climate finance is starting to shift towards the real needs of vulnerable countries. On the other hand, the reforms of the international financial architecture, especially around the issues of risk

aversion and debt management, are the key steps to create a system fit for supporting the African continent and other climate-vulnerable regions. A change in the vision and strategies of MDBs is key as it will leverage investments from the private sector in the same direction, which is critical to reach the necessary level of financial flows. Therefore, while COP27 results on loss and damage are essential for Africa, we should not lose focus on the importance of timely delivering on the mitigation pillar of climate finance as well.

We

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CITIES, NEW PROTAGONISTS

by Roberto Di Giovan Paolo



WHILE THE FAILURE OF COP27 IS CONSUMMATED IN EGYPT, AN INCREASING NUMBER OF URBAN CENTERS—AROUND 10,000 GLOBALLY TO DATE—ARE COMMITTING TO THE FIGHT AGAINST CLIMATE CHANGE, PERHAPS MORE SO THAN THE COUNTRIES TO WHICH THEY BELONG

AFTER THE FAILURE OF COP27 in Sharm El Sheikh, there is a real possibility that leadership in commitment to environmental sustainability could shift to cities, and not just megacities, given that more than ten thousand urban centers to date have committed to environmental projects to mitigate, adapt to and fight climate change.

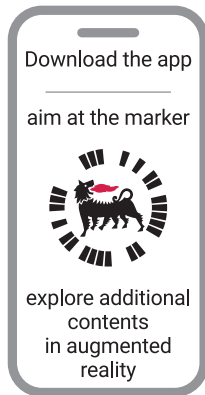
URBANIZATION FIGURES

The fact that cities can and must play an increasingly central role in relation to this and other issues can already be seen in the numerical data (the latest figures relate to 2018): 55 percent of the population (more than 4.3 billion) now live in urban areas, compared with 45 percent (3.4 billion) living in rural zones, and the forecast is that urban areas will host 68 percent of inhabitants by 2050—representing a 90 percent increase in Africa and Asia, compared to the current situation. In more detail, 529 million people, equivalent to 12.5 percent of the total, are found in megacities—or metropolises with more than 10 million people—while some 1.8 billion people, or 41.5 percent of the population live in cities with fewer than three hundred thousand inhabitants. As the beating heart of the economy, cities have also become focal points in the production of greenhouse gases, due to their energy needs, heating and cooling and private and public mobility, to name just a few essential sectors in which the “climate and biodiversity” battle is unfolding and will further develop in the future.

THE NETWORK OF ALLIANCES

With fewer geopolitical problems than states, cities have been able to construct environmental and energy plans, test their effectiveness, compare their effects, and create interstate or interregional and cross-border alliances such as the C40, a global network (with headquarters in London) that operates to develop and implement policies and programs aimed at reducing greenhouse gas emissions and the environmental harm and risks caused by climate change. By 2006, 40 cities had already

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joined the network (hence the organization's name), and it now boasts almost 100 member cities. The commitment that cities are making to the ecological and digital transition is taking on "symbolic" value (with the associated risks, of course, including the risk of propaganda), using every cultural or sporting occasion to propose, implement, recognize and "sell" an approach to climate or a technological innovation, with the Olympics at the forefront (see "Paris 2024").

Thus, between the fifth and sixth reports published by the IPCC—the institute and panel of scientists that assists the United Nations in its six-monthly assessment of the current state of the climate challenge and in April 2022 delivered the definitive report in view of COP27—the role of cities had grown so much that it required the inclusion of an entire chapter (the eighth) dedicated to the fight against climate change through the rebalancing, sustainable development and adaptation of our cities. Due account must also be taken of the fact that we are talking about campaigns for a positive climate alliance that will primarily be conducted where the phenomenon of urbanization is destined to explode, namely Africa and Asia, the continents in which the old or renewable energy demand is greater and climate change phenomena risk being associated with veritable environmental, social and humanitarian disasters.

According to the IPCC report adopted by the United Nations, the role of cities may be fundamental. In fact, they will have to experiment with the readaptation of old buildings constructed using materials and techniques of the past and choose new but groundbreaking materials and technologies for new (and necessary) homes. They will also have to ensure that there is more public transport for everyone in order to reduce private mobility and innovate with combustion materials and technologies in public vehicles, in a public-private partnership that appears to be less subject to ideology and more pragmatic in cities compared with nation states. Above all, cities will have to take on a different—even historic—dimension in relation to the territory on which the cities of the 21st century were born and established, sometimes over centuries and centuries of history. The use of the earth and its urban surfaces, the "density" of settlements, "recentering" policies for neighborhoods and specific policies for the efficient use of time and space by the citizens that inhabit them will be fundamental, because the less time it takes to travel to and from work, school or to attain a qualification, the less energy is wasted, in all regards. We are not just talking about



© MIGUEL UMANN/UNSPASH

"showcases" such as Paris marching towards the 2024 Olympics; and to be clear, by "showcase" we mean the opportunity to present progress, because the French capital has been effectively advancing along a road of change for quite some years now, especially in the field of urban mobility and the environment.

INVESTING MORE

In the European Union alone there are 855 city plans that combine "mitigation" and "adaptation," although it must be noted that their protagonists are largely bodies and structures that derive directly from the municipality. It would be necessary to invest more in direct and indirect citizen participation. More will need to be invested in the cities of Africa and Asia which, as we have seen, will experience an urban and demographic boom in the 21st and 22nd centuries. However, the figure for investments in this sector in cities currently used by the IPCC, which now stands at around USD 384 billion, is considered by the scientists on the U.N. panel to represent just 10 percent of what would be needed for cities to make a decisive contribution to the fight for environmentally sustainable development between the middle of our century and the start of the next.

But one cannot really complain about the core commitment made by cities. It may be because they have not had an immediate and sudden disappointment like the COP events of recent years; or perhaps it is simply that in cities, for better or worse, citizens are more committed and pay more attention in their daily lives; or, as some specialists have explained, it may be that in urban areas several forms of commitment—sustainability, mitigation of effects and adaptation—combine to produce a "snowball" effect on the outcomes, which brings about a positive shift towards greater effectiveness.

In fact, while COP has the spotlight for only a few days, the fight for a different environment, climate and social relations is being fought every day in each of the planet's large and small cities, and their inhabitants are at the same time both witnesses and protagonists. And we imagine that this will be much more evident in 2023 than in the past.

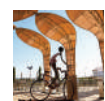
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ROBERTO DI GIOVAN PAOLO

A journalist, he has written for, among others, ANSA, *Avenire* and *Famiglia Cristiana*. He was Secretary General of the Italian Association for the Council of European Municipalities and Regions, and he is a lecturer at the University of International Studies of Rome.



Tourists at the Louvre, Paris. The French capital has been on a pathway of transition for years, especially in the field of urban mobility and the environment. Efforts in this regard have been intensifying in view of the Paris 2024 Olympics.



Sculpture of a cyclist in the park in the Green Zone at COP27, Sharm El-Sheikh, Egypt. In light of the poor results of the climate conference, climate commitment falls increasingly on the shoulders of cities.



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SHRED THE PATRIARCHY

PHOTOGALLERY

BY **CHANTAL PINZI**

📷 "I'm a visual activist. Through my photography I resist to the passing of time, I resist to oblivion, I resist to silence."

Chantal Pinzi (n.1996) is a freelance documentary photographer.

During her studies at the University of Applied Sciences, Berlin, the city in which she lives, she focused herself to documentary photography.

By using an artistic and experimental representation, her photographic works denounce, incriminate and give a voice to those who are never heard enough. Her empathic personality together with her curious perspective and her courage pushed her to travel and discover the world. She often deals with issues of resilience of fractured and marginalize communities.

Her work has been exhibited internationally and received awards at LensCulture Summer 2022, IPOY, Maghreb Photography Awards, Prize of Huffpost Italia, Contemporarte UHU, International Photography Prize Esperanza Pertusa, PassepartoutPrize and more.

"THE FUTURE BELONGS TO THOSE WHO BELIEVE IN THE BEAUTY OF THEIR DREAMS," SAID ELEANOR ROOSEVELT, AN ACTIVIST CONSIDERED ONE OF THE FIRST FEMINISTS. THEREFORE, THE FUTURE BELONGS TO THESE MOROCCAN WOMEN WHO, WITH A SIMPLE GESTURE, PEACEFULLY DEFEND THEIR RIGHTS AND CLAIM THEM FOR THEMSELVES AND THE ENTIRE FEMALE COMMUNITY, NOT ONLY IN THEIR COUNTRY BUT THROUGHOUT THE WORLD. THIS REPORTAGE TELLS THE STORIES OF MOROCCAN WOMEN SKATEBOARDERS WHO CONTINUE WITH THE SPORT DESPITE THE HARSH SOCIAL AND FAMILY REPERCUSSIONS THEY SUFFER FOR A CHOICE WHICH IS NOT ACCEPTED IN MOROCCAN SOCIETY. DESPITE MOROCCO'S INTERNATIONAL REPUTATION AS A REFORMIST AND PROGRESSIVE COUNTRY, FEMALE SOCIAL PARTICIPATION IN ECONOMICS, POLITICS AND SPORTS IS MARGINALIZED OR EVEN DENIED. SKATEBOARDING IS NO EXCEPTION: IF YOU ARE A WOMAN, YOU SHOULDN'T DO IT. YET, THESE WOMEN HAVE DECIDED TO BREAK THE UNSPOKEN RULES AND CHOOSE TO SKATE, TURNING SKATEBOARDING INTO A FORM OF RESISTANCE AGAINST THE PATRIARCHY. IN THE BIGGEST CITIES SUCH AS RABAT, CASABLANCA, MARRAKESH, ESSAOUIRA, AGADIR AS WELL AS IN SOME VILLAGES SUCH AS TAGHAZOUT AND TAROUDANT, CHANTAL DOCUMENTS HOW SUBCULTURE CAN BE AN EMANCIPATION AND AN IMPORTANT MEANS OF SOCIAL INCLUSION: IT OFFERS GIRLS THE OPPORTUNITY TO ASSERT THEIR IDENTITIES AND DEFEND THEIR RIGHTS, A STATEMENT OF COMMUNITY SPIRIT.

A portrait of Nina, 19, a skater who escaped the family house in Taroudent to follow her passion. She now lives in Essouira and is one of the most talented Moroccan skaters.





Hilarn, a skater from Casablanca, on her way to the skate park.



Mery, a female skater from Agadir, executing a flip (a trick in which the skateboard rotates around its horizontal axis) on a miniramp in one of the city's skateparks.



Hilarn skating the bowl of Skatepark Rachidi (Nevada), one of the biggest skateparks in Africa.



One of Rabat's female skaters at the top of a bowl in Hilton's park.

In the Port of Essaouira Nina is making an Ollie trick, one that involves snapping the tail of the board off a surface to bring the entire board into the air.

A close-up of Mery's hand and her board.

Quarterly
Anno XII - N. 55 December 2022
Authorization from the Court of Rome
no. 19/2008 dated 21/01/2008

Publisher: Eni spa
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Photogallery: Chantal Pinzi

Translated by: Studio Moretto Group Srl [www.smglanguages.com]

Augmented reality: Viewtoo • www.viewtoo.it

Printer: Tipografia Facciotti Srl
Vicolo Pian due Torri, 74 - 00146 Roma
www.tipografiafacciotti.com

Sent to press on december 23, 2022

Paper: Arcoset 100 grammi

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