

world energy  
**we**

NOVEMBER 2023 • N. 58

**THE TRANSITION**

**COP28 COMPLEXITY**





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edited by the Division Scenarios and Policy Options

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# ENERGY TAKES CENTER STAGE

by Rita Lofano

THE WARS IN UKRAINE AND THE MIDDLE EAST, THE RESHUFFLING OF ENERGY ROUTES, THE TRANSITION TO CLEANER ENERGIES.



TO ACHIEVE A BREAKTHROUGH, BOTH THE GULF NATIONS AND THE OIL AND GAS INDUSTRY MUST HAVE A SEAT AT THE TABLE





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**C**OP28 IN DUBAI comes amid an uncommonly tense global landscape: the existing world order no longer suits the BRICS nations, while the emergence of a new one faces hurdles amid escalating conflicts. Amid all this, the temptation is to put the climate crisis on the back burner and let energy security take center stage. The conflict in Ukraine has disrupted Europe's access to Russian pipelines, and tensions in the Middle East are set to reshape energy routes, security dynamics, and industry investments for the coming three decades. This shift is part of a process initiated years ago. The Abraham Accords, first put forward by the Trump administration and then endorsed by President Biden, marked a significant transformation in relations between Israel and Arab nations. The Hamas offensive suspended its course (Saudi Arabia was about

to sign, then reconsidered), but what matters are the long-term phenomena, so the game remains open. The Hamas massacre, and Israel's response, are not just another Gaza war; analysts agree that the region is at a turning point. But in which direction will it turn? The climate debate unfolds against a historical backdrop of rapid and profound change. Over the past three years, the world has witnessed two seismic events—the pandemic and the revelation of human vulnerability and illusions: major conflicts in Europe and the Middle East are playing out across the pipeline system that fuels Western democracies. Climate change is intricately woven into this complex narrative, actively transforming priorities, agendas, and scenarios at every level. The shift to cleaner energy demands a global commitment and

a functional international relations system, a goal that appears elusive given all these ongoing conflicts. As I write this, the war in Ukraine has lasted more than 600 days, while the conflict in the Middle East has surpassed 40 days. Effectively addressing the climate challenge amid concurrent wars calls for exceptional commitment, adaptability, and intelligence. Sultan Ahmed al-Jaber, President of COP28 and CEO of the Abu Dhabi National Oil Company (ADNOC), as well as Chairman of Masdar—a renewables company with a 24 percent stake held by ADNOC—emphasized the need for a pragmatic approach. He cautioned against succumbing to misinformation, exhorting all to discern fact from fiction, reality from fantasies, and impact from ideology. Al-Jaber highlighted the Middle East's potential, saying the region has the

resources, leadership, and experience to forge a climate-positive future marked by new industries, technologies, businesses, jobs, and hopes. The active involvement of the Gulf nations, which control some 65 percent of the world's oil reserves and contribute to 30 percent of global production — is essential to achieve a badly needed breakthrough. Acknowledging the oil and gas industry as a crucial participant in finding solutions represents a strategic decision that may prove pivotal at the Dubai Conference. While advanced Western economies grapple with ideologically-driven challenges to their transition policies, the march of reality will be the one true gauge of our effectiveness. Only time will tell if our efforts succeeded. And tell it will. **we**

In order to find solutions to the climate challenge, it is crucial that hydrocarbon-producing countries and the oil and gas industry also sit at the table. Pictured: Khalifa University, Masdar City, United Arab Emirates.





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# THE TRANSITION IS NOT A DINNER PARTY

by Francesco Gattei

NEITHER BLIND FAITH NOR DOOMSDAY FEARS WILL ENABLE THE ACHIEVEMENT DIFFICULT GOALS. INSTEAD, CONCRETE, ECONOMICALLY SENSIBLE CHOICES MUST DRIVE TRANSFORMATION. THE ONUS IS ON THE ENERGY AND INDUSTRIAL SYSTEM TO MANAGE CHANGE, NOT LEGALLY MANDATED TIMELINES

IN EARLY DECEMBER, governments again have the chance to devise a pragmatic emissions reduction plan. Past COPs featured big announcements without follow-through. Aside from the first twenty COPs, where North-South emission reduction negotiations led India, China and the United States to exclude themselves, the Paris Agreement in 2015 (COP21) started the real timer for lowering global emissions.

## THE LIMITS OF THE PARIS AGREEMENT

In Paris, 25,000 delegates and 3,000 journalists discussed saving



the planet, finding a brilliant solution to break deadlocks hampering past global agreements. The solution: self-declared national targets to be periodically monitored and intensified over time. Each country pledged to reach a common goal at different speeds.

But this technical solution of Nationally Determined Contributions had the same implementation issues encountered before:

- Commitments are non-binding, so performance depended on available solutions and transition costs.
- The prospect of shared non-compliance could soften reputational impacts.

Moreover, worsening collaboration and macroeconomics revealed two deliberately neglected conditions: pursuing economic sustainability and geopolitical security alongside the transition. The transition's pace would affect domestic competitiveness and foreign dependence, requiring balancing. Like a middle-distance race, the transition train had not just an accelerator but also abrupt braking and tactical maneuvers.

Eight years on, the NDC ploy has proven highly effective for agreement but less suited to the problem's exceptional complexity.

#### UNDERLYING DRIVERS OF EMISSIONS: THE KAYA IDENTITY

The complexities involved are captured in the Kaya Identity, an equation developed in the 1990s by Japanese energy economist Yoichi Kaya that provides a useful mathematical framework for understanding what drives emissions growth. Kaya expresses emissions as the product of:

- population,
- GDP per capita,
- energy per unit GDP
- emissions per unit energy.

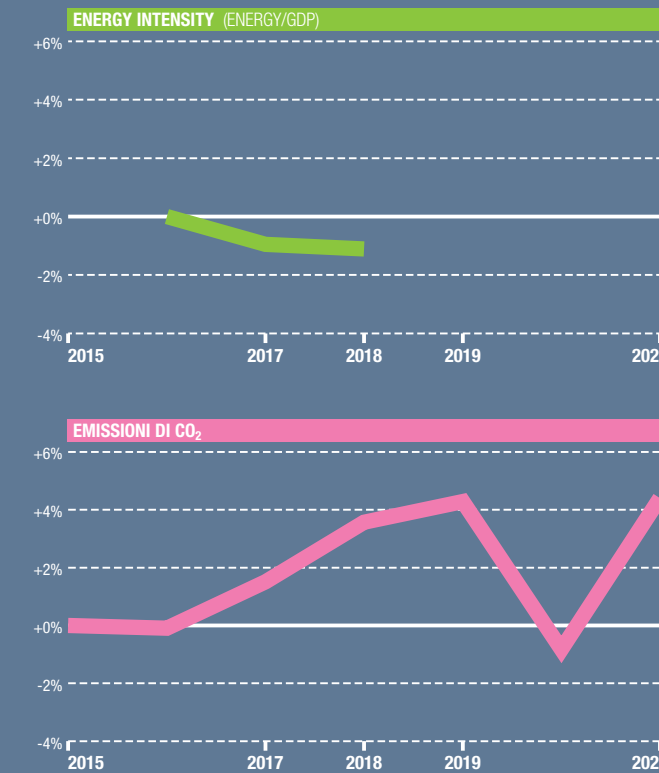
On the basis of this identity, we see that cutting absolute emissions would require rapidly increasing low-carbon energy's share of GDP. But this increase must be dramatic, otherwise it is quickly overwhelmed by rising per capita GDP and population growth.

Two of the factors in the Kaya identity grow inertially at rates that make decarbonization a losing game. World population grows by about 80 million people each year (a rate of 0.9 percent) concentrated in developing countries (where GDP growth prospects are greater) and where the energy mix is dirtier. There is little room for optimization in the energy mix in these high population-growth countries because because the low purchasing power in those countries renders sudden shifts unaffordable.

Compounding the challenge is the fact that per capita GDP is growing even faster than the population worldwide (about 2 percent per year), although at a slower trend than the past

#### DRIVERS OF CO<sub>2</sub> EMISSIONS, WORLD

Percentage variation in the four Kaya identity parameters that determine the magnitude of global carbon dioxide emissions: population, per capita income, energy intensity per unit of GDP, carbon intensity of energy systems. The graphs alongside show the trends of individual drivers.



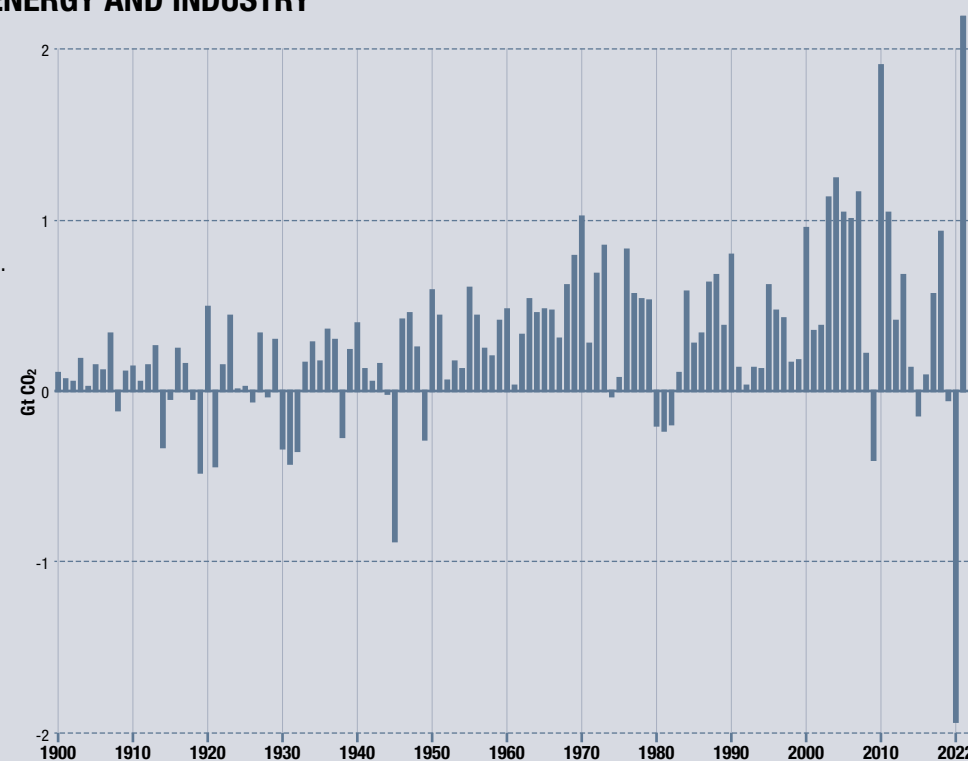
Source: Global Carbon Budget; UN; Energy Institute; EIA; World Bank; Maddison Project Database

# Kaya identity

#### EMISSIONS FROM ENERGY AND INDUSTRY

Source: IEA

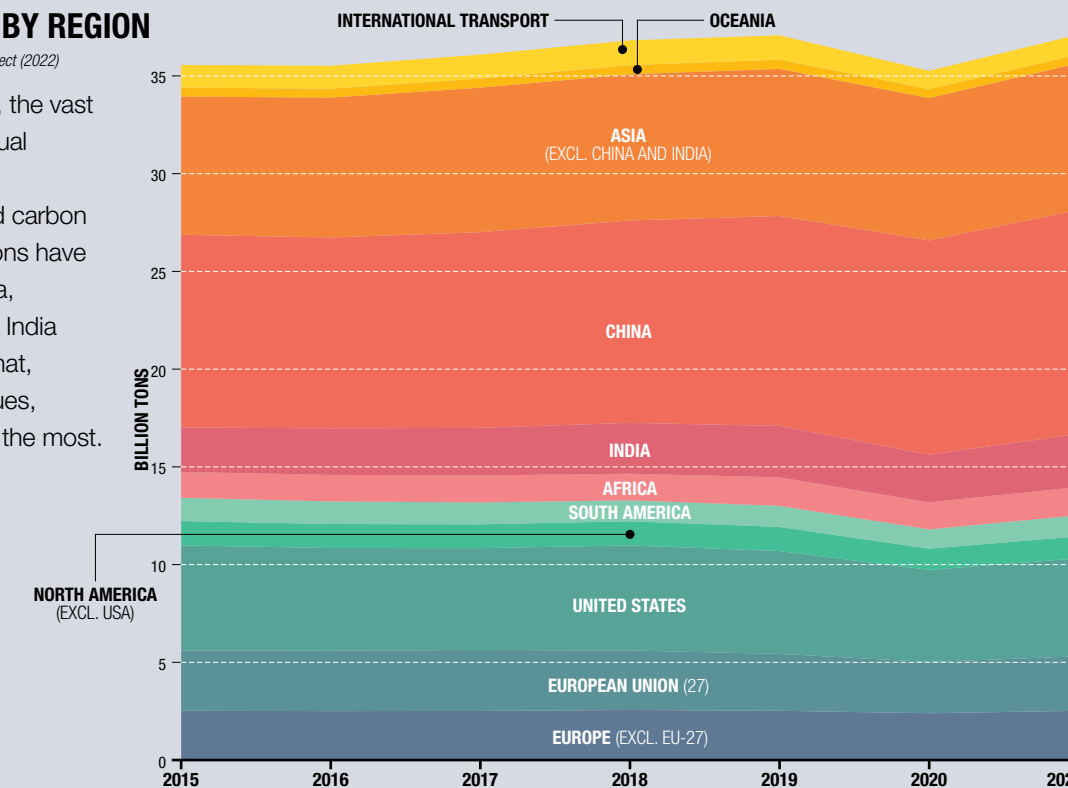
The graph shows the annual variation in global CO<sub>2</sub> emissions from energy combustion and industrial processes between 1900 and 2022. Except for the collapse recorded in 2020 due to the pandemic and some declines during severe global economic crises, the balance is always positive.



#### EMISSIONS BY REGION

Source: Global Carbon Project (2022)

In recent years, the vast majority of annual energy- and industry-related carbon dioxide emissions have come from Asia, with China and India the countries that, in absolute values, produce by far the most.



decade dominated by the Chinese boom (between 2003-2008, per capita GDP grew 3 percent annually). In this decade, the Chinese economy is slowing down but in the coming years we may see the takeoff of India, which would give new impetus to per capita GDP.

To give you a sense of scale, since the 2015 Paris conference, the 7 percent growth in population and 13 percent in per capita income are the positive factors increasing emissions that represent the mountain to climb.

But how quickly can energy consumption be changed, instead of reduced, and the mix modified to contain the increases linked to demography and development?

If history is a guide, not quickly enough. First of all, reducing the energy intensity of GDP is a slow process. Creating income through the service sector and the lower use of energy in the remaining processes (consumption, industrial and agricultural) can't happen quickly, and historically over recent decades the energy intensity of GDP has improved at an average annual rate of just 0.3 percent.

In the last seven years it has recorded an overall improvement of only 2 percent. This process requires investment in new machinery and fixed capital often of large dimensions, not only for industries but also at the level of end uses (trying to draw an analogy between the speed of the energy transition and the exponential deployment of mobile phones, as some have tried to do, is simply ridiculous).

If shifting GDP between sectors and reducing energy consumption per unit of economic activity is slow, the reduction of the emission intensity of the energy mix is not much faster: that process has generally advanced at a rate of 0.6 percent per year. And the capital expenditures required are massive: replacing coal with gas and renewables and building nuclear power stations are not things that can be done cheaply.

But renewables are also hampered by their low impact on global energy: solar and wind, in fact, still play a limited role in electricity generation, which in turn contributes only 20 percent to final energy consumption. And at the same time these technologies provide electricity intermittently, with utilization rates of 15-25 percent of their nominal capacity, allowing us to scale the mountain at an absolutely too slow pace, incomparable with the progress of the other variables.

For this reason, the benefit, from Paris to today, of the improved energy mix has been quite limited: equal to 4 percent in total (the already lesser contribution to growth from China itself results in an improved emission footprint).

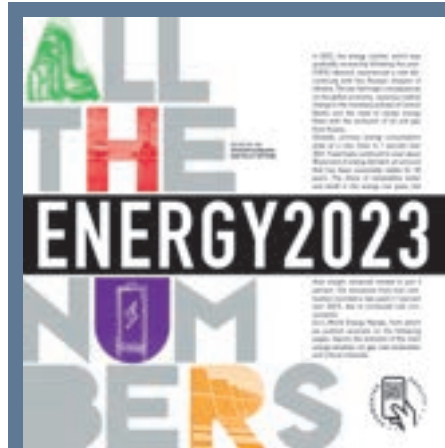
In short, energy efficiency and reducing emissions in the mix barely cover the population increase. Leaving the growth in emissions effectively determined by the change in per capita GDP.

Therefore, it is unsurprising that apart from 2020 (collapse of global GDP, reducing oil's share of the energy mix due to lock-





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In this issue of WE, we have expanded on an extract from Eni's World Energy Review 2023—created by the Scenarios and Strategic Options division—that illustrates the most significant milestones shaping the world energy system in 2022: from conventional sources to renewables and critical minerals. [FROM PAGE 87]

downs with a 5 percent drop in emissions) the Kaya equation has confirmed a consistent trend. From 34.7 billion tons of CO<sub>2</sub> in 2015 we have risen to 36.8 billion in 2022 and a new record is expected this year, with values that, with the strong growth in oil consumption, will easily exceed 37 billion.

**PROCLAMATIONS VS. REALITY**

Despite the Paris plan's obvious ineffectiveness, increasingly ambitious targets continue to be proclaimed, fossil fuels' imminent demise foretold, and bans on conventional energy and engines threatened.

To those who understand the challenge captured by the Kaya identity, proclamations of plans to accelerate decarbonization only budge the least impactful one of the many variables at play: the energy-intensity of development. Worse, they do so at the risk of hindering the availability of reliable energy.

So what is to be done? First, recognizing that our slow, expensive transition is no quick fix. The constraint is not production but changing consumption patterns and supply chains built over centuries.

Banning oil, gas or coal with ever-shorter deadlines can easily backfire by raising costs of steel, plastics and glass vital for turbines, panels, logistics and mining. Inflation also lifts interest rates, impacting capital costs. Announcements destabilize in-

vestment and resources that would aid transition.

Excluding options like gas or nuclear also slows progress by concentrating limited resources on a narrow section of the plan. Carbon capture is the key to decarbonize the industrial activities needed for new energy. Natural offsets like plants offer the most scalable, affordable means of buying time for an economically sustainable transition.

In the end, neither blind faith nor doomsday fears will enable us to reach difficult goals. Instead, concrete, economically sensible choices must drive transformation. Legally mandated timelines as such do little to address the problem. The onus is on the energy and industrial systems to manage a difficult change.

**we**

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THE WORLD SHOULD REALIZE THAT INVESTMENTS IN CLIMATE MITIGATION AND ADAPTATION ARE AS ESSENTIAL AS DEFENSE, EDUCATION AND HEALTHCARE. THERE IS NO ALTERNATIVE

# THE HUNT FOR

by Moisés Naim

Davenport, USA. Mississippi flood.

© KELLY SIKKEMA/UNSPLASH



# 2.4

TRILLION DOLLARS. A million times 2.4 million dollars. A two, a four, and then eleven zeros. Anyway you slice it, it's an unreasonable number. It is also the sum that the Independent High-Level Expert Group on Climate Finance has arrived at as the overall investment that will be needed for the world to blunt the worst impacts of climate change. Now here's the daunting part: this wouldn't be a one-time expense. From 2030, this is the amount that will need to be in-

vested year after year, every year, to keep the world's climate relatively tolerable in the face of climate change. It's a sum we can barely begin to visualize. Stacked in \$100 bills, 2.4 trillion dollars would make a tower over 4,900 kilometers high, which would put the top of the stack in low earth orbit. If you spent a million dollars every day, it would take you 6,000 years to spend 2.4 trillion. We're talking about a sum in the rough vicinity of the entire GDP of France. Americans have a good idiom to describe the staggered feeling





El Calafate, Argentine Patagonia: melting of the Perito Moreno glacier.

**THE ASYMMETRY AT THE HEART OF CLIMATE FINANCE**

In the case of climate finance, the challenge is made even more daunting by the mismatch between who will have to pay and where much of the investment will need to be made. Much of the adaptation spending will be needed to keep developing countries in the global South inhabitable, while much of the outlay will have to come from lenders in the developed countries. To call this politically tricky is an understatement. So far, the developed countries have struggled to raise even \$100 billion to finance needed investments in the global South — a scant 4% of the figure needed.

It's become a bit of a cliché to say that the institutions the world has are not well suited to meet the kinds of challenges it faces, and this cliché is never more vividly true than when dealing with the challenges of climate finance. The UN's Conference of Parties (COP) process, with its built-in veto for every single country, is almost comically ill-suited to the challenge: a process that cannot move faster than Saudi Arabia wants to go is obviously going to fail to mobilize the resources the world needs to mobilize to adapt to its new climate reality. And yet the consequences of inaction are too dire to even begin to countenance. Already, developed world borders are creaking with the strain of migrants fleeing impossible living

such numbers provoke: sticker shock. Initially coined to describe the reactions of car buyers after they saw prices displayed on the stickers dealers put on the windows of new cars, sticker shock captures the vertigo you feel when we realize you don't know how to pay for an investment you absolutely cannot do without.

© AGUSTIN LAUTROUNSPASH

Namibia, desertification goes on and on.

conditions in their own countries. From Lampedusa to Ciudad Juárez, developed countries find themselves in the uncomfortable position of modern day King Knuts, vainly ordering the tide to recede. Today's migrant headaches are a mere foretaste of what is to come if climate challenges aren't met on the scale required. Scientific models for the next fifty years already predict the kinds of calamities that threaten to leave broad swathes of the tropical world effectively uninhabitable. Millions would die, but millions more would flee, destabilizing recipient countries in ways we can hardly begin to conceive of today. And it's at this point that we begin to appreciate that terrifying 2.4 trillion figure in a different light. It's a crazy number, yes, but perhaps not entirely unattainable. It is less than half the 6 trillion dollars the world spends on education each year, not even a third of the 9 trillion we spend on health care. It is, in fact, roughly on a par with the 2.2 trillion the world spent on defense last year. These are all very big sums, no doubt, but they're also the kinds of sums humanity has already demonstrated it can mobilize to fund its highest priorities. In the coming years, the world will need to wake up to the new reality that climate mitigation and adaptation are as indispensable as defense, education and health care. Once we fully grasp

that these are investments that we have no alternative but to make, we'll get over the sticker shock and get down to the hard work of actually raising the financing the world needs to face up to climate change.

**we**

**MOISÉS NAIM**

He is a Distinguished Fellow at the Carnegie Endowment for International Peace in Washington, D.C. and a founding member of WE's editorial board. His most recent book is *The Revenge of Power: How Autocrats are Reinventing Politics for the 21st Century*.

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THE UNITED STATES: ALONG A

# BUMPY ROAD

by Andrew Spannaus

THE MOST FEASIBLE “MIDDLE GROUND” ON CLIMATE IS, IN FACT, PURSUING DECARBONIZATION WHILE ENSURING THAT THE COUNTRY REMAINS A LEADER IN ENERGY PRODUCTION FROM MULTIPLE SOURCES. THIS POSITION REFLECTS THE DOUBTS AMONG THE POPULATION AND THE VARIOUS ECONOMIC INTERESTS



# US Energy numbers

**W**HEN IT COMES to tackling climate change, the path that the United States will take in the coming years is, to say the least, uncertain. While the Biden administration has brought the U.S. back into the Paris Agreement and taken tangible steps to promote the reduction of CO<sub>2</sub> emissions, most Republicans continue to adamantly reject cutting fossil fuel production as a goal and instead pledge to tirelessly dismantle the green policies championed in recent years. This dynamic leaves even those dedicated to upholding environmental pledges grappling with the peculiarities of the U.S. economy and the ongoing political discourse.

## A DEMOCRAT IN THE WHITE HOUSE: HOPES AND CONCRETE MEASURES

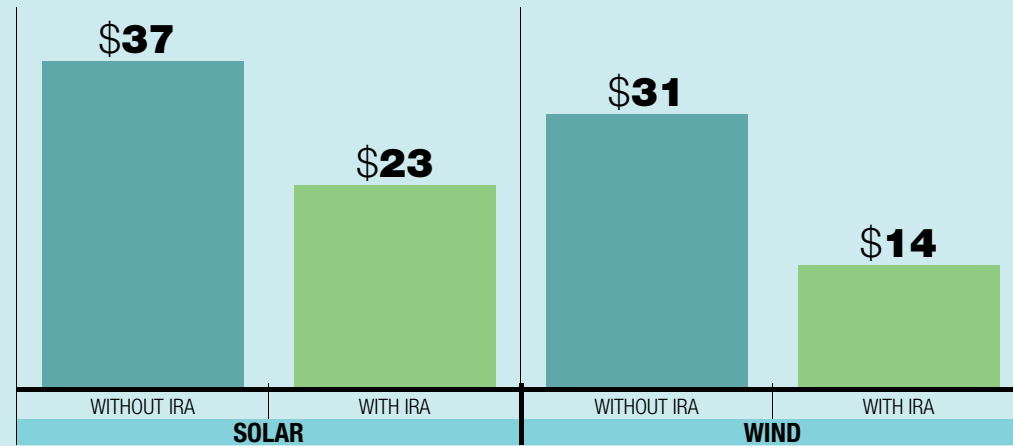
Organizations dedicated to speeding up the energy transition towards net zero carbon emissions by 2050 certainly welcomed the election of Joe Biden. In the 2020 election campaign, Biden was unequivocal, stating that climate change is “the main problem facing humanity” and promising to initiate a phase of national change towards renewables.

While this message resonates with young people and Democratic voters in general, the widespread support among Americans for joining international agreements and developing renewables doesn’t seamlessly translate into equally positive views on specific measures. Less than one-third of Americans, for instance, believe that fossil fuels should be completely eliminated, and support for transitioning to electric vehicles is also clearly in the minority.

This poses an initial challenge for anyone advocating for adopting Paris Agreement targets and COP-discussed measures: how to pursue emission reductions in an environment highly polarized on the issue, where many politicians and voters would immediately oppose such measures. The way forward involves public incentives and market-based mechanisms, avoiding excessive reliance on constraints imposed through government regulation, which, while effective in the short term, can be easily changed by a future administration. Without the possibility of reaching consensus in Congress to enact shared and more

## IRA AND ELECTRICITY PRODUCTION COSTS COMPARED

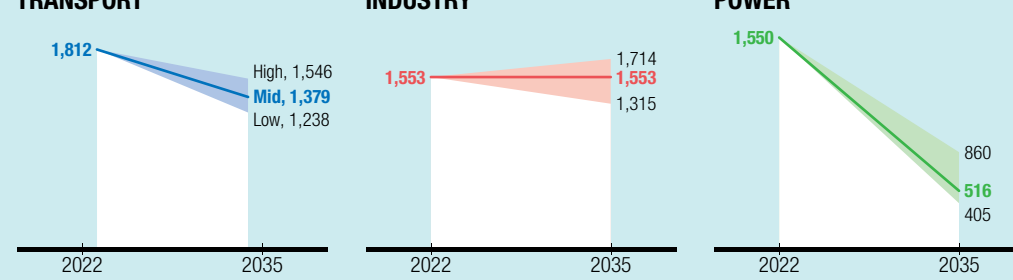
[2022 US DOLLARS PER MEGAWATT-HOUR] *Source: Rhodium Group*



The approval of the IRA has largely addressed the problem of cost competitiveness for many clean technologies in the energy sector, accelerating the current price trend for renewables and substantially reducing the levelized cost of generation in these facilities. The graph shows a comparison of levelized costs of electricity generated by solar and wind power plants built in 2022.

## US: POLLUTANT EMISSIONS BY SECTOR

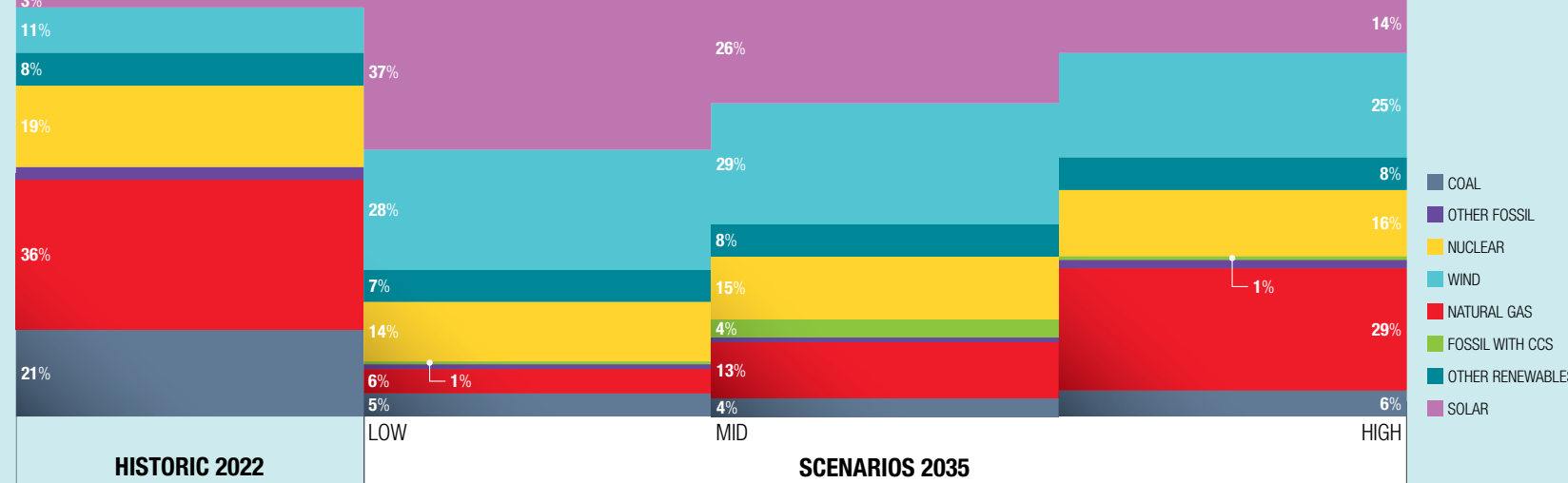
[NET MILLION METRIC TONS (mmt) OF CO<sub>2</sub>e] *Source: Rhodium Group*



With the IRA in place, emissions will fall 45-74 percent from today’s levels by 2035 in the energy sector and 15-32 percent from today’s levels by 2035 in the transportation sector.

## ENERGY PRODUCTION BY SOURCE

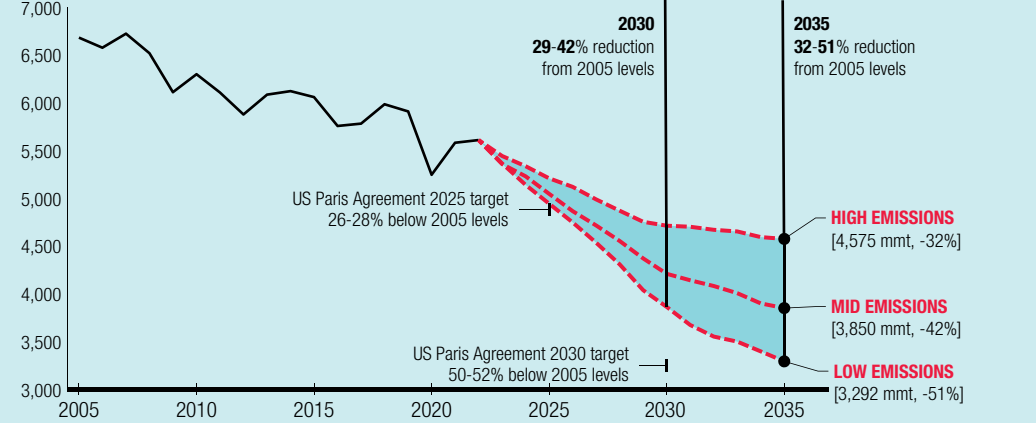
[PERCENT OF TOTAL GENERATION] *Source: Rhodium Group*



The energy sector will look very different in 2035 from how it looks today. In 2022, fossil-fueled power plants accounted for just under 60 percent of total electricity generation, with nuclear, wind, solar and other renewables making up the remaining 40 percent. Even in the 2035 high-emission scenario, this situation reverses, with zero-emission sources powering 63 percent of the grid, including 39 percent of energy from wind and solar alone.

## US: POLLUTANT EMISSIONS UNDER CURRENT POLICY

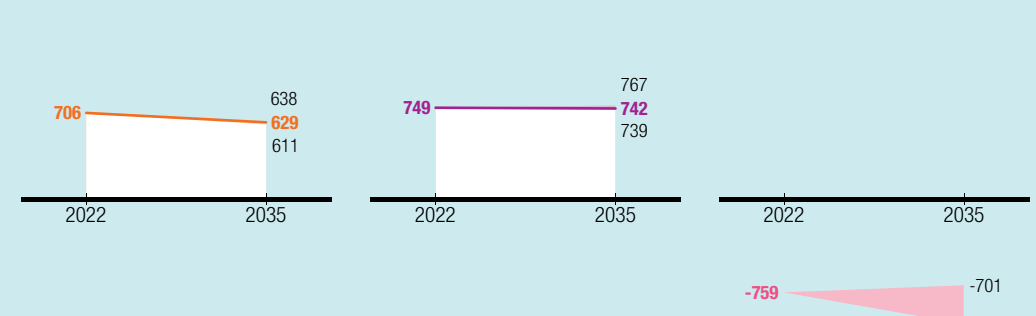
[NET MILLION METRIC TONS (mmt) OF CO<sub>2</sub>e] *Source: Rhodium Group*



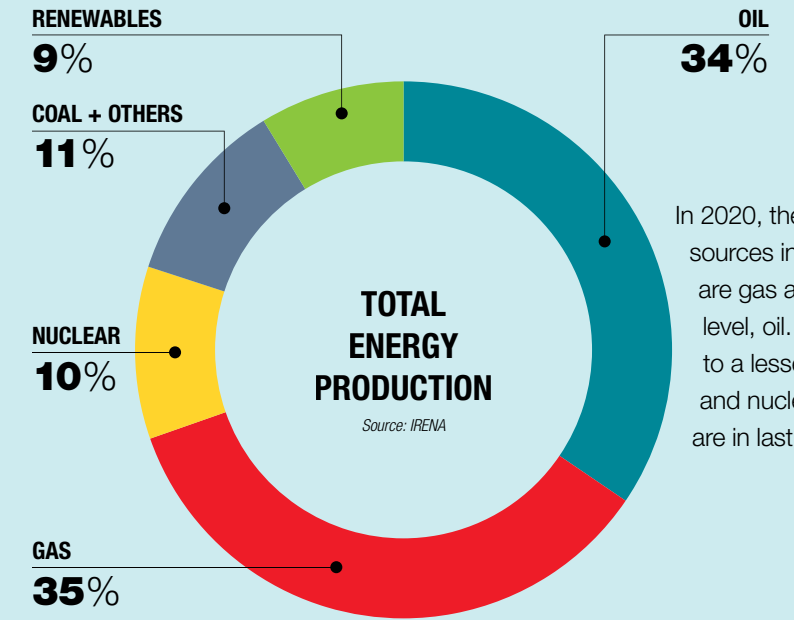
The set of policies currently in place as of June 2023 will bring US emissions to 32-51 percent below 2005 levels by 2035. Along the way, the United States will achieve a 29-42 percent reduction in greenhouse gas emissions by 2030—a significant departure from the current situation.

## BUILDINGS, AGRICULTURE AND WASTE, CARBON REMOVAL

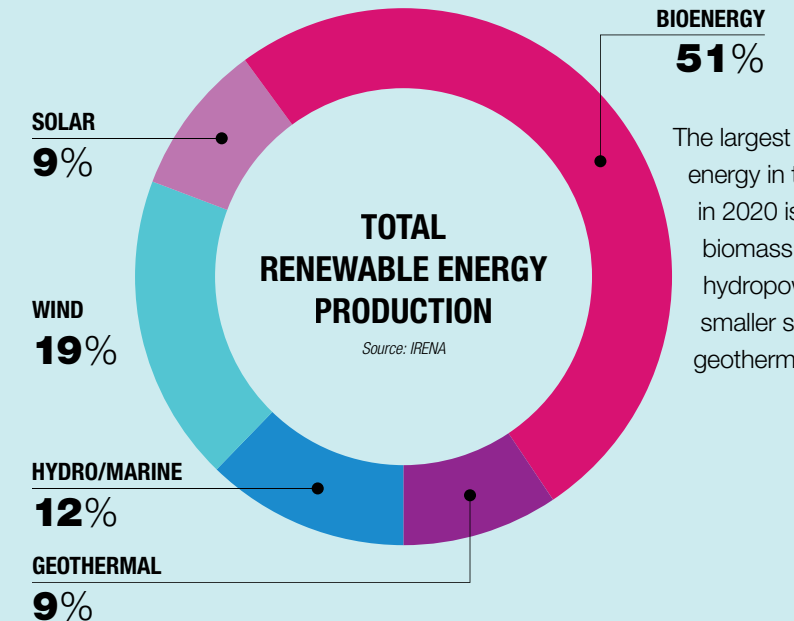
[NET MILLION METRIC TONS (mmt) OF CO<sub>2</sub>e] *Source: Rhodium Group*



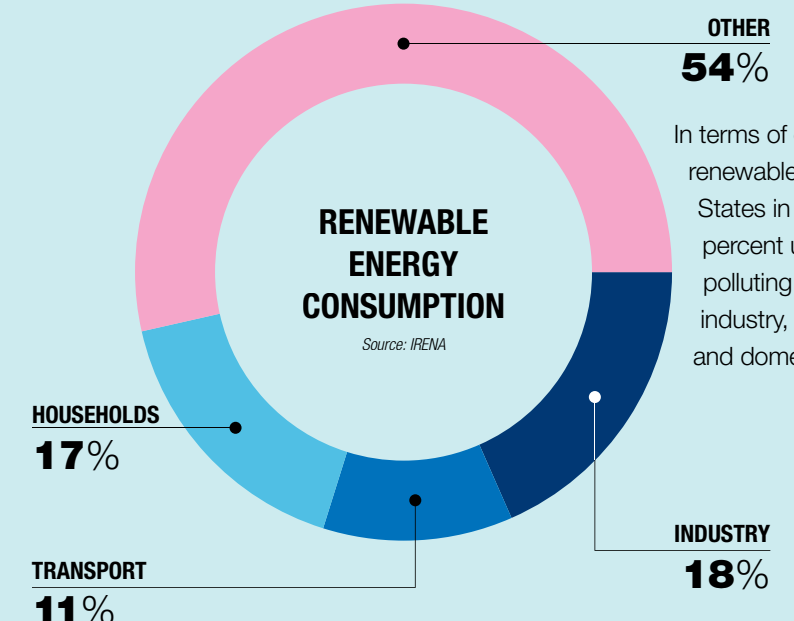
Declines will be more modest in the construction sector, falling 10-14 percent from today’s levels by 2035, and will be essentially stable in the agriculture and waste sectors.



In 2020, the most widely used sources in the US energy mix are gas and, almost at the same level, oil. This is followed to a lesser extent by coal and nuclear power. Renewables are in last place.



The largest share of renewable energy in the United States in 2020 is produced from biomass. Far behind are wind, hydropower, and, in even smaller shares, solar and geothermal.



In terms of consumption, renewable energy in the United States in 2020 is only 50 percent used by the most polluting sectors, namely industry, transportation and domestic use.





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The Crescent Dunes Solar Energy Project is a solar thermal power project with an installed capacity of 110 megawatts and 1.1 gigawatt hours of energy storage. It is located near Tonopah, about 190 miles northwest of Las Vegas.

enduring laws, support for environmental causes will continue to oscillate between Democrats and Republicans in tandem with general election results.

Joe Biden's strategy has been to frame the energy transition as an opportunity for the country, a chance to generate millions of new jobs in the most innovative sectors. This perspective aligns with what U.S. institutions see as the real priority for the coming decades: winning the strategic competition with China, entailing maintaining—or regaining, in some cases—leadership in technology sectors crucial to the future.

The restoration of industrial policy, after decades of free-market dominance, has defined the work of the Biden administration. This direction had, in fact, been initiated by his predecessor, though neither would readily admit it. Three pivotal factors prompted the U.S. to change course. The first was political populism, fueled by the discontent of citizens who felt left behind by the economic shifts of globalization, including the relocation of millions of jobs. The second was the pandemic, starkly highlighting the risks of thinking that production loca-

tion doesn't matter. Amid fragmented value chains and loss of manufacturing capacity, many Western countries acknowledged the fragility of a system that had favored services over manufacturing. Finally, there is the aforementioned strategic competition with China, compelling political leaders to contemplate how to avoid falling too far behind a rapidly growing power that doesn't share the Western concept of global rules.

#### **ENVIRONMENTAL POLICIES AND PREPARED INCENTIVES**

Since Joe Biden's victory, a slew of government spending packages has hit the scene. One of the standouts, in terms of environmental policy, is the Inflation Reduction Act (IRA) of 2022. Right from the name, you can see the need to present climate measures indirectly, tied to another, seemingly more urgent policy goal — in this case, combating the rise in inflation following pandemic disruptions.

In reality, though, the IRA is predominantly a climate law, funneling hundreds of billions of dollars into investments and tax

credits for clean energy and emissions reductions. This covers everything from wind and solar to carbon capture and hydrogen development. There's a keen focus on incentives to shift power generation, the sector best positioned to slash pollutant emissions. Additionally, there are new rules on energy efficiency in buildings and programs geared towards getting young people involved in environmental jobs.

Describing the strategy, Michael Mehling from MIT's Center for Energy and Environmental Policy Research said, "what we're doing is throwing a lot of money at clean technology, and hoping medium-, long-term it will crowd out a lot of the dirty stuff." It takes time, but heeds the political imperative to use carrots rather than sticks. Notably, the IRA imposes no obligation to cut emissions on fossil fuel plants and doesn't seek to impact the price of coal.

Biden had to backtrack from his initial goals to secure congressional approval, not due to Republican opposition but to win over Democratic Senator Joe Manchin from West Virginia. A centrist from a conservative state, Manchin insisted on new oil

and gas offshore leases in exchange for supporting wind projects. The White House also had to accept a significant cut in total investment due to opposition against excessive government spending amid rising prices.

This "middle ground" on climate reflects the most viable path for the United States: pushing decarbonization through incentives for new technologies while ensuring the country remains a leader in energy production from diverse sources. It's not just a political reality in Washington; it mirrors the widespread doubts among the population and various economic interests beyond the halls of power.

Beyond the influence of energy lobbies, there's a broad debate on how to address the environmental issue. Positions range from dismissing the problem entirely (even denying pollution issues) to strategizing on mitigating an apparently unstoppable global process. Some advocate for technological solutions outside the favor of climate activists, like nuclear power. Interestingly, nuclear is one of the solutions funded in the IRA, rekindling interest among a segment of the democratic world.



## HARD TO IMAGINE A MORE AGGRESSIVE POLICY

From the perspective of the international agreements and targets set to be discussed at COP28, U.S. progress toward net-zero emissions might appear inadequate. Achieving a 50% reduction in emissions by 2035 seems improbable. Nonetheless, it's crucial to recognize that, despite domestic challenges, the overall trajectory is positive: emissions continue to decline, both on a per capita and absolute level.

Considering the political realities, it's challenging to envision a more aggressive path. To gauge potential future scenarios, one need only glance at the plan drafted by conservative groups under the Heritage Foundation's Project 25, anticipating a possible return of Republicans to the White House in 2025. The energy segment of the plan aims to impede renewable energy development, shut down related offices in the Department of Energy, relax pollution limits, and diminish the authority of the federal environmental agency, the EPA.

Project director Paul Dans emphasized, "We are not tinkering at the edges. We are writing a battle plan and we are marshaling our forces." The climate issue is poised to play a role in the election campaign, portraying the push for new energy technologies as "elitist." This narrative connects climate to the culture wars, framing progressive ideas as part of a globalist vision intended to dismantle traditional values.

While the Biden administration will persist in seeking ways to incentivize technologies that reduce CO<sub>2</sub> emissions, the transformative change advocated by those fearing imminent climate catastrophe— a perspective not widely shared in the United States— is nearly impossible to achieve right now. Instead, the American approach to the environment is likely to rely more on new technology than on regulatory restrictions that, many fear, could also stifle economic growth. The strategy is to capitalize on the momentum for new industrial policies, intertwining cleaner technologies with those necessary to keep the United States, alongside its Western allies, at the forefront of the technological change driving the economic transformations in the coming decades.

**we**

### ANDREW SPANNAUS

American journalist and analyst working in Italy and internationally. He specializes in global strategic relations, starting with the role of the United States. He has written several books, the latest in Italian on 'Post-Global America' (L'America post-globale: Trump, il coronavirus e il futuro, Mimesis).

Intensive installation of a wind power plant near Palm Spring, California.



© SENIOR AIRMAN MEGAN FLOYD/U.S. NATIONAL GUARD

Aerial view from a US National Guard helicopter of the flooding caused by Hurricane Florence in 2018.

In total, the hurricane caused at least \$24 billion in damage, much of it due to flooding in the Carolinas, and resulted in the confirmed deaths of 52 people.



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# CHINESE PRACTICALISM

by Giulia Pompili

ENERGY SECURITY IS CENTRAL TO CHINA'S STRATEGY FOR THE NEXT FIVE YEARS. AT COP28, CHINA WILL SEEK TO AVOID CAPS ON COAL CONSUMPTION BY TOUTING ITS AMBITIOUS GOAL TO INCREASE THE SHARE OF NON-FOSSIL FUEL POWER GENERATION TO 39 PERCENT BY 2025

**A**T THE THIRD BELT and Road Forum held in Beijing on October 17 and 18, COP28 President Sultan Al Jaber commended China for “driving green growth not just in Belt and Road countries but around the world.” Al Jaber, the special envoy of the United Arab Emirates, attended the forum, a crucial political event marking the tenth anniversary of China’s Belt and Road initiative—a global influence project by the world’s largest emitter of greenhouse gases.

The first two editions of the Belt and Road Forum witnessed significant international attendance. In 2017, leaders from across the globe, including Europe, participated. The then Italian Prime Minister Paolo Gentiloni was among them. Two years later, despite emerging concerns about distortions in the Chinese project—particularly in developing countries where the debt trap and coercion by China posed political risks—Italy, led by Prime Minister Giuseppe Conte, joined the Belt and Road initiative. However, Western participation in the forum began declining significantly as early as four years ago.

The traditional family photo at the Third Belt and Road Forum in October captures the current alliances and partnerships at the heart of the People’s Republic of China’s strategy. Alongside leader Xi Jinping stood President Vladimir Putin of the



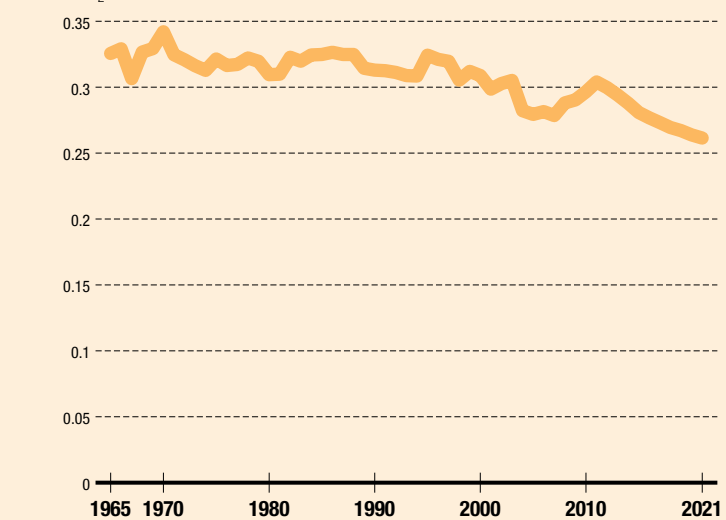
# China energy

Source: Global Carbon Budget (2022), Energy Institute - Statistical Review of World Energy (2023), U.S. Energy Information Administration (2023)



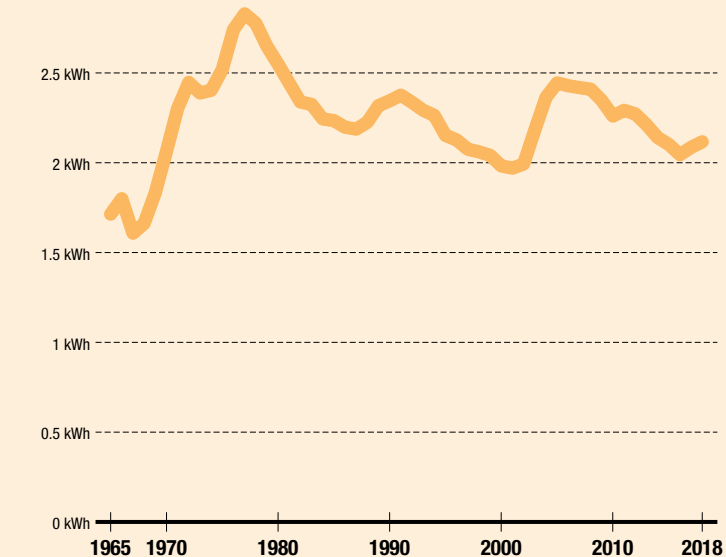
## CARBON INTENSITY OF ENERGY PRODUCTION

[kg of CO<sub>2</sub> per kilowatt-hour]

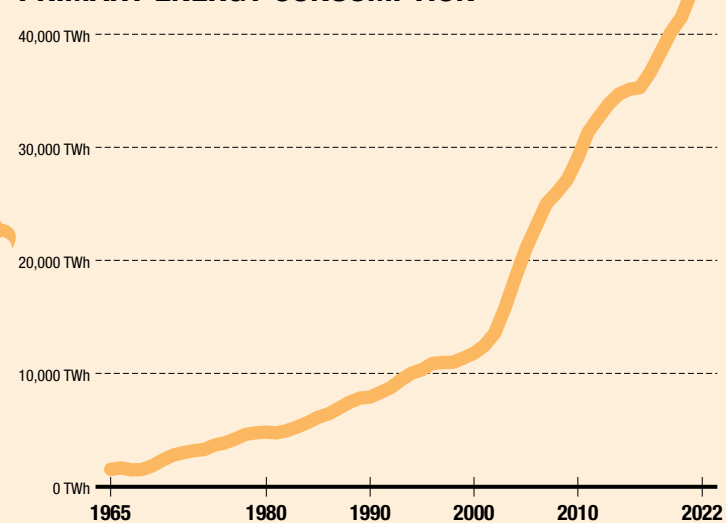


## ENERGY INTENSITY

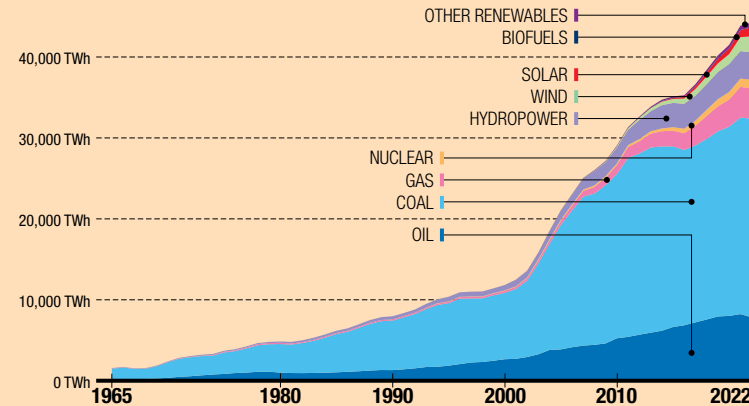
[primary energy consumption per unit of GDP kWh/\$]



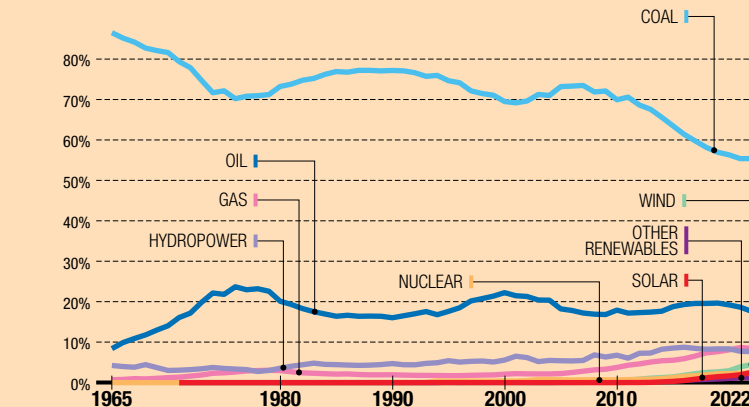
## PRIMARY ENERGY CONSUMPTION



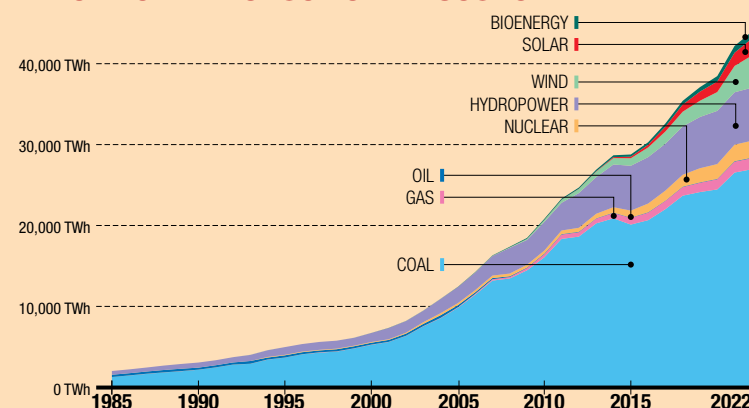
## ENERGY CONSUMPTION BY SOURCE



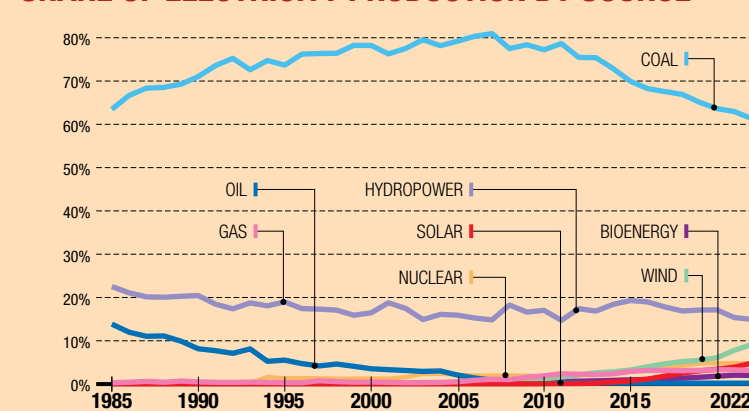
## SHARE OF ENERGY CONSUMPTION BY SOURCE



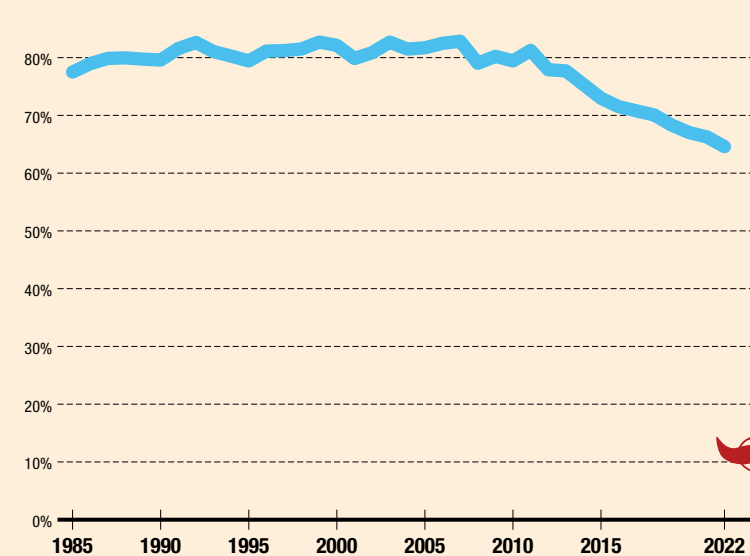
## ELECTRICITY PRODUCTION BY SOURCE



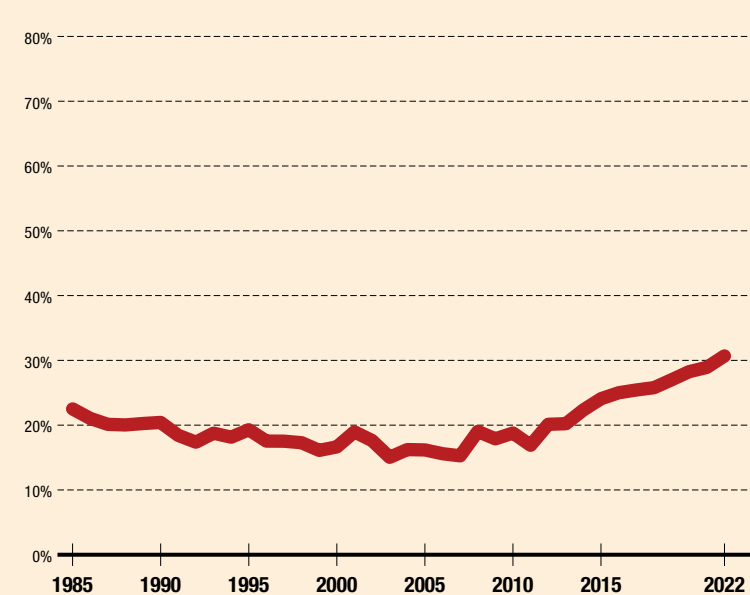
## SHARE OF ELECTRICITY PRODUCTION BY SOURCE



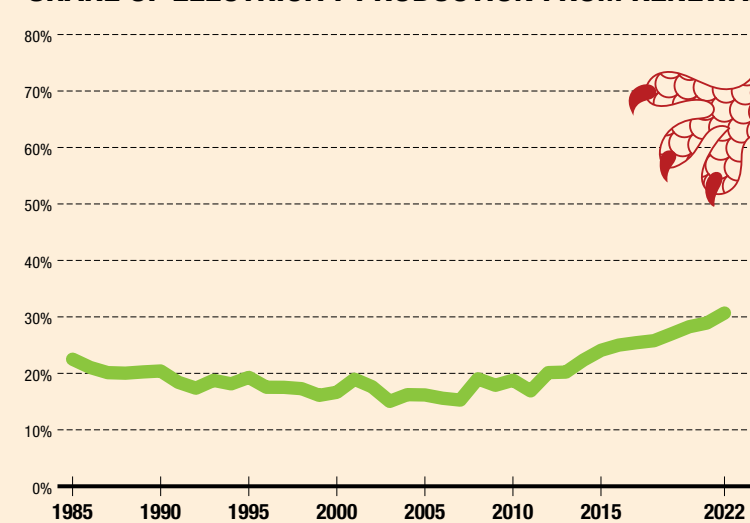
## SHARE OF ELECTRICITY PRODUCTION FROM FOSSIL FUELS



## SHARE OF ELECTRICITY FROM LOW-CARBON SOURCES



## SHARE OF ELECTRICITY PRODUCTION FROM RENEWABLES



Russian Federation, making his first trip to China since Russia's invasion of Ukraine. The sole European Union representative was Hungarian Prime Minister Viktor Orban, though Serbian President Aleksander Vucic also featured prominently. The photo included representatives from almost all Central Asian countries, notably Xi's ally, Kazakh President Kassym-Jomart Tokayev. Among other attendees were Egyptian Prime Minister Mostafa Madbouly, Argentine President Alberto Fernandez, Chilean President Gabriel Boric, and Sa'ud bin Saqr al-Qasimi, a member of the UAE's Federal Supreme Council.

## THE FIVE-YEAR PLAN 2021-2025

In his keynote address at the most recent Chinese Communist Party Congress in October 2022, leader Xi Jinping emphasized the imperative for China to enhance "systems for energy production, supply, storage, and marketing to ensure energy security" for the country. To achieve this goal, Xi seeks allies and partners. In March, the National Energy Administration, a crucial component of China's State Council, unveiled a five-year plan outlining industry development from 2021 to 2025. The plan aims to expedite the development of a "modern and resilient energy system," setting quantitative targets for energy production, particularly through oil, gas, and the indispensable role of coal and coal-fired power, with no cap on consumption. However, the plan delineates two specific targets: one for non-fossil energy production, aiming to reach 39 percent of total energy production by 2025, and another for electricity, targeting approximately 30 percent of total consumption by the same year. Notably, the document hints at the urgent need for leadership to ramp up domestic energy production, not solely relying on imports and storage. Observers, including former US Deputy National Security Advisor Matthew Pottinger, suggest that this may indicate China's preparation for a crisis, war, isolation, or sanctions, emphasizing the need for a resilient energy survival line.

Sultan Al Jaber, serving as both the president of this year's COP and as Emirati Minister of Industry and Technology while also leading Abu Dhabi's national oil company, ADNOC, plays the



kind of double role that Xi Jinping's energy strategy mirrors. Considering China's image as the second-largest global economy and one committed to fighting climate change through green policies aiming at energy transition, its success in diplomatic ties with Gulf countries is notable. China's efforts to bolster its energy security have the effect of supporting Vladimir Putin's war against Ukraine, but that does not detract its achievements. Chinese companies, including China National Offshore Oil Corporation (CNOOC Group), China Petrochemical Corporation (Sinopec Group), and China National Petroleum Corporation (CNPC), have been listed as "international war sponsors" by the Ukrainian National Agency for the Prevention of Corruption. Indeed Russia's oil exports to China surged by 25 percent in 2023, with Moscow reportedly surpassing Saudi Arabia to become China's leading oil supplier through the East Siberia-Pacific Ocean pipeline/gas pipeline. According to Rosneft, this route is considered "safer" than alternatives from the Middle East, involving tanker transport through the Strait of Hormuz or the Suez Canal.

#### A MONOPOLY ON GREEN TECHNOLOGY

Still, when it comes to climate policies, China talks to everyone, even the US. Even with relations with Washington at an all-time low, Joe Biden's special envoy for climate, John Kerry, visited Beijing for climate talks in July 2023, and Chinese officials continue to keep open channels of communication on certain topics, precisely to expressly manifest that "sense of responsibility" that is founded on the policy of "common prosperity."

This year's Belt and Road Forum, a High-level Forum on Green Development, saw COP28 president Al Jaber give an introductory speech that must have been music to his host's ears. The speech, widely cited by Chinese state media, emphasized that "China has the potential to lead the world in turning the goals of Paris into a solid and durable reality," before praising the Chinese leadership for "driving green growth not just in Belt and Road countries, but around the world." It noted that "three-quarters of the world's solar panels, 60 percent of all



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wind turbines, and most of the world's lithium-ion batteries come from China"—essentially giving a Beijing a monopoly on green technology that worries Western countries, which find themselves in the uncomfortable position of depending on China to meet their own climate targets.

Beyond its public and international image, in Dubai, the Chinese leadership will also have to handle a domestic political issue. COP28 will most likely be the last for Xie Zhenhua, Beijing's special climate envoy. In 2007, Xie became vice-chairman of China's National Development and Reform Commission, the country's economic planning body, which was also responsible for China's climate policy until 2018, when a reform transferred powers to the Ministry of Ecology and Environment. The retirement of this great diplomat has been talked about for years now and, according to several observers of Chinese dynamics, his replacement could affect China's international climate negotiations.

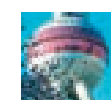
It was Xia Yingxian, referred to by state media as "the top official in the Ministry of Climate Change," who spoke at a press conference in Beijing in late October. He said western countries must stop issuing "empty slogans" and take a more pragmatic approach: "Developed countries bear an unshakeable

historical responsibility for global climate change and also now have the capacity to address it," he said. Perhaps he was also talking about China.

**we**

#### GIULIA POMPILI

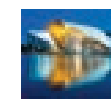
She has been a journalist for *Il Foglio* since 2010, where she covers mainly news from East Asia. In 2017, she started *Katane*, the first newsletter in Italian on Asian events. She is the author of the book *Sotto lo stesso cielo* (Mondadori edition).



To improve supply and ensure energy security, China needs allies and partners, first and foremost Russia, led by Putin. In the opening photo, the Oriental Pearl Tower in Shanghai. At 468 meters tall, it is one of the symbols of the city.



Despite the fact that diplomatic relations with Washington are at an all-time low, Joe Biden's special envoy for climate, John Kerry, visited Beijing for climate talks in July 2023, and Chinese officials continue to keep open channels of communication on green policies. Pictured: Beijing.



According to the five-year plan for the development of the sector released in March, electricity is expected to account for about 30 percent of total energy consumption by 2025. Pictured: the art museum in Chengdu, Sichuan, China.





# AFRICA'S CLIMATE PRIORITIES

by Alex Benkenstein, Romy Chevallier and Jordan Mc Lean

REFORMING CLIMATE FINANCE AND ITS INSTITUTIONS, NEW TAXES TO FINANCE GLOBAL ACTION, ACCELERATING GLOBAL AMBITION AND SUPPORTING A JUST ENERGY TRANSITION. AFRICA DICTATES ITS AGENDA FOR COP 28

**A**FRICA IS APPROACHING COP28 with a clear and coherent approach and a set of common messages for the international community. In September this year the first Africa Climate Summit (ACS) was convened in Kenya. The outcome document, the Nairobi Declaration on Climate Change, lays out Africa's four key priority areas for the continent's climate agenda and will form the basis of Africa's engagement at COP28. They include a call to reform the global climate finance landscape and its institutions – which Africa sees as unjust and distorted. The document also calls for new global taxes to fund climate action. In addition, the continent wants to see accelerated global ambition and enhanced climate action to meet the Paris Agreement temperature targets; continued support for the adaptation and loss and damage agenda, as well as support for Africa's just energy transition. The continent is currently working to articulate its key thematic priorities for the Africa Group of Negotiators (AGN) ahead of Dubai. This includes numerous preparatory meetings to arrive at a united and truly inclusive position.

While Africa is at the front-line of climate impacts, the Nairobi Declaration highlights the continent's potential as part of the global climate solution. This includes its potential to lead a low carbon energy transition through the use and scaling of its valuable renewable resources and critical minerals, and through green industrialisation. It also includes the opportunity to catalyze its young and growing population to champion its climate agenda and to develop innovative low-carbon resilient building solutions.

## AFRICA'S DEMANDS FOR A FAIRER CLIMATE FINANCE LANDSCAPE

Strong momentum has built up in recent years around a more equitable climate financing landscape for developing countries. Ahead of COP27, the AGN called on developed countries to mobilise at least US\$1.3 trillion a year by 2030 to support the climate finance needs of developing countries, stressing that 50% of this amount must go to adaptation, including an increase in the use of grant-based support. However, actual finance falls far short of what is needed. Only one tenth of global climate finance finds its way to Africa. African leaders continue

to highlight their extreme vulnerabilities to climate change and the continued constraints they face in accessing finance for adaptation and mitigation.

In June 2023, French President Emmanuel Macron hosted the Summit for a New Financing Pact where Kenyan President William Ruto highlighted the urgent need for "a new financial model, where power is not in the hands of the few" and where African countries do not face such difficulty in trying to access financial resources. This was also the widespread sentiment at the ACS, where African leaders jointly called for urgent and significant reforms to the structure and operation of the global financial system.

The Nairobi Declaration highlights nine recommendations to achieve global financial reform. These include redirecting International Monetary Fund (IMF) special drawing rights (SDRs) to Africa; a target of US\$500 billion for concessional finance from multilateral development banks; and mechanisms to 'de-risk' and reduce the cost of borrowing for Africa and developing countries. The Declaration also urged world leaders "to rally behind the proposal for a global carbon taxation regime that includes a carbon tax on fossil fuel trade, maritime transport and aviation, that may also be augmented by a global financial transaction tax". And the Declaration calls for the development of a new Global Finance Charter to be adopted through the United Nations General Assembly and COP processes by 2025.

While there has been some movement on climate finance, more serious commitments are urgently needed to sustain momentum and keep trust-based partnerships alive. For example, the IMF has led the development of the Resilience and Sustainability Trust as a new instrument to provide affordable long-term financing to low-income and vulnerable countries to supplement their limited fiscal capacities. This facility can help finance investment in green power and assist with other structural reforms to speed up the energy transition. Since the trust was established in 2022, 17 countries have submitted pledges amounting to SDR 30.5 billion and five packages worth US\$3.4 billion have been approved. At the annual IMF meeting in Marrakesh in October 2023, a new debt restructuring plan for Zambia was developed. In addition, during COP28,




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 Africa has the potential to lead a low-carbon energy transition through the utilization and scaling of its valuable renewable resources and critical minerals. Pictured: Victoria Falls, Zimbabwe.

 Much attention has been given in recent years to the need for a more equitable climate finance landscape for developing countries. However, actual funding falls far short of what is needed: only one-tenth of the world's climate finance goes to Africa. Pictured: stock market trends on the left and desertification in Namibia on the right.

the UAE Presidency will release a detailed report and implementation roadmap developed by world-leading economists, which will provide recommendations to reform international climate finance and build on the Bridgetown Initiative .

**ACCELERATING CLIMATE ACTION THROUGH ACCOUNTABILITY AND REVIEW MECHANISMS**

African countries are calling for urgent action to keep the Paris Agreement's 1.5-degree Celsius temperature target within reach. In this regard, the Global Stocktake (GST) will, for the first time, analyse the collective progress made by countries in addressing the climate goals of the Paris Agreement. Every five years, starting at COP28, this GST process is set to review the efforts made within countries' Nationally Determined Contributions (NDCs), with the intention to accelerate global climate action by highlighting areas where countries and non-state actors can intensify efforts and ambitions.

This first-ever stocktake is particularly important to Africa as it can act as an accountability tool and has the potential to shape the long-term narrative on climate action. According to UN Environment's Africa Director Richard Munang, the GST offers Africa a timely platform to voice its unique climate concerns and press for urgent climate justice. While there are ample reports indicating that country and corporate climate commitments are falling short, the GST can help to fast-track the transition to a sustainable future by highlighting the actions and finance needed to support the scaling of climate responses.

**SUPPORTING AFRICA AS A KEY PLAYER**

Energy poverty and energy equity still inform Africa's shared perspectives on energy transitions. In 2022, ahead of COP 27, the African Union developed a common position on a just energy transition. The statement stresses the need to continue deploying all energy resources available on the continent,

including natural gas, green and low-carbon hydrogen, and nuclear energy, as short- to medium-term transition sources, while enhancing the uptake of renewables in the long term for low-carbon and climate-resilient development. Africa currently has the world's lowest energy consumption rates, with 600 million people on the continent still lacking access to electricity. Nonetheless, Africa's rapid population growth and urbanisation will cause the continent's emissions to double by 2050, increasing the urgency for the continent to decarbonise as it develops. Africa has the potential to be a key player in the energy transition. The continent is thought to possess 40 percent of the world's renewable energy resources. In addition, African countries hold significant reserves of many of the minerals that are critical to the energy transition. For example, South Africa holds 91 percent of global platinum reserves and 22 percent of the world's manganese, while the Democratic Republic of Congo is home to half of the world's cobalt resources. To high-

light its seriousness and intent around this issue, the Nairobi Declaration calls for a five-fold increase in renewable energy, namely, "to increase Africa's renewable generation capacity from 56 GW in 2022 to at least 300 GW by 2030" . While Africa has emphasised that all forms of energy are necessary to support energy access and development, it has clearly emphasized the seriousness of its transition. Some global partners are also pushing for lower-carbon resilient development. The G20, for example, has recently issued a statement committing to tripling global renewable energy production by 2030. Also, the International Renewable Energy Agency, in partnership with the governments of Kenya, Denmark, Germany and the UAE, established a partnership agreement to boost Africa's renewable energy development. The Accelerated Partnership for Renewables in Africa (APRA) will support six African countries to develop their renewable capacities – Kenya, Ethiopia, Namibia, Rwanda, Sierra Leone and



Zimbabwe – and will focus on technical assistance, capacity building and finance mobilisation. The APRA may expand to other countries as it seeks to bring the public and private sectors together on green energy. Likewise, the UAE has shown interest in supporting Africa’s renewable energy transition by committing US\$4.5 billion to developing clean energy and US\$450 million to support carbon credits.

### GLOBAL SUPPORT FOR ADAPTATION AND MAINTAINED MOMENTUM ON LOSS AND DAMAGE

The Intergovernmental Panel on Climate Change’s (IPCC) Sixth Assessment Report, released in 2023, highlights the vulnerability of Africa to the impacts of climate change, with many of Africa’s economies reliant on climate-sensitive sectors. In 2022, climate extremes were on display, with the Horn of Africa experiencing extreme droughts and famine, while the southeastern parts of Africa faced multiple cyclones. Similarly, the 2023 Global Risk Report argues that the slow progress in establishing the appropriate support for countries to fund adaptation heightens the devastating impacts of climate disasters, especially for developing countries. Africa is projected to experience the economic costs of climate change more heavily than other regions. Adaptation measures can reduce these costs if implemented with the necessary speed and scale, but it is inevitable that some level of loss and damage will occur as a result of climate change.

Although the UNFCCC recognizes loss and damage as the third pillar of climate change (along with adaptation and mitigation), progress has been slow in operationalizing the mechanisms to address the economic and social costs of climate change. COP27 saw the historic recognition of loss and damage as an agenda item, and the landmark creation of the Loss and Damage Fund. These achievements are the culmination of sustained civil society momentum and developing country pressure. At COP27 a Transitional Committee was also established and tasked with developing a set of recommendations on the operationalization of the Fund, with the intention that they be formally adopted at COP28.

With the IPCC report highlighting Africa’s growing number of climate disasters each year, the operationalisation of the Loss and Damage Fund, and the completion of the funding arrangements can no longer wait. This will remain a key priority for the AGN, as will the call for early pledges to ensure that countries and non-state actors respect their commitments made at Sharm El Sheikh.

Furthermore, in 2015, the Paris Agreement (Article 7.1) es-

tablished the Global Goal on Adaptation (GGA) to “strengthen resilience and reduce vulnerability to climate change”. The Glasgow-Sharm El Sheikh work programme on the GGA was established during COP26 to develop a framework for implementing the GGA at COP27 and the Parties agreed to present a framework for adoption during COP28. The last workshop of the work programme was convened in Botswana in October 2023 and left some unresolved issues. Agreeing to a suitable framework on the GGA will be key for the AGN, who have been vocal about Africa’s demands for a GGA since 2013.

COP28 must encourage a spirit of transparency, openness, inclusion, and fairness. In practical terms, this means sharing accurate, timely data through processes such as the GST; action-orientated commitments by a diverse set of actors through dynamic partnership arrangements and innovative financing structures; respect and empathy for other countries’ circumstances; and equity and fairness through the urgent meeting of historical pledges and just contributions to Africa’s current needs. Increasingly, there is talk of COP fatigue. To overcome this, commitments must be regularly reviewed and updated based on the latest science and evolving circumstances. Africa needs climate action that takes into account its unique vulnerabilities and capabilities. It also needs to see increased overall global ambition, stronger commitments to action-orientated progress, and movement on actual execution and implementation.

Africa is clear about its priorities, commitments, and the support it needs from the international community. Strategic partnerships are vital to move Africa’s agenda items forward. This includes strategic alignment with the COP Presidency, international financial institutions, as well as key state and non-state allies.

### We


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 Africa can definitely be a key player in the energy transition: in fact, the continent is estimated to possess 40 percent of the world’s renewable energy resources. In addition, African countries have significant reserves of many of the critical minerals that are essential for the energy transition: for example, South Africa holds 91 percent of the world’s platinum reserves and 22 percent of its manganese reserves. Pictured: students in Cape Town, South Africa. On the opposite page is the port city of Durban, also in South Africa.



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# WATER STRESS

## IN THE MENA REGION

by Daniela De Lorenzo

NINETY PERCENT OF THE REGION'S LAND IS ARID OR SEMI-ARID, AND FRESHWATER AVAILABILITY IS SET TO FALL BY 50 PERCENT BY 2050. SO FAR, EMERGENCY SOLUTIONS HAVE BUFFERED THE GREATEST DAMAGE; A LONG-TERM VISION IS NEEDED

IN THE MOST RECENT appeals launched by the FAO in Rome on World Food Day, October 16th, it was revealed that “2.4 billion people live in water-stressed countries and another 600 million people are forced to rely on aquatic food systems compromised by pollution, ecosystem degradation and the effects of climate change.” This truly disturbing fact is compounded by the conflicts increasingly caused by severe water stress.

Water stress affects about one-fifth of Europe's territory and most of the North African countries. According to the World Resources Institute's latest ranking, the water stress levels of southern European countries tend to converge, and in this context, Italy is placed in the “high” water stress cluster. This cluster also includes many countries in the Middle East and North Africa (MENA). But more importantly, 11 out of the 17 countries in the extreme water stress cluster are in the MENA region.

Ninety percent of the land in the MENA region lies in arid, semi-arid, and dry sub-humid areas; moreover, according to FAO data, fresh water resources in these countries have decreased by as much as two-thirds in the past 40 years and is expected to drop by 50 percent by 2050. On the other hand, these countries are also the most strongly affected by the effects of climate change i.e., rising temperatures, rising sea levels, salinization of rivers and coastal aquifers.

In this region, high sea temperatures feed increasingly heavy rainfall, alternating with periods of drought that contribute to soil sealing and bring high risks of flooding. However, the equilibrium of the land in many countries in the area has also been upset by policies of large-scale works and mega-projects, which over time have brought major changes to the landscape and environmental and social frameworks. There has also often been a lack of adequate coordination strategy between spatial policies, infrastructure management and climate mitigation actions. The devastation in Cyrenaica caused by the millions of cubic meters of water that caused two dams to collapse in September is emblematic of these critical issues and the very heavy consequences, paid for dearly by the territory and the population.



Endogenous issues in MENA countries also weigh on water resource management. Agricultural policies subsidizing crops and setting very low water prices fail to account for environmental and energy costs. Agriculture uses around 85 percent of total freshwater availability, continually withdrawing non-renewable groundwater. Intensive irrigation, minimal reuse of purified wastewater and heavy fertilizer use have led to groundwater pollution, salinization, lost biodiversity and soil fertility, plus inefficient water services.

Inadequate water and agricultural management in countries with potential for good yields is forcing more populous nations like Egypt and Algeria to import more grain. Reduced farm output also leads to higher unemployment, food insecurity, rural exodus and increased urbanization pressure, in a vicious cycle further straining scarcity.

Recent events like the pandemic, conflict-related water infrastructure sabotage (in Iraq and Libya), earthquakes and the Ukraine war have made things far worse.

Moreover, MENA countries have very high population growth. UN forecasts estimate a 45 percent increase by 2050, on top of strong migration pressures and growing urbanization. These trends will massively boost energy, food and water demand, potentially undermining sustainable resource use further and escalating conflict.

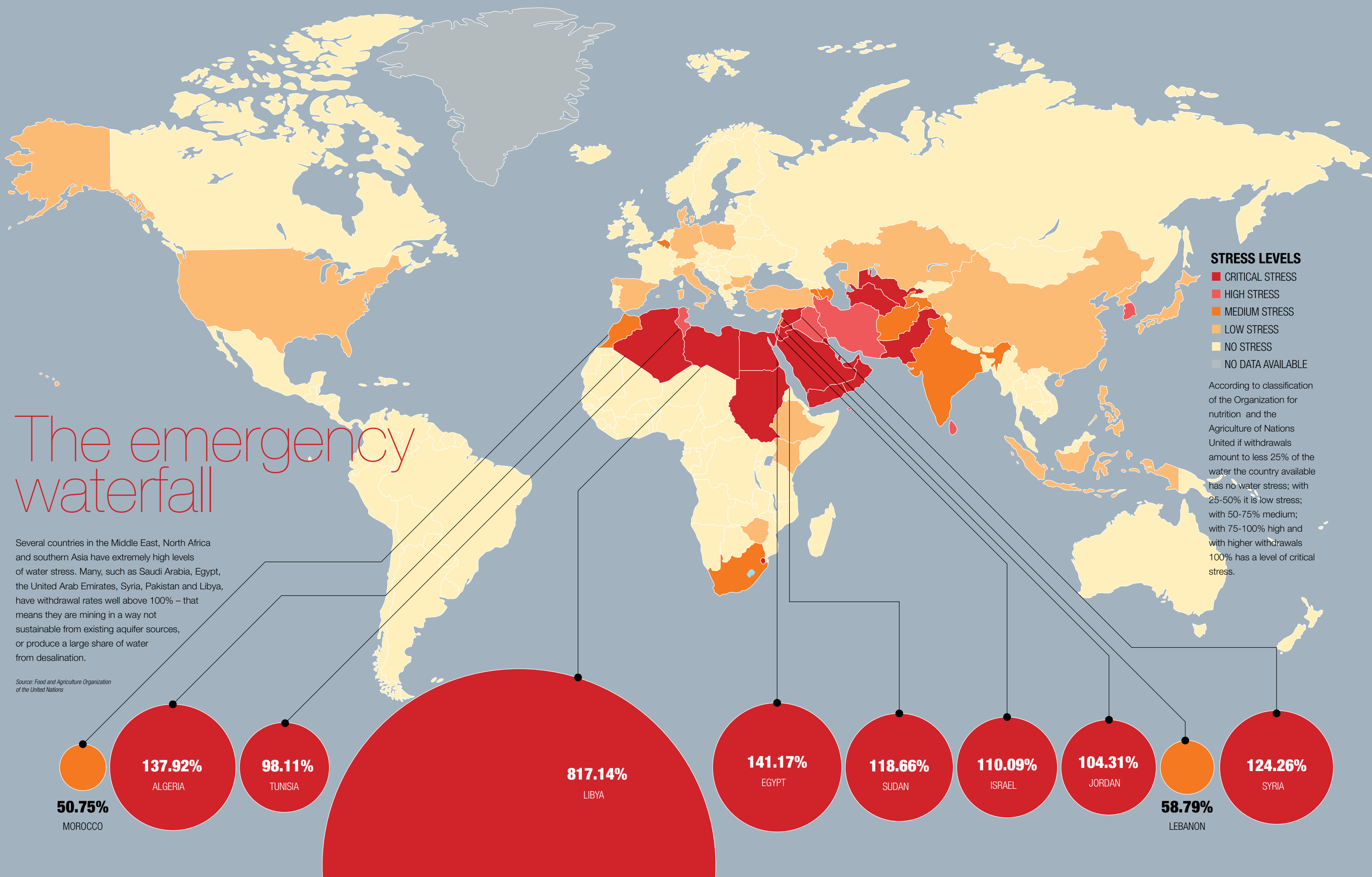
#### CONTESTED WATERS AND RESOURCE OPTIMIZATION

Some MENA countries cannot control domestic water resources, because rivers and aquifers often cross borders. This amplifies insecurities and rivalries, as with Egypt and Ethiopia after the GERD dam's construction, or between Israel, Jordan and Palestine. The Arab-Israeli conflict intertwines with water: Israel remains the hydro-hegemon controlling almost all basin access, won in the 1967 war. Meanwhile Gaza, the West Bank and Jordan depend on Israeli infrastructure for supplies, dramatically exacerbated during crises.

Israel has large water shortages, but saving water has been an ethos since its founding through "making the desert bloom." Today Israel leads in optimizing water resources, with smooth collaboration between academia, innovation hubs and military facilities creating an effective innovation ecosystem. Over time, Israel has adopted judicious soil use, cutting-edge fertilization and irrigation, natural and circular water practices, and small reservoirs. Fog and dew collection techniques first pioneered militarily now see civilian applications.

Despite water shortages, Gulf monarchies have successfully transformed into artificial upstreamers through innovation. More efficient irrigation for unconventional water production and hydroponic farming have remarkably changed their water and agricultural fortunes.

These countries already practice desalination and wastewater recycling for non-potable uses as an alternative to continuous







nonrenewable groundwater withdrawal. Of course, they boast greater economic and technological resources, recently enhanced through collaborations with water tech leader Israel. However, technological optimism shouldn't obscure limitations. Energy-intensive desalination, for instance, remains prohibitively expensive for most agriculture. A narrow focus on desalination plants without broader interventions risks becoming just another "mega-project" panacea.

A more integrated, ecologically-aligned approach is found in nature-based solutions (NBS) taking hold in Europe and Asia as effective alternatives to traditional techniques for building resilience and improving disaster management.

Sustainable soil management benefits soil health and can improve moisture and water retention, preventing erosion, conserving biodiversity and reducing farm pollution.

Mediterranean wooded areas with diverse plants and animals play a key role protecting land and regulating water and wind circulation. Ensuring adequate forest protection and preservation thus conserves not just CO<sub>2</sub> absorption and biodiversity, but also water resources by safeguarding groundwater.

Compartmentalized management has so far hindered more integrated, sustainable practices. Many MENA countries grow highly water-intensive crops like rice and sugar. But pumping, draining, distributing and using water requires large amounts of energy. Greater efficiency and sustainability could come through combining water conservation techniques (protecting and creating healthy, wet, fertile areas), rainwater harvesting, and renewable energy like solar-powered pumps replacing diesel.

At the same time, water resources are also imperative for energy production: for processing raw materials to build and maintain facilities at all stages of production from fossil fuel extraction to transportation and processing, and in downstream power generation and as a hydrogen electrolysis source.

Careful monitoring of industrial water withdrawals, treatment and recycling is crucial. For biofuel crop irrigation, identifying optimal areas, soils and climates while modulating crops based on available water resources and potential ecosystem and community impacts is key.

In a more integrated, ecosystem-based approach, it is vital to examine the resource nexus and prioritize interventions aimed at simultaneously ensuring greater soil fertility and biodiversity, substantial energy savings, and long-term water security. Given strong interconnections between sectors, the water-energy-food-ecosystem nexus has emerged as a holistic methodology. Fundamental interrelationships also exist between on-the-ground actors. Civil society, governments, NGOs, development banks, international entities and private companies can collaborate in cross-sectoral alliances. Public-private partnerships specifically enable the private sector to provide financing and



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In the Middle East and North Africa, many rivers or aquifers belong to different states, a fact that amplifies insecurities and rivalries, as occurred, for example, between Egypt and Ethiopia following the construction of the GERD dam. In the opening image, a boat on the Nile, Egypt.



In many countries in the MENA region, policies of large-scale works and mega-projects have, over time, brought major changes to the landscape and environmental and social frameworks. Pictured: the desert region of M'Hamid El Ghizlane in the Draa Valley, Morocco. The river, which once flowed through the area, was diverted by the dam ordered by King Mohammed V.

technology, while the public sector ensures social responsibility and environmental awareness.

Equally crucial final steps are raising awareness and educating civil society while involving local communities in water and ecosystem conservation. Valid solutions can also revive efficient, sustainable historical and traditional local water and agricultural practices, including with modern technology support. Within the environmental debate, we are changing how eco-

logical resources are viewed. Alongside the right to water, we now consider the rights of water, with complex dialogues between human rights and those of the natural world. Some countries have taken the cultural leap to grant rivers and waterways legal personhood under emerging "environmental personality" doctrines.

While emergency solutions have buffered the worst drought, flood, pandemic and conflict damages, growing awareness

points to the need for long-term, sustainability-focused decision-making that considers soil, water and human health.

**we**

**DANIELA DE LORENZO**

Head of Institutional Political Analysis Middle East, North Africa and Asia Pacific, Eni.





# THE TRANSITION SEEN

*from the*

# GULF

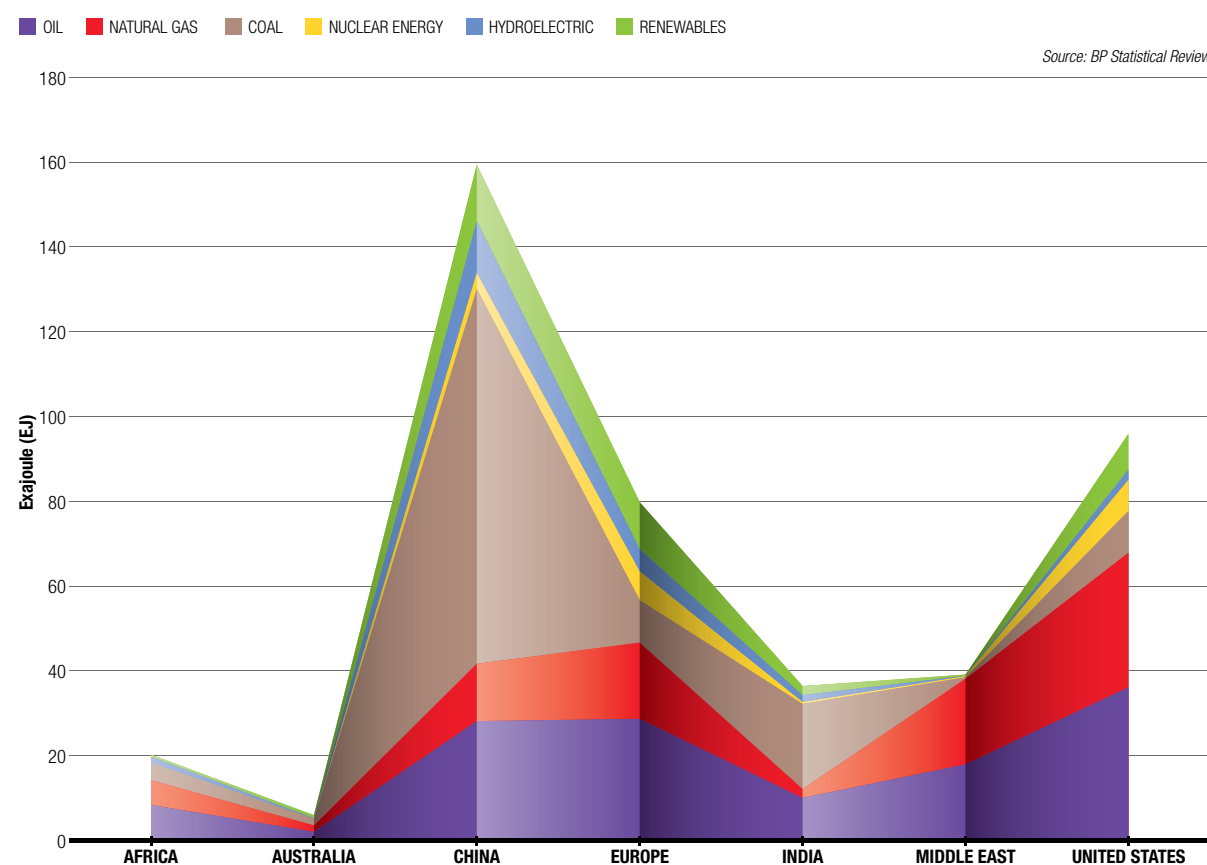
by Ahmed Mehdi

THE ADAPTATION STRATEGY ADOPTED BY THE GCC IS TO BUILD RESILIENCE THROUGH THE AWARENESS THAT OIL AND GAS ARE HERE TO STAY AND THAT HOWEVER THE INTENSITY OF EMISSIONS MUST BE REDUCED OVER TIME. CCUS IS THE PROTAGONIST

IN A SPEECH DELIVERED to industry stakeholders at the Schlumberger Forum in 2022, Saudi Aramco's CEO, Amin Nasser, provided a stark warning to policymakers: attempts to 'shame oil and gas investors' and starve the fossil fuel industry of upstream investment brings unwanted outcomes—energy insecurity, higher costs for consumers, and an unjust transition. For Nasser, a blind faith in net-zero roadmaps built on flawed assumptions is akin to a 'chain of sandcastles that waves of reality have washed away.' Russia's invasion of Ukraine was one such wave: the dislocation caused by the loss of Russian energy supplies (particularly gas) reignited concerns around energy security and the pitfalls of building the energy system of tomorrow on



## PRIMARY ENERGY CONSUMPTION BY SOURCE



Fossil fuels continue to be the main source of primary energy in many regions of the world. In particular in China and India, coal and oil account for more than three-quarters of demand. Renewables, although growing, still play a minor role.

roadmaps divorced from reality.

Since Glasgow's COP 26, net-zero pathways and the speed of the energy transition have been influenced by other realities: the acceleration of a North-South divide; the end of easy money as global monetary systems are forced to rapidly transition from an era of quantitative easing to a new period of tightening (raising the cost of capital for energy investments); growing concern that the supply chains for low-carbon technologies (e.g. li-ion batteries, solar etc) require de-risking, as geopolitical competition between the US and China ushers in a redrawing of the global energy map.

In this new reality, questions have been raised around the future role set to be played by Gulf oil and gas producers: will they be disruptive spoilers or key actors critical to unlocking a smooth(er) road to net-zero?

### GCC IN THE SPOTLIGHT

As global leaders meet later this year in the UAE for COP 28, another wave of reality will also have to be confronted: since the Paris Agreement entered into force seven years ago, global carbon emissions have been increasing, with energy-related emissions growing by around 320 million tonnes to over 36.8 Gt by the end of 2022. The IPCC have made it clear that to limit temperatures to 1.5°C, emissions must fall by around 43 percent by 2030 (compared to 2019 levels). The global carbon budget—

the amount of CO<sub>2</sub> that can be emitted before the world hits 1.5°C of warming—has been estimated at just 380 gigatonnes (GT). To put this in context, global emissions currently run at more than 40Gt per year.

It is no surprise therefore that the UAE is calling this a COP of realism: a 'global stocktake' on progress so far and practical steps forward. Already however, divisions have crystallised: EU and US legislators have called for the UAE's COP President (Dr Sultan Jaber) to be removed, citing his conflict of interest in spearheading the climate conference, while also being head of ADNOC, the UAE's state-owned oil company.

Critics of the GCC's energy transition credentials have also pointed to the following:

- The GCC countries of Saudi Arabia, UAE, Kuwait, Oman and Qatar account for around 24 percent of global oil production and 11 percent of gas production. More concerning remains the fact that on a per-capita basis, the GHG emissions of GCC states such as Saudi Arabia, Qatar and Kuwait are around quadruple the global average.
- Despite calls by the IEA and IPCC that global oil and gas production must decrease to meet stated targets of limiting warming to 1.5°C, all major GCC countries are planning to increase their upstream oil and gas production capacity. Saudi Aramco is planning to increase its oil production capacity to 13m b/d by 2027; ADNOC is also planning to increase oil production capacity from 4.4m b/d to 5m b/d by 2027, with whispers of 6m b/d by 2030. ADNOC is also planning a 9.6mtpa LNG export facility which will require around 1.6bcf/d of feedgas; likewise, QatarEnergy—already one of the world's largest LNG exporters—will increase its LNG capacity from 77mt to 126mt by 2027 and is contemplating going further still.
- Notwithstanding subsidy reform and oil-to-gas switching efforts across the GCC, renewable penetration rates have been low, despite the region enjoying above average wind speeds for utility-scale wind farms and high solar radiation levels. Saudi Arabia, for example, has a 2030 target for 50 percent of its electricity mix to come from renewables (equating to 58.7GW); in reality, its capacity has barely budged above 1GW this year (less than 0.1 percent of its domestic power demand), although development is accelerating. Both the high percentage of HSFO and crude oil used for power generation has meant that the emission intensity of the Saudi grid has averaged 0.59 kgCO<sub>2</sub>e/kWh—around 0.1 kgCO<sub>2</sub>e/kWh higher than the global average. Deployment rates are, however, expected to improve: the UAE has been aggressively promoting renewables in its mix and has already shown some progress with the Al-Dhafra project (site of the largest solar project in the world). The biggest gains however come from the UAE's nuclear power project (Al-Barakah).
- The UAE's ADNOC recently brought forward its net-zero

target by 5 years to 2045, with the additional goal of cutting methane leakage to zero by 2030—especially important given that methane emissions trap more than 30 times more heat from the atmosphere than CO<sub>2</sub>. Importantly however, both ADNOC and Aramco are only targeting scope 1 and 2 emissions (not scope 3—which account for around 70-80 percent of oil emissions). Other players such as QE have been even more modest, setting a target of cutting carbon intensity by 15 percent to 25 percent by 2030.

- The framework for the energy transition championed by players such as Saudi Arabia has been dubbed the circular carbon economy: a licence to continue oil and gas production with the important caveat of closing the carbon cycle via new technologies such as Carbon Capture and Storage (CCS)—a technology which remains in its infancy and requires significant scaling.

### MAXIMUM ENERGY, MINIMUM EMISSIONS

While the above remain legitimate ground for criticism, it is both inaccurate and simplistic to call the GCC a paralysed player, unable to progress in a carbon-constrained world. In particular, it is worth noting the following:

- Under all major net-zero scenarios by and beyond 2050 residual demand for fossil fuels will continue. For low-cost and high-volume producers such as Saudi Arabia and UAE, there is no paradox with increasing production capacity (to meet residual demand as the most competitive supplier in the market) while also targeting scope 1 and 2 emissions via measures such as reduced flaring intensity, plugging methane leakages, carbon capture and sequestration, and greater use of renewables for upstream operations. In short, players such as Aramco and ADNOC are positioning themselves as the most competitive on both production cost and upstream carbon intensity—the latter already being incorporated in price assessments made by price reporting agencies (PRAs). Platts, for example, have recently started incorporating a carbon intensity premium across a range of oil fields globally which measures the cost to use a carbon credit to compensate for the associated well-to-wheel greenhouse gas emissions of a particular field. In short, the higher a crude's carbon intensity, the higher its CI premium will be to account for the price of carbon removal. Both Saudi's largest field (Ghawar) and the UAE's Murban compete well on a global basis. As global carbon pricing regimes began to account for the cost of removing carbon, end-users will likely consider this CI premium when assessing the relative competitiveness of various crude oils.
- From a geopolitical perspective, Saudi and UAE dominate OPEC spare capacity—an important tool that can influence the speed of the energy transition, as decision-making on spare capacity (particularly in light of concerns around Rus-

## CARBON INTENSITY PREMIUM



sia's long-term supply risk) can influence long-run oil prices and upstream investment decision-making. In short, there appears little logic in Saudi and the UAE forgoing their high-margin, low-cost and carbon competitive upstream oil sector given a) residual demand for hydrocarbons under even the most aggressive net-zero scenarios; b) the ability of GCC players to compete in a world of carbon taxes and more aggressive pricing regimes; and c) retaining geopolitical relevance as oil price cycles become more volatile during the energy transition.

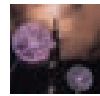
- Underpinning GCC energy transition strategies remains the role of Carbon, Capture, Utilisation and Storage (CCUS)—the passport allowing GCC producers to continue producing hydrocarbons. Current CCUS capacity is inadequate, estimated at just 43mt/yr (around 0.1 percent of global emissions). Scaling CCUS therefore remains key to net-zero targets, and industrial hubs such as Saudi Arabia's Jubail and the UAE's Ruwais are needed for at-scale CCUS developments. The GCC can arguably be key players needed to scale CCUS capacity: they have some of best storage conditions globally. Saudi, for example, aims to capture around 44mt/yr at Jubail by 2035. CCUS can also be used as a tool to develop hydrogen hubs across the GCC.
- Seeking to capitalise on the economic opportunities emerging from the energy transition, Saudi is becoming a major

Some agencies have begun to incorporate a carbon intensity premium into the valuation of oil-product prices in major fields, which measures the cost of using a carbon credit to offset well-to-wheel greenhouse gas emissions. The higher the carbon intensity of a crude, the higher its premium to account for the price of carbon removal. The graph shows a few examples.





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The future role of the Gulf oil and gas producers at the COP is the subject of a debate over whether they will be incredible disruptors or key players in the climate challenge. Among the reasons for doubt is the fact that Saudi Arabia, the United Arab Emirates, Kuwait, Oman and Qatar account for about 24 percent of the world's oil production and 11 percent of its gas production. On the opening page, the Burj Khalifa skyscraper in Dubai.



In many ways, the complexity of the GCC's role in the global energy transition is perfectly personified by the role of the president of COP28, who finds himself both the head of a national oil company and the former head of the region's largest renewable energy company, Masdar. Pictured: Masdar City, in the United Arab Emirates. On the other page, the Dubai skyline.



player in the global li-ion battery industry. Having initially been a bit player, Saudi has over the past year taken significant strides to increase capital investment in the battery supply chain: a new JV between Ma'aden and PIF (Manara Minerals) was established in late 2021 to invest across the global battery value chain, most recently via a 10 percent stake in Vale's base metal division. More investments are expected, particularly in lithium refining and upstream mining (brines and hardrock)—effectively, placing Saudi as a major capital allocator in the global battery industry at a time when western governments are seeking to counter China's dominant position in the value chain (best expressed in the US Inflation Reduction Act).

The GCC can neither be viewed as a chief spoiler or paralysed player as momentum for the energy transition continues apace. Notwithstanding the climate risks facing the GCC and wider Middle East—as one of the hottest and most water stressed regions globally—the GCC is also aware of the risks posed by a carbon-constrained world: tariffs on high-carbon goods (fuels, steel, aluminium, and plastics), rising carbon taxes, among others. However, the adaptation strategy taken by the GCC is one of building resilience: acknowledging oil and gas is here to stay but that emission intensity must be reduced over time. In many ways, the GCC's energy transition playbook relies strongly on scaling CCUS as a viable energy transition technology and en-

suring its geopolitical relevance is not compromised. We should expect to see more investments in renewables as a tool to free liquids for export; greater investment in low-carbon technologies (batteries, hydrogen and ammonia) and a guarded defence of the role of fossil fuels in the global energy system. In many ways, the complexities of the GCC's role in global energy transition is perfectly personified in the role of the Cop 28 President: both the head of a national oil company and former chief of the region's largest renewables firm, Masdar.

**we**

**AHMED MEHDI**

He is Managing Director of Renaissance Energy Advisors, an energy research house. He also serves as a Visiting Fellow at the Oxford Institute for Energy Studies and non-Resident.

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# WATER ENERGY FOOD NEXUS

by Martin Keulertz

AT COP28, THE HOSTS—MAJOR SUPPLIERS OF ENERGY BUT AMONG THE MOST WATER-SCARCE COUNTRIES—WILL HAVE AN OPPORTUNITY TO PUT THIS ISSUE ON THE AGENDA OF THE UN-LED PROCESS TO DECARBONIZE FOOD SYSTEMS

OUR WATER, ENERGY, and food systems are intricately connected. Water plays a crucial role in energy generation, particularly in the context of cooling processes. Conversely, energy is essential in activities such as pumping, wastewater treatment, and desalination. And the food system is undeniably reliant on water, utilizing over 70 percent of all fresh water extracted from streams and groundwater. Additionally, it accounts for approximately 30 percent of global energy generation, encompassing farm operations, fertilizer production, as well as food processing and distribution. The concept of the Water-Energy-Food Nexus (WEF Nexus) emerges from a systems thinking approach that prioritizes a holistic view of interconnected elements rather than fragmenting complex issues into isolated components. This concept is gaining increased attention from decision-makers due to the inherent interconnections of the three systems, as well as the notable synergies and trade-offs they entail.





The reliance on food imports has been a longstanding concern for GCC decision-makers, particularly during periods of sharp increases in food prices in 2007/08, 2010/11, 2020/21, and most recently in 2022/3. The volatility in prices and disruptions in the supply chain have heightened anxiety among GCC decision-makers. Depending on imports means vulnerability to fluctuations in world markets, a risk amplified by the uncertainties of climate change and escalating water scarcity globally. Notably, the UAE, for instance, imported vegetables valued at \$1 billion from India last year, a country facing its own challenges of rising water scarcity and demonstrating a willingness to restrict strategic exports. The implications of food import risks are increasingly viewed as potential threats to national security. Conversely, the GCC possesses considerable leverage as one of the primary global energy suppliers. In the context of the Paris Agreement, there is a compelling need for the GCC to transition its energy systems away from fossil fuels to renewables. Here, the region holds a distinct competitive advantage due to its abundant solar radiation, with photovoltaic plants in the GCC producing twice as much output compared to Europe. Recognizing the potential of renewable energy and strategically positioned between India and Western Europe in terms of time zones, the GCC can seize opportunities to integrate water, energy, and food management. Embracing technologies such as desalination, water treatment, hydroponics, vertical farming, aquaculture, and solar energy could propel GCC economies toward a sustainable and resilient future.

Originating from the insights of McKinsey and the support of the German government, which has provided seed funding for various Nexus initiatives since 2011, the WEF Nexus has garnered increasing recognition. The Gulf Cooperation Council (GCC) stands poised to elevate this concept to the forefront during COP 28, adopting a perspective of collective optimization for natural resources management—one that emphasizes a "one-for-all and all-for-one" approach.

**THREE SYSTEMS, INTERTWINED**

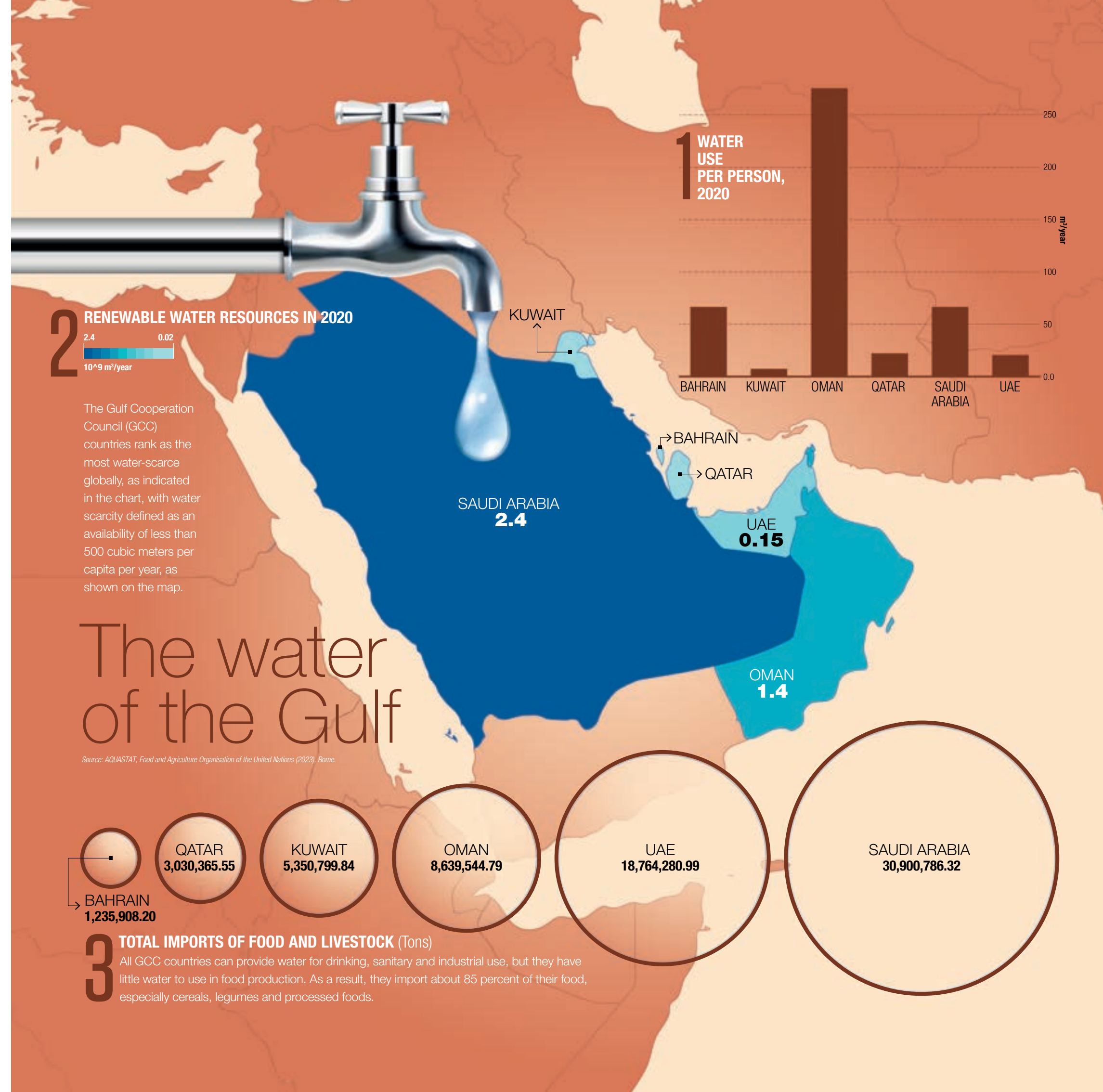
The Gulf Cooperation Council (GCC) countries constitute the most water-scarce region on earth, as illustrated in Figure 1. This scarcity is specifically defined as having less than 500 cubic meters per person per year, as depicted in Figure 2. What has traditionally been perceived as a burden now presents an opportunity for transformative thinking. All GCC nations fall below this critical threshold. While they manage to supply water for drinking, sanitation, and industrial purposes, the availability of water for agricultural needs, particularly for food production, is severely limited. Consequently, approximately 85 percent of their food is imported, including notably cereals, legumes, and processed foods, as depicted in Figure 3. The effectiveness of world-class maritime port facilities, such as those in Jebel Ali, plays a pivotal role in facilitating this import-heavy dynamic.

**WHAT IT TAKES TO MASTER OF THE WEF NEXUS**

The WEF Nexus provides a valuable framework for understanding effective strategies in diverse situations. While governance in the Nexus domain is still evolving, collaboration among public institutions, particularly Ministries of Water, Agriculture, and Energy, is crucial. This collaboration is especially vital in activities such as stock-taking, monitoring, and resource control. The initial step in co-managing the three systems involves conducting a thorough audit of available resources and establishing realistic targets. Rigorous auditing of water resources is imperative to grasp its actual, physical availability, addressing issues of scarcity and avoiding the risks of aquifer depletion. Despite Oman, Saudi Arabia, and Bahrain having relatively more water, its finite nature demands meticulous accounting for every drop used in energy or food production. Simultaneously, setting realistic targets for domestic food supply is essential. Decision-makers must assess which food crops can be cultivated locally, given water scarcity. It becomes challenging to justify growing staple commodities like cereals when they can be more economically imported from regions with abundant water supplies, such as North America, South America, North Asia, Central Asia, and Oceania. However, there's

The Gulf Cooperation Council (GCC) countries are the world's most water-scarce and, at the same time, are among the world's largest energy suppliers. Sustainable and self-generated energy is the focus of Neom, the eco-city planned in Saudi Arabia (in the opening photo, the area where it is planned), which is intended to be powered exclusively by wind and solar energy and where there are plans to build the world's largest green hydrogen plant.

The UAE announced its commitment to achieving zero CO<sub>2</sub> emissions by 2050, and was the first country in the MENA region to set this target. Pictured: an aerial view of Dubai.







© EMRE/UNSPLASH

potential for locally produced meat through improved rangeland for livestock grazing, and with increased energy availability, feedlots can contribute to dairy production using imported feed.

The WEF Nexus concept encourages decision-makers to think creatively. In the context of scarce water resources, a pivotal question emerges: How much and what type of renewable energy can be developed to foster a cleaner nexus between water, food, and energy systems? For instance, concentrated solar plants (CSP) are known to be water-intensive, with a significant consumption compared to fossil-fuel power plants. This consideration raises challenges for the profitability of CSP plants in water-scarce areas with high water costs, including transportation and pumping. The same concern applies to the production of green hydrogen or ammonia, which are even more water-intensive.

#### IDENTIFYING OPPORTUNITIES

One of the most critical challenges facing the GCC region is the need to enhance water availability in an energy-efficient manner, primarily through desalination or wastewater treatment. Bahrain, for instance, currently expends nearly one-third of its predominantly fossil fuel-based energy on water desalination and treatment, a practice deemed unsustainable. A poten-

tial solution lies in solar-powered membrane technologies utilizing reverse osmosis, which could reduce energy costs by one third. Implementing desalination plants powered by renewable energy sources could also facilitate hydroponic production of fruits and vegetables. Nevertheless, similar to CSP power plants, the scalability of hydroponics is essential for its agronomic and cost-effectiveness.

Emerging technologies inspired by the WEF Nexus concept, such as agrivoltaics, present promising avenues. While agrivoltaics has been in existence for years, recent developments by scientists from Italian and American universities have led to a new generation of photovoltaic plants capable of utilizing blue light for solar energy and red light for crop production (e.g., tomatoes). This innovative approach consumes up to 90 percent less water, thanks to the shade provided by the photovoltaic panels, all while generating solar power. This could prove particularly advantageous in GCC countries with abundant land availability and solar energy resources.

The recent Ukraine crisis has underscored the global significance of fertilizers, predominantly derived from fossil fuels. Ammonia, a key fertilizer, has been hailed as the "bread from air" ingredient since its invention by two German scientists during World War I. Leveraging their abundant solar potential, the GCC countries could play a pivotal role in producing "bread

from the sun" by exploring opportunities in green ammonia production. This involves utilizing solar power to produce hydrogen, subsequently transformed into ammonia—a practical application of the WEF Nexus at another level, harnessing increasingly available solar energy for sustainable food production.

#### FUNDING AND WAYS FORWARD

The successful implementation of these WEF Nexus technologies requires substantial funding for scaling up these ideas. Ambitious plans have been unveiled to establish food valleys, boost renewable energy production, and enhance water availability through desalination and wastewater treatment across the GCC region. Beyond being effective strategies for increasing regional water, renewable energy, and food supply, these initiatives also hold geopolitical significance. By leading the technological revolution urgently needed in other parts of the world grappling with climate change and population growth, GCC countries can diversify their long-term revenues.

The current challenge of absolute water scarcity is currently limited to a handful of island states and MENA countries, but it will soon overwhelm African nations like Kenya and parts of Nigeria, as well as regions in Southern Europe and the American West. At COP28 in November, the hosts have a unique opportunity to firmly place the WEF Nexus on the agenda of the

Koronivia Joint Work on Agriculture program—a UN-led initiative aimed at decarbonizing food systems. A particularly impactful initiative would involve incorporating WEF Nexus technologies and concepts into the agenda, accompanied by the introduction of a collaboration mechanism among dryland countries, supported by the UN Green Climate Fund.

Despite academic suggestions over the past decade, the integration of water, food, and energy systems still has a long way to go. COP28 presents the GCC with a renewed opportunity to shape global policy debates aligned with WEF Nexus ideas. Positioned at the forefront, the GCC can contribute significantly to these discussions, being among the first in the world where water resources are severely constrained, necessitating the identification of economic activities beyond water.

**we**

#### MARTIN KEULERTZ

He is a lecturer in environmental management at the University of the West of England, Bristol, and Adjunct Assistant Professor in the Food Safety Program at the American University of Beirut (AUB).



Plans have been announced throughout the MENA region to create food valleys, produce renewable energy, and increase water availability through desalination and wastewater treatment. Good ideas, not only to increase water, energy and food supply in the area, but also in geopolitical terms. The more the GCC countries can lead the technological revolution, the more they can diversify their income in the long run. Pictured: Doha, Qatar.





Atlantis Park  
from the Palm Jumeirah  
mono-rail.  
Dubai, UAE.

# MIN TURAB BETWEEN AND OLD NEW

IN ARABIC, MIN TURAB MEANS 'TO COME FROM THE EARTH.' AND THE EARTH IS WHAT EVERYTHING CAME FROM AND WHERE NATURE AND TECHNOLOGY, TRADITION AND PROGRESS, WISDOM AND CONSUMERISM COEXIST TODAY. IN RECENT DECADES, RISING OIL REVENUES, GLOBALIZATION AND MASS TOURISM HAVE TRANSFORMED THE LANDSCAPES OF THE ARABIAN GULF. THE COUNTRIES IN THE REGION HAVE SEEN THEMSELVES MOVE FROM THE AUSTERE LIFESTYLE OF THE BEDOUINS TO A POSTMODERN, PROFOUNDLY URBANIZED SOCIETY. THIS CONTRAST, THE DEEP DUALITY OF THESE TERRITORIES, IS THE FOCUS OF THE PHOTOGRAPHER IN THIS PROJECT CARRIED OUT FROM 2009 TO 2016. GRASAS TAKES THE VIEWER NOT TO THE CANONICAL SITES OF TOURIST PILGRIMAGE BUT TO THE SECONDARY SCENARIOS, WHICH REVEAL TO US THE TRUE TRANSFORMATION THAT IS TAKING PLACE, SUDDEN AND INEXORABLE, BEFORE THE EYES OF THE LOCAL PEOPLE. THIS VOLUME STUDIES THE VERY RECENT CENTERS RESULTING FROM THE UNCONTAINABLE URBAN DEVELOPMENT, AND APPROACHES THEM FROM THE OUTSKIRTS, FROM THE MARGINS, FROM THE BACK DOOR. BECAUSE IT IS THE DETAILS HERE THAT TELL THE FULL STORY.

## PHOTOGALLERY BY ROGER GRASAS



Global Village.  
Dubai, UAE.

📍 Roger Grasas (Barcelona 1970) is a documentary photographer. He graduated in Photography and Philosophy and, from the start of his career, he has focused on the land and made travel the backbone of his work, translating experiences into visual art. Since 2005, he has collaborated with several Spanish and international magazines (including National Geographic, Esquire, Wired and Vogue). In 2010, he moved to Riyadh (Saudi Arabia), where he remained until 2015, and it was here that he devoted himself to 'Min Turab' and 'Ha Aretz', his first long-term projects. In terms of publishing, he is represented by Zoom Agence in Spain and Plainpicture in Germany and the United States. Roger Grasas' body of works investigates the role of technology in postmodern society and the state of estrangement and confusion that assails human beings in the increasingly paradoxical and indecipherable contemporary landscape. His works have been exhibited all over the world and have won several international awards.





Burj Khalifa.  
Dubai Downtown,  
UAE.



Abu Dhabi corniche, UAE.



On the opposite page:  
Atlantis Park at the Palm Jumeirah,  
Dubai, UAE.

To the right:  
Dubai downtown  
commercial area, UAE.

Lower left:  
Abu Dhabi Palace entrance,  
UAE.

Bottom right:  
Dubai Miracle Garden,  
UAE.







On the opposite page:  
Water sculpture  
at Dubai Mall, UAE.

To the left:  
Ski Dubai, an indoor ski resort,  
within the Mall of the Emirates,  
Dubai, UAE.

Lower left:  
Turistic resort in the desert.  
Ras al Khaima Emirate, UAE.

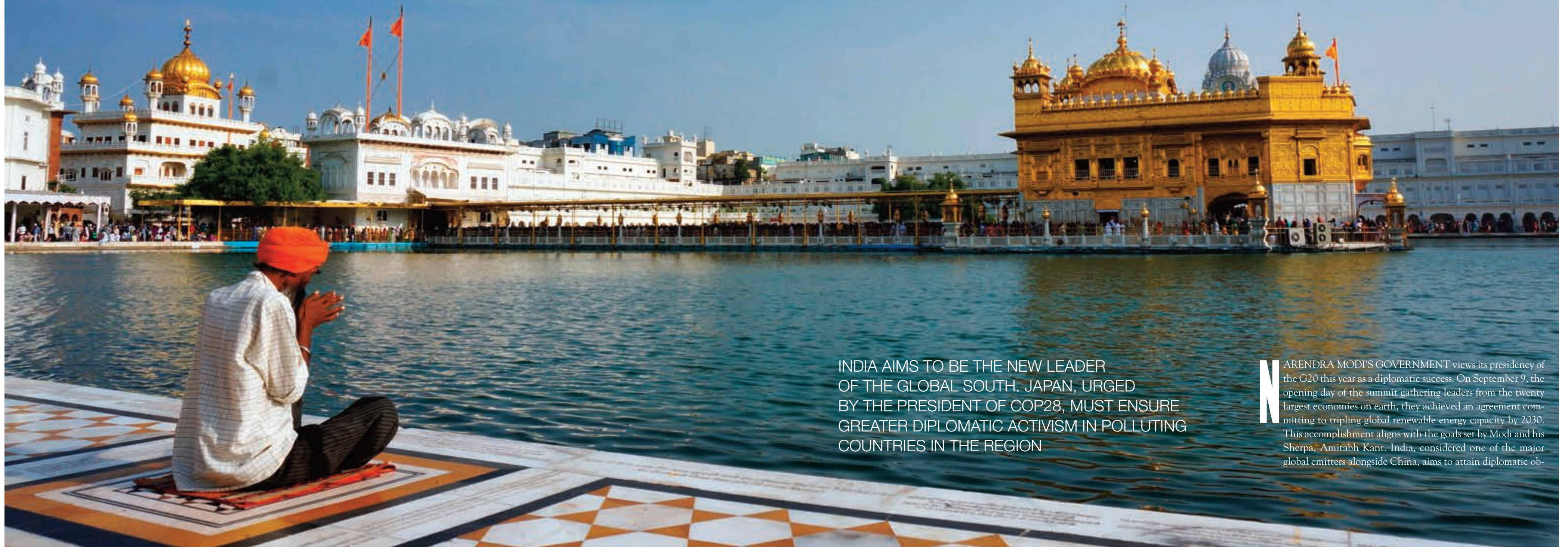
Lower right:  
Dubai downtown skyline,  
UAE.





# THE ROLE OF ASIAN COUNTRIES

by Giulia Pompili



INDIA AIMS TO BE THE NEW LEADER OF THE GLOBAL SOUTH. JAPAN, URGED BY THE PRESIDENT OF COP28, MUST ENSURE GREATER DIPLOMATIC ACTIVISM IN POLLUTING COUNTRIES IN THE REGION

**N**ARENDRA MODI'S GOVERNMENT views its presidency of the G20 this year as a diplomatic success. On September 9, the opening day of the summit gathering leaders from the twenty largest economies on earth, they achieved an agreement committing to tripling global renewable energy capacity by 2030. This accomplishment aligns with the goals set by Modi and his Sherpa, Amitabh Kant. India, considered one of the major global emitters alongside China, aims to attain diplomatic ob-



# Energy numbers

Source: ENI WORLD ENERGY REVIEW

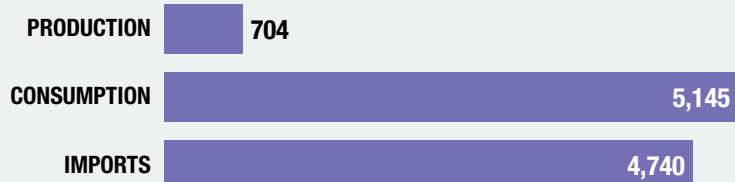
## OIL

(THOUSAND BARRELS/DAY)

### RESERVES

(MILLION BARRELS)

**3,572**



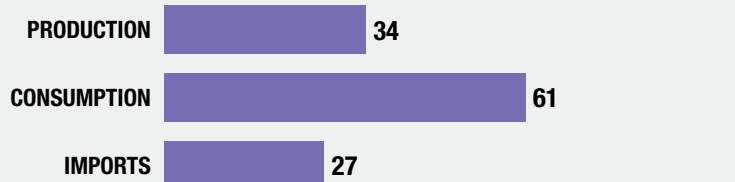
## GAS

(Bcm)

### RESERVES

(Bcm)

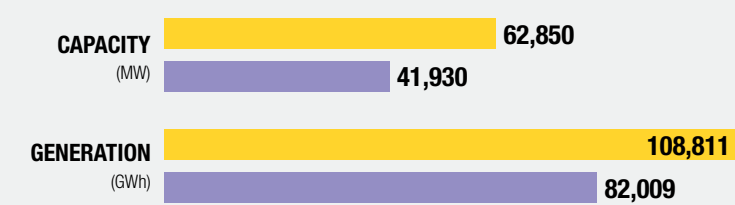
**1,373**



## RENEWABLES

SOLAR

WIND



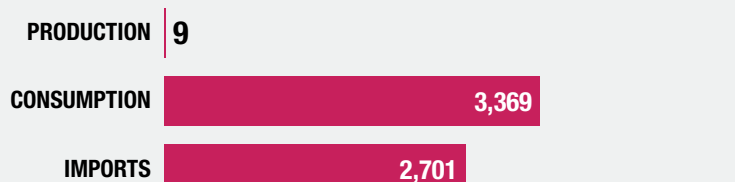
## OIL

(THOUSAND BARRELS/DAY)

### RESERVES

(MILLION BARRELS)

**44**



## GAS

(Bcm)

### RESERVES

(Bcm)

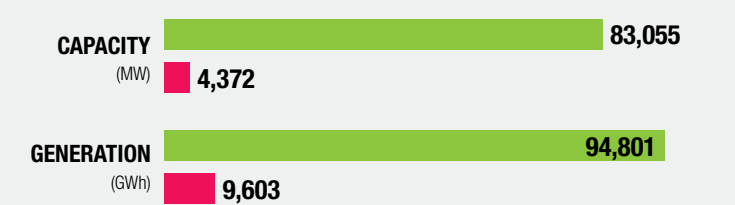
**23**



## RENEWABLES

SOLAR

WIND



jectives and position itself as a leader in the coalition of nations known as the Global South, establishing credibility in geopolitical matters. Slogans such as ‘Giving a Voice to the Global South,’ ‘Solving the Greatest Challenges of the World Together,’ and ‘Ensuring that the Benefits of Development are Universal and Inclusive’ adorned numerous signs along the streets of New Delhi during the summit, often accompanied by Prime Minister Narendra Modi’s image — resembling the beginning of a campaign ahead of the general elections scheduled for April 2024.

The agreement on renewables emerged as the most contentious negotiation topic. The International Energy Agency deems this issue critical to achieving the goal of limiting the global temperature rise to 1.5 degrees Celsius. Two months prior to the G20, during the meeting of energy ministers from member countries, the agreement had faced opposition from Saudi Arabia, Russia, and China, resulting in failure. However, in September, India’s diplomatic efforts proved successful. On the matter of reducing polluting fossil fuels, Delhi opted to maintain the status quo, emphasizing in the final statement the importance of “accelerating efforts towards phasedown of unabated coal power.” Negotiating this point further during the summit might have led to failure, prompting the Indian government to defer discussions to COP28. At the upcoming summit in the Emirates, India is unlikely to make a global commitment to emission reduction, citing the need for an affordable cooling system, according to government sources cited by international media.

### GEOPOLITICAL ALLIANCES BETWEEN ISLAND STATES

There are notable shifts in geopolitical alliances regarding climate action and the approach to COP28. In mid-October, the Indonesian government hosted the inaugural meeting of the Archipelagic and Island States Forum in Bali. This gathering brought together nations most vulnerable to the impacts of climate change, including Timor-Leste, Tuvalu, Niue, Sao Tome and Principe, as well as the federated states of Micronesia, Fiji, and Tonga. The objective was to “continue giving voice to the needs of developing countries,” as stated by Indonesian President Joko Widodo. He emphasized that these threats extend beyond the sea, encompassing rising sea levels and pollution, and also pose challenges to the sovereignty and unity of these nations’ territories.

In a significant move, Indonesia is on the verge of unveiling the detailed plan for a USD20 billion retirement program for its coal-fired power plants. This initiative is backed by G7 economies and a coalition of global financial institutions.

### AL JABER’S APPEAL TO KISHIDA

In late September, COP28 President Sultan Ahmed al Jaber visited Tokyo to urge the Japanese government, led by Fumio



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Kishida, to enhance diplomatic efforts toward polluting nations in the region. As Al Jaber put it, “the north star of the COP28 presidency is keeping 1.5 degrees within reach. To achieve this,” he said in Japan, “we need to remove 22 gigatons in emissions by 2030. At the same time, we know that energy demand will grow by nearly 25 percent by 2045, and two-thirds of that growth will be in Asia. Therefore, the energy choices Asia makes will have a huge impact for the whole world.” Japan, grappling with energy insecurity, relies on fossil fuel imports (primarily LNG) for 85 to 90 percent of its energy needs. A falling yen has increased the cost of energy imports, threatening to trigger an inflationary spiral. To ensure a stable electricity supply while advancing toward carbon neutrality, the Japanese government has quietly returned to nuclear power. Around 30 percent of the country’s electricity was supplied by 54 nuclear reactors that had been completely shut down after the Fukushima disaster in March 2011. Now, even nuclear power plants over 40 years old are being considered for reactivation.

On the global stage, Prime Minister Kishida collaborates with Gulf countries to secure oil imports. In exchange, Kishida aims to offer Japan’s “cutting-edge decarbonization technologies” as part of a green energy initiative.


**we**

### GIULIA POMPILI

She has been a journalist for *Il Foglio* since 2010, where she covers mainly news from East Asia. In 2017, she started *Katane*, the first newsletter in Italian on Asian events. She is the author of the book *Sotto lo stesso cielo* (Mondadori edition).



The G20 economies reached an agreement in September, under India’s presidency, with commitments to triple global renewable energy capacity by 2030. In the opening photo, the Golden Temple in Amritsar, Punjab state, India, considered by Sikhs to be the holiest temple in their religion.



To ensure a stable supply of electricity while keeping up with carbon neutrality, the Japanese government returned quietly to nuclear power, which it had abandoned completely after the disaster at the Fukushima plant: Pictured: the Shinjuku district, Tokyo’s commercial and administrative center and home to the world’s busiest railway station.



# Repowered EU CLIMATE LEADERSHIP or Imperilled!

by Max Münchmeyer

FOR THE EUROPEAN UNION TO EMERGE AS A LEADING PLAYER AT THE DUBAI COP, ITS SUPPORT FOR ADAPTATION INITIATIVES MUST TRANSLATE INTO CONCRETE FINANCIAL COMMITMENTS, ACCOMPANIED BY CREDIBLE CLIMATE INTERVENTIONS AT THE NATIONAL LEVEL

**F**OR DECADES, the EU has aspired to be recognized as a frontrunner in the global battle against climate change. The impetus behind these leadership aspirations may stem from the increasingly evident conclusion that the Union has adeptly addressed, mostly successfully, an energy security crisis without compromising its decarbonization agenda. However, to effectively translate this domestic success into international climate leadership, the EU must proactively establish its position in comparison to other entities vying to lead the global climate agenda. Moreover, while the challenge of fulfilling international climate commitments domestically persists, it is entering

a critical phase. The EU and its Member States must navigate the delicate task of determining whether and how collective promises can be translated into Member State action, all amid growing populist skepticism toward the European green economic transition.

#### A SYNERGISTIC RESPONSE TO THE ENERGY CRISIS

The European Union can reflect on a year and a half during which it successfully advanced its ambitious European Green Deal decarbonization policies amidst a supply emergency, notably in natural gas, triggered by Russia's invasion of Ukraine. In this period, the Union appears to have addressed initial concerns that the supply crisis might jeopardize the EU's goal of achieving climate neutrality by mid-century due to hurried and uncoordinated actions by Member States. High-ranking EU officials, through speeches and strategic documents, consistently emphasized that the continent's long-term energy security must be established on a sustainable foundation, primarily through the swift expansion of domestic renewables and an overall reduction in energy consumption. REPowerEU, the EU's comprehensive set of measures to address the energy supply crisis, was conceived from the outset as a catalyst rather than a com-







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promise for the Union's climate ambitions. This strategy seems to have paid off. In the implementation of REPowerEU, EU legislators have bolstered key components of the Fit for 55 package of legislative proposals. Notably, the renewable energy target has been elevated from the initially proposed 40 percent to a minimum of 42.5 percent by 2030, while the energy efficiency target has been increased from a 9 percent improvement to an 11.7 percent improvement by 2030, relative to a 2020 baseline scenario. These legislative achievements contribute to the von der Leyen Commission's list of climate successes, which encompasses the overhaul of the bloc's Emissions Trading System (ETS) and the pivotal passage of the Car-

bon Border Adjustment Mechanism (CBAM) in May 2023. REPowerEU has also spurred proposals to reform the Union's electricity market, streamlining the integration of renewable energy and energy storage. This largely positive outcome may provide the EU with the credibility required to assume a leading role in international climate negotiations. It positions the EU to elevate global decarbonization ambitions by urging other nations to intensify their efforts and serves as a positive exemplar of how climate ambition can be enshrined in law and policy. Leading up to COP28, the European Union, notably the then EU Executive Vice President for Climate Action, Frans Tim-

mermans, has been actively engaged in climate diplomacy beyond the formal framework of the UNFCCC, aiming to foster a global escalation of ambition. In May 2023, at the seventh Ministerial for Climate Action co-hosted by the EU, China, and Canada, Timmermans advocated for "radical, immediate, and transformative action" on climate change, emphasizing the EU's robust measures as a positive example. Subsequently, in June 2023, the EU, in collaboration with the US and NATO, held discussions on proactively addressing the impacts of climate change on security issues. Internally, the European Council's official climate policy guidelines from March 2023 delineate the contours of EU leadership

by positioning the Union as an ally of least developed and small island states, which are most vulnerable to the adverse consequences of climate change. Often lacking sufficient resources to adapt or recover from extreme weather events, these states are prioritized. During the previous COP in Sharm el-Sheikh in November 2022, the EU supported efforts to establish a dedicated Loss and Damage Fund and advocates for an increase in climate finance to facilitate a globally just transition. However, the crucial question in Dubai revolves around whether and how such a fund will be endowed in order to be impactful. The failure of developed countries to fulfill their commitment to providing a global total of \$100 billion per year for developing countries by 2020 has eroded trust. Consequently, the effectiveness and timely implementation of measures addressing loss and damage remain under scrutiny.

#### THE EU'S LONG PURSUIT OF CLIMATE LEADERSHIP

The European Union currently seems to enjoy the support of its citizens in its pursuit of climate leadership and global agenda-setting. According to a recent Eurobarometer survey that asked EU citizens to identify the actors responsible for addressing climate change, the EU was mentioned as frequently as national governments (56 percent), establishing itself as a significant player in the eyes of respondents. This broad backing provides the EU with a robust internal mandate to assertively advocate for the direction of climate policy on the global stage.

The Union's endeavor to position itself as a leader at COPs is not a recent development. Brussels has been engaged in a decades-long effort to demonstrate Europe's capability to fulfill its climate ambitions and shape the international agenda. While the European Green Deal does not mark the initiation of Europe's climate leadership efforts, it represents the most forthright and ambitious assertion of a more influential global role. Climate leadership is inherently embedded in the European Green Deal, as its principal strategic policy document underscores that the EU can enhance global climate ambition "by setting a credible example, and following up with diplomacy, trade policy, development support, and other external policies."

#### IS EU LEADERSHIP BY EXAMPLE AT RISK?

The notion of exemplarity has long been recognized by policy analysts and academics as a crucial element of climate leadership. Those urging others to enhance their ambition must demonstrate their ability to meet the high standards they advocate for. While pan-European ambition is relatively high, the challenge for the EU lies in ensuring the delivery on the targets set, posing a potential threat to its diplomatic ambitions at COP28. The legal and regulatory competence to fulfill most of the key targets of the European Green Deal resides with the Member States rather than the European Institutions.



With the launch of REPowerEU, European lawmakers have strengthened key parts of the Fit for 55 package of legislative proposals: the target for renewable energy has been increased from the originally proposed 40 percent to at least 42.5 percent by 2030, while the target for energy efficiency, compared to the 2020 baseline scenario, has been increased from a 9 percent improvement to an 11.7 percent improvement by 2030. Pictures: wind turbines in the Netherlands.



A recent report by the European Court of Auditors in Luxembourg raised concerns about the adequacy of Member State efforts to meet the EU's 2030 climate and energy targets, highlighting insufficient mobilization of finance. This finding becomes more critical as efforts get underway to increase Member States' climate ambitions to align with revised Green Deal objectives. By the June 30, 2023 deadline, only a few Member States had submitted updates to their National Energy and Climate Plans (NECPs), with a significant number still outstanding. A scenario where Member States fail to deliver updates or submit plans that diverge considerably from the agreed climate targets would be embarrassing for the Union, undermining its authority. This stress test of the EU's domestic climate governance is unfolding amid the resurgence of far-right populist parties in Member States, often espousing a more climate-sceptic stance.

Looking beyond COP28 and these immediate concerns, the EU must remain adaptable to respond to the evolving landscape of the Paris regime in practice. Anticipating what will most likely be a disappointing Global Stocktake in Dubai, the Union must demonstrate its ability to incorporate lessons into domestic laws. The European Climate Law mandates the establishment of a 2040 decarbonization target within six months of the Global Stocktake, considering its results. The law also requires a reassessment of the EU-wide climate governance structure in light of the Stocktake. Responding swiftly and appropriately to the Global Stocktake results through these channels provides the EU with an opportunity to distinguish itself from other actors.

### COMPETING VISIONS OF LEADERSHIP

Since the announcement of the European Green Deal in late 2019, the global dynamics of climate change leadership have undergone significant shifts. The Green Deal was crafted, in part, to address the perceived absence of a global climate champion, deliberately setting the EU apart from the climate denialist approach of then US President Trump, which culminated in the US withdrawal from the Paris Agreement.

However, the position of the US has undergone profound changes. President Biden, upon taking office, promptly rejoined the Paris Agreement. In November in Sharm el-Sheikh, buoyed by the passage of his landmark Inflation Reduction Act (IRA) earlier in 2022, President Biden apologized for his predecessor's isolationist approach and signaled a clear commitment that the US would be a reliable partner in the fight against global warming.

Given this robust US presence on the global climate stage, and considering the aggressive spending policy of the IRA, which has the potential to impact the EU's ambitions in clean technology manufacturing and critical raw materials, the EU must adopt a diplomatic approach that seeks complementarities



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The European Union—in the run-up to what is likely to be a disappointing and depressing global budget in Dubai—must show that it knows how to incorporate lessons learned into its national laws. By providing a quick but thoughtful and appropriate response to global budget outcomes, the EU has an opportunity to distinguish itself from other actors. Pictured: photovoltaic panels at the La Colle des Mees power plant in southeastern France.

rather than engaging in disputes over agenda-setting powers. A confrontational stance in this regard may not be in the EU's best interest, especially given the strength of the US commitment to climate action.

### THE EU MUST STAY PROACTIVE AND VIGILANT

Far from being able to resting on the laurels of its generally competent and unified response to the energy crisis, the Union must now devote itself to the large diplomatic and legislative push needed to maintain leadership, both domestically and internationally. Reporting by Carbon Brief on the June 2023 Bonn Climate Conference, intended to lay the groundwork for

COP28, highlights significant obstacles to many of the EU's declared climate priorities that persist.

Concerns revolve around the uncertainty surrounding the global phase-out, or a potential “phase-down,” of fossil fuels, particularly in the context of more ambitious mitigation policies. Additionally, progress on the Mitigation Ambition and Implementation Work Programme, established by the Glasgow Climate Pact, has been slow to materialize.

Analyses of the discussions suggest that climate finance may play a pivotal role in alleviating tensions around mitigation. For the EU to emerge as a leader at the Dubai talks, consistent support for adaptation initiatives such as climate aid and the

Loss and Damage Fund must translate into concrete financial commitments. This must be complemented by ambitious and credible climate action at home, demonstrating the EU's ability to follow through on its promises.

### we

#### MAX MÜNCHMEYER

Max Münchmeyer is a researcher in the energy, climate and resources programme of the IAI. He is also a doctoral researcher at the European University Institute (EUI) in Florence, where his work focuses on EU energy governance and energy solidarity.





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# WHEN THE GERMAN LOCOMOTIVE STOPS

by **Brahim Maarad**

GERMANY'S ECONOMIC CRISIS IS REVERBERATING ACROSS ALL EUROPEAN UNION COUNTRIES, CASTING NEGATIVE SPILLOVER EFFECTS. THE VULNERABILITIES OF EUROPE'S FOREMOST ECONOMY ENCOMPASS WORSENING GEOPOLITICAL CONDITIONS, CHALLENGES IN REDUCING CARBON EMISSIONS, AND AN AGING POPULATION

**I**S GERMANY ONCE AGAIN the sick man of Europe?" That was the question emblazoned on the mid-August cover of *The Economist*. It succinctly encapsulated the sentiments of numerous analysts, especially critics divergent from the current administration of Germany led by the socialist Chancellor, Olaf Scholz, in a sometimes challenging coalition with Liberals and Greens. Two pivotal factors are impeding Europe's leading economy: Russia and China. Russia has historically been the primary and nearly exclusive supplier of gas fueling the country's industry. Simultaneously, China stands as the primary trade partner for this Russian gas-dependent industry. The invasion of Ukraine by Russia and heightened competition from China are exposing vulnerabilities in the German model, with repercussions extending beyond Germany to impact the entire European Union, notably Italy, intricately linked to German industry. The economic downturn in Germany has been palpable. The first half of the year witnessed a notably weaker GDP than initially anticipated. Declines in real wages have dampened consumption, and subdued exports have been driven by external demand. The European Commissioner for Economy, Paolo Gentiloni, outlined the situation during the presentation of the summer economic forecast on September 11, stating, "On an annual basis, the German economy is now projected to shrink by 0.4 percent in 2023, a significant downward revision from the 0.2 percent growth projected in the Spring Forecast. In 2024, real GDP is forecast to rebound by 1.1 percent, driven by a recovery in consumption."

According to the European Commission's latest report, since January, confidence indicators for German manufacturing have been on a downward trajectory, particularly impacting energy-intensive industries. The energy price shock following Russia's invasion of Ukraine dealt a severe blow, and even after the shock subsided, energy prices remained elevated, negatively affecting competitiveness. Additionally, in May, indicators for the services sector began to decline, reflecting weaknesses in manufacturing-related services, transport, and logistics.



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## GEOPOLITICS AND TRANSITION: GERMANY'S WEAK POINTS

Back to *The Economist*. Among Germany's weaknesses, the business weekly cites deteriorating geopolitics, the difficulty in cutting carbon emissions and the woes of an aging population. "Geopolitics means that the manufacturing sector may no longer be the cash cow it once was. Of all the major Western economies, Germany is the most exposed to China. Last year, trade between the two countries amounted to USD 314 billion. At one time, that relationship was governed by the profit mo-





tive; now things are more complicated. In China, German car manufacturers are losing the battle for market share to domestic competitors. And in more sensitive areas, as the West ‘reduces’ the risks of its ties with China, some may be severed altogether. Meanwhile, the race for advanced manufacturing and robust supply chains is unleashing a torrent of subsidies to promote domestic industry that will threaten German companies or require subsidies within the European Union,” it says. The sticking point concerns the green transition. Germany’s industrial sector uses nearly twice as much energy as the second largest industrial nation in Europe, and German consumers

have a much larger carbon footprint than the French or Italians. Cheap Russian gas is no longer an option and, in what *The Economist* calls a ‘spectacular own goal,’ the country has turned its back on nuclear power. Lack of investment in grids and a slow permit system are hampering the transition to low-cost renewables, threatening to make producers less competitive. Some concrete examples: Autobahn GmbH, the state-owned company that operates Germany’s celebrated highways, requires companies to obtain 150 permits to transport large wind turbine components, such as blades. With byzantine rules on

load size, faulty software, continuous roadworks and lack of staff to process applications, there is now a backlog of about 20,000 applications. According to Scholz, Germany needs to build three or four new wind turbines a day to meet its emission reduction targets. It is currently at just over one a day. And again: the government’s decision, in the midst of the energy crisis, to take its last three nuclear power plants out of service has benefited neither the country’s energy consumers nor the health of its citizens, due to the temporary reactivation of coal-fired power plants—which are far more polluting than nuclear—to meet demand. Local governments, meanwhile, have

often blocked permits for solar and wind power plants, or the construction of transmission lines to distribute power between the wind-rich north and the sunnier south. “A closer look suggests that the economy is not sick—just slightly off form. There’s no question that Germany is facing structural challenges: the return of geopolitics and geoeconomics, the transition to climate neutrality, demographic change, and a skills shortage. On top of this there are home-made problems, particularly my country’s ability to tie itself up in red tape. And as an exporting nation, we are especially badly hit when supply chains are disrupted and growth in China soft-



ens.” Thus wrote the Vice Chancellor and Minister of the Economy and Climate Protection, Robert Habeck, in response to *The Economist* and detractors.

### THE ENERGY ISSUE

The Green leader assured that in 2024 the other LNG terminals planned in Germany will be completed and coal-fired power plants will be shut down for good. “The gas storage facilities are full. If nothing happens, we will get through the winter well.” However, Germany still needs to be careful. That is why the federal government has created safety nets “with coal-fired power plants, among other things,” the minister explained.

There are currently three operational floating landing stations for liquefied natural gas: at Wilhelmshaven in Lower Saxony, Lubmin in West Pomerania and Brunsbüttel in Schleswig-Holstein. Three more LNG terminals will follow in Wilhelmshaven, Stade and Mukran in Rügen. But there is strong resistance in this area from environmentalists and the German public.

The fact remains that, since the invasion of Ukraine, the share of electricity generated by coal-fired power plants in Germany has risen to nearly one-third. According to the Federal Statistical Office, the share of fossil fuels increased by 4.3 percentage points to 31.4 percent in the first half of 2022, compared with the same period last year. However, wind power and photovoltaics have also increased significantly, to the extent that all renewables put together account for 48.5 percent of electricity generation.

Meanwhile, the country faces its second year without being able to rely on pipelines from Russia. “Germany is much better prepared for this winter than it was last year. We can be quite optimistic, but it’s too early to say it’s a done thing,” says Klaus Müller, chairman of the Federal Network Agency. “Storage facilities are well filled, alternative sources through which we can obtain gas, and consumption savings rates are stable. But residual risks remain,” he pointed out.

However, many unknowns remain: from the weather—in the event of a harsher winter, consumption will surge—to the danger of lack of Russian gas supplies in southeastern European countries, which currently still buy gas from Ukraine and would also have to be supplied through Germany in the event of a shortage. Finally, partial or total pipeline failure scenarios cannot

be ruled out—remember Nord Stream and Baltic Connector. Germany currently imports 4 percent of its LNG from Russia, while 19 percent of its LNG supply is non-Russian; 62 percent of its gas comes from Norway; plus 4 percent of its own production and 7 percent of production from other EU countries.

### THE EFFECTS ON CLIMATE

Germany is Europe’s largest polluter and is currently under obligation by the National Climate Act to reduce greenhouse gas pollution by 65 percent compared to 1990 levels by the end of the decade, with annual targets for each sector: energy, construction, transportation, industry, agriculture and waste. However, at the urging of the Liberals, the federal government agreed last June to abandon sectoral targets and instead focus only on the overall 2030 goal. Despite the fact that renewable energy reached a record 46 percent share in the electricity mix,

greenhouse gas emissions last year were about 761 million tons, missing the target of 756 million tons and falling behind the 2020 benchmark of a 40 percent cut compared to 1990 levels. “The increased use of coal and oil has canceled out the emission reductions achieved through energy savings,” explained the Berlin-based think tank Agora Energiewende.

CO<sub>2</sub> emissions from the energy sector in 2022 were 255 million tons, up 3 percent from the previous year, but slightly below the sector target of 257 million tons.

The industrial sector also met its target, reducing emissions by eight million tons last year through cost-saving measures and due to the fall in production, but the transportation and construction sectors fell short of their targets.

So far, Germany has maintained its productivity by injecting billions of euro, in the form of state aid, to businesses as support against high energy prices. Of the EUR 742 billion authorized by the EU, Germany alone has spent EUR 360 billion. The EU regime favoring subsidies will expire at the end of the year, but Berlin is already pressing for its extension.

**We**

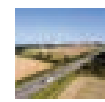
**BRAHIM MAARAD**  
AGI reporter. Brussels correspondent.



Since January, confidence indicators for German manufacturing have been on a downward trend. This was particularly pronounced in energy-intensive industries. There, the energy price shock following Russia’s war of aggression against Ukraine hit particularly hard. On page 37, a commuter train station in Berlin.



The sticking point for Germany concerns the green transition. Germany’s industrial sector uses nearly twice as much energy as the second largest industrial nation in Europe, and German consumers have a much larger carbon footprint than the French or Italians. Pictured on the previous page is a welder in an industrial facility in Munich.



Despite the fact that renewable energy in Germany reached a record 46 percent share in the electricity mix, greenhouse gas emissions last year were about 761 million tons, missing the target of 756 million tons and falling behind the 2020 benchmark of a 40 percent cut compared to 1990 levels. Pictured: a wind farm. On the other page, the Brandenburg Gate.



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# FROM OMC RAVENNA TO COP28

THERE IS CONSENSUS ON THE NEED TO MOVE FASTER TOWARDS BUILDING A NEW AND MORE RESILIENT ENERGY SYSTEM AS QUICKLY AS POSSIBLE, ESPECIALLY AMONG MEDITERRANEAN COUNTRIES

by Giandomenico Serrao

**T**HE PATH TOWARDS a green transition is inevitable and faced daily. Immense challenges lie ahead as the shift from current energy and development models to more sustainable ones involves obstacles, risks to industries and workers, and requires massive financial and technological investments. This transition must be accomplished not just for the climate, but for people's wellbeing and to maintain, even extend, standards of living to less developed nations. Developing countries provided the raw materials that enabled Western growth and development. Now, as they pursue their own growth, they bristle at

hearing "sorry, times have changed. You must adapt to the green transition underway." These issues and more were discussed at the OMC, the Mediterranean's premier energy gathering, in Ravenna. They will also be on the agenda at COP28, scheduled in the United Arab Emirates from November 30 to December 12. Topics vary from adapting the energy transition to charting a path towards net zero emissions, while calling on countries that have yet to commit to development goals that would raise living standards closer to OECD levels. The goal is a truly fair and balanced



“WHAT THE DEVELOPING COUNTRIES ARE TELLING US IS: BY EMITTING CO<sub>2</sub>, YOU HAVE ENRICHED YOURSELVES AND NOW YOU ARE PREVENTING US FROM DOING THE SAME. LET’S FIND A SOLUTION”

**GILBERTO PICHETTO FRATIN**  
MINISTER OF ENVIRONMENT  
AND ENERGY SECURITY



“THE MEDITERRANEAN IS A CENTRAL REGION BECAUSE OF ITS GEOPOLITICAL AND STRATEGIC LOCATION. THE TRANSITION IN THIS AREA IS A GREAT OPPORTUNITY”

**MOHAMED ARKAB**  
ALGERIAN MINISTER OF ENERGY

transition. The new geopolitical landscape - first Russia's invasion of Ukraine, the situation between Hamas and Israel - has underscored the urgency of resolving the “trilemma” of the transition: how to combine and ensure energy competitiveness, availability and sustainability.

#### A NEW AND MORE RESILIENT ENERGY SYSTEM

There is broad consensus on the need to accelerate building a more resilient energy system as quickly as possible, closing the gap between Europe and other nations. Over the next 25 years, the southern Mediterranean region will see substantial growth in energy demand from population growth and economic expansion. Energy consumption is expected to double, with electricity consumption potentially tripling. How can this growing need be met? Experts say it will require tapping conventional gas resources, located mainly in the South, as well as abundantly available but still largely untapped renewables (includ-

ing onshore and offshore wind, bioenergy and marine sources). Europe is called on to promote and support greater collaboration with Mediterranean countries, harnessing their combined expertise, technologies and resources to ensure sustainable growth and reduced CO<sub>2</sub> emissions.

In light of the latest geopolitical developments, it becomes increasingly urgent to broaden the perspective of current policies towards an inclusive, global goal. This means catalyzing synergies between the northern and southern Mediterranean shores, building a bridge to the upcoming COP28, and sustaining dialogue on the energy transition.

At the OMC in Ravenna, Italy's Minister of Environment and Energy Security, Gilberto Pichetto Fratin, emphasized the relevance to COP28 of the issues discussed. “Developing countries are telling us: ‘By emitting CO<sub>2</sub>, you enriched yourselves and now you're stopping us from doing the same. Let's find a solution,’” he reminded the audience. Therefore, ahead of COP28,

the minister stressed that our challenge is demonstrating that global pathways to decarbonization exist. This is why involving major producers is important. In light of this, discussions will also cover adaptation, mitigation and the ‘third leg’ - financing. “Italy has allocated 4.2 billion euros to a climate fund,” the minister said, noting around 3 billion “will fund, at Prime Minister Giorgia Meloni's urging, the Mattei Plan - not just an energy plan, but Italy's commitment to joint Mediterranean and Middle East growth, as a contribution to COP28.”

#### STRATEGIC COOPERATION WITH AFRICA

The Mattei Plan that was recently approved by Italy's cabinet aims to “bring together Europe's energy supply struggles with Africa's production potential,” Prime Minister Giorgia Meloni explained. “If we succeed in forging strategic cooperation with African countries supporting our mutual futures, together we can solve many problems.” The plan aims to make Italy “the

gateway” - Europe's energy hub - with a geostrategic role putting us “back at the center of the Mediterranean.”

Other nations share this aim. At OMC Ravenna, Egypt's Petroleum Minister Tarek El Molla emphasized its energy sector “wants to work with all stakeholders on decarbonization and climate neutrality goals, continuing efforts we will present at COP28.” Algeria's Energy Minister Mohamed Arkab agrees: “Mediterranean cooperation is crucial for cooperative development,” he said. “The Mediterranean is central given its geopolitical and strategic position. The transition here is a great opportunity.”

**GIANDOMENICO SERRAO**  
Journalist who writes for Agi and covers energy, economics and finance.



# Pope Francis's Commitment

by Roberto Di Giovan Paolo

ON THE EVE OF COP 28, POPE FRANCIS RENEWS HIS CALL FOR THE INTERNATIONAL COMMUNITY TO ACHIEVE MORE AMBITIOUS CLIMATE GOALS, URGING THE MOST ADVANCED COUNTRIES TO TAKE STRONG RESPONSIBILITY, POINTING THE WAY TO A NEW DIPLOMACY

**P**OPE FRANCIS PULLED no punches in his “Laudate Deum” on October 4, the day Christian churches honor St. Francis, a figure also dear to other faiths. Eight years after his environmental manifesto “Laudato Si’,” the pope resumed exhorting on climate, citing studies (particularly the IPCC’s), calling out European nations and world powers, reviewing industrial phases and development levels, and analyzing the COPs leading to November’s key conference in the UAE. In short, he did not shy from specific critiques and proposals, as expected from a religious leader of such stature, but also the head of Vatican City State, which leverages its role as guardian of diplomatic multipolarity.





IF WE ARE CONFIDENT IN THE CAPACITY OF HUMAN BEINGS TO TRANSCEND THEIR PETTY INTERESTS AND TO THINK IN BIGGER TERMS, WE CAN KEEP HOPING THAT COP28 WILL ALLOW FOR A DECISIVE ACCELERATION OF ENERGY TRANSITION, WITH EFFECTIVE COMMITMENTS SUBJECT TO ONGOING MONITORING.

Rather than simple testimony, Francis positively lays out a vision grounded in the belief that these worldly events matter.

**THE CALL FOR A BREAKTHROUGH COP**

The pope fully endorses the main theses from annual UN and IPCC reports: Climate change is undisputed, potentially a long-term planetary phase, and one we are now emphatically living in. Since the late 1800s and the first industrial revolution, human activity's role is clear. Given IPCC warnings of a narrowing window to act, Francis declares we are near an irreversible "breaking point" and must find the strength to stop sooner.

Born in Latin America, Francis' origins shape his views, but he does not merely defend developing nations out of principle or engage in environmental romanticism. Rather, he urges learning from recent economic crises and COVID-19 to spark creativity in work and innovation, leveraging crises as opportunities. Progress requires a global vision and new multipolarity. "More than saving the old multilateralism, the challenge appears to be to reconfigure it given new realities," Francis states pragmatically. While "old diplomacy" retains import, it has not generated models responsive to today's world. Yet once reconfigured, it could aid solutions, as centuries of experience cannot be discarded either.

Francis makes an urgent call to fully do our duty at COP28 and after. "If we are confident in transcending petty interests for bigger thinking, we can hope COP28 decisively accelerates the energy transition with ongoing monitoring of commitments. It can represent a turning point, proving efforts since 1992 were serious, or else greatly disappoint and jeopardize progress." The pope unequivocally urges implementing the "binding" 2015 Paris Agreement. He touches on the issue central across recent COPs: commitments must be met not just by some nations, and the unfulfilled pledge of over \$100 billion annually for developing nations from 2020-2025 must not be forgotten.

**INVOLVEMENT FROM ALL**

"We must move beyond appearing concerned without courage



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LET US PUT AN END TO THE IRRESPONSIBLE DERISION THAT WOULD PRESENT THIS ISSUE AS SOMETHING PURELY ECOLOGICAL, "GREEN", ROMANTIC, FREQUENTLY SUBJECT TO RIDICULE BY ECONOMIC INTERESTS. LET US FINALLY ADMIT THAT IT IS A HUMAN AND SOCIAL PROBLEM ON ANY NUMBER OF LEVELS. FOR THIS REASON, IT CALLS FOR INVOLVEMENT ON THE PART OF ALL.



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for real change..." Francis states, adding bluntly, "Let us end the irresponsible derision presenting this as a purely ecological, 'green,' romantic issue, frequently ridiculed by economic interests. Let us admit it is a human and social problem on many levels, requiring all to engage."

The pope's wake-up call resonates through the world's diplomatic corridors, targeting major emitters like China and the U.S., but also calling out prominent emerging nations like India. At recent COPs, India adeptly framed the issue as a clash between elite tech haves and countries needing reasonable growth and time for adaptation. While valid, this cannot halt overall efforts requiring flexibility together with firm, clear universal goals.

COP28 cannot become another stalemate. The UN's image and the Vatican's vision of multipolar diplomacy depend on progress.

COP president Al Jaber recognizes this, undertaking outreach since September to build consensus around proposals. Meanwhile, the Vatican has good motives to apply pressure. The aftermath of Francis' action remains unclear, but considering "Laudato Si's" influence over the last eight years, divisions on his views in the Vatican, associations and civil society far from Rome would be no surprise.

**we**

**ROBERTO DI GIOVAN PAOLO**

A journalist, he has written for, among others, ANSA, *Avvenire* 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.

Quarterly  
Year XIII - N. 58 November 2023  
Authorization from the Court of Rome  
no. 19/2008 dated 21/01/2008

*Publisher:* Eni spa  
*Chairman:* Giuseppe Zafarana  
*Chief executive officer:* Claudio Descalzi  
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*Augmented reality:* Viewtoo • www.viewtoo.it

*Printer:* Quintily S.p.A.  
Viale E. Ortolani, 149/151 00125 Roma  
www.quintily.it

Sent to press on November 20, 2023

*Paper:* Arcoset 100 grammi

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