

How Germany Deflected Pressure to Spend and Even Won an Ally



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Germany backed further off a full-scale economic stimulus at a meeting of global finance chiefs, a remarkable outcome given relentless calls for action from Europe, the U.S. and international institutions.

Germany's success in deflecting the pressure suggests that Finance Minister Olaf Scholz, who came to Washington with a list of counter-arguments, got off lightly from his Group of 20 colleagues at the annual International Monetary Fund conference ending Sunday.

U.S. Treasury Secretary Steven Mnuchin, who publicly suggested Germany and China should enact growth-boosting policy measures, avoided singling out Europe's biggest economy behind closed doors, according to two people familiar with the

private discussion who asked not to be identified.

Some other G-20 delegates repeated the IMF's general stance that governments with fiscal leeway should do more to strengthen the global economy. The Treasury didn't immediately respond to a request for comment.

"The chorus here in town is especially heavy on Germany to use its fiscal space," said Robin Brooks, chief economist at the Institute of International Finance, a Washington-based trade group for the financial industry.

German officials had prepared a detailed line of defense: that Chancellor Angela Merkel's government is already investing extensively, including an extra 54 billion euros (\$60 billion) in spending through 2032 to counter climate change.

'Very Positive'

Those arguments appeared to win some converts. IMF Managing Director Kristalina Georgieva said governments that have room to spend more used the meetings in Washington to make their case.

"What was very positive to hear during the meetings is countries with fiscal space are actually taking measures to stimulate the economy," Georgieva told reporters on Saturday. "Germany for example is putting forward a very sizable climate investment strategy that would bring significant growth and investment. They are also looking into what more could be done if necessary."

With a partial U.S.-Chinese trade agreement in sight and a Brexit deal on the horizon, Scholz was emboldened in his defense of a decade of fiscal prudence in Germany. He expressed growing confidence in the government's projection that Germany's slowdown will be moderate and temporary.

"I think we did a lot," he said in a Bloomberg Television

interview. "The more important question is what will happen to the global economy."

Don't Rush It

A "rushed fiscal response" isn't warranted as growth is expected to revive at the end of the year and success in China-U.S. talks would deliver an "immediate boost" to the economy, Scholz told reporters.

For all the artful dodging, Scholz faced a broad front of finance ministers, central bankers and economists pointing at Germany to do more. On Thursday, the government in Berlin cut its 2020 growth forecast to 1% from the previous 1.5%. Data due next month may show the economy slipped into recession.

To shift the blame game on slow growth and inflation away from central banks, former European Central Bank official Lorenzo Bini Smaghi said governments, including Germany, have a role to play in stepping up borrowing and spending to support growth.

"If fiscal policy in Germany and other countries are not willing to do that job, it is too easy to blame the central bank," he said on a panel.

Low or negative interest rates in many countries leave little room for monetary policy, South African Reserve Bank Governor Lesetja Kganyago said in an interview.

"Countries with fiscal space must utilize the fiscal space," he said.

Nebras and Kepco in deal to boost joint energy investments



Nebras Power, a joint venture of Qatar Electricity and Water Company (60%) and Qatar Holding (40%), has entered into an agreement with Korea Electric Power Corporation (Kepco).

Under this agreement, Nebras Power and Kepco will jointly identify and invest in projects that utilise different fuels, including renewable energy.

The memorandum of understanding (MoU) between Nebras Power, the leading Qatar-based power investment company, and Kepco, the largest state-owned utility provider in Korea, is a pioneering agreement that strengthens the strategic co-operation between two international companies in the field of energy investments.

"At Nebras Power we are always endeavouring to strengthen our relationships with prominent international organisations through seminal projects and initiatives. This MoU with Kepco illustrates our promise to broaden our portfolio of investments worldwide," according to Fahad bin Hamad al-

Mohannadi, Nebras Power, chairman.

Nebras Power is currently focused on building its investment portfolio in a progressive and balanced manner as part of its commitment to the 2030 National Vision.

Further to this mandate, it will continue to hike its generation capacity from electricity and water while taking into account the importance of diversity in fuels.

“This agreement is representative of Nebras Power’s prominent role in the energy sector and its ambition to secure robust investments globally by creating new partnerships and studying investment opportunities with trusted international partners,” said Khalid Mohamed Jolo, chief executive of Nebras Power.

Global Finance Chiefs Pledge to Use All Tools to Aid Growth



Global finance ministers and central bankers pledged to use all their tools, including fiscal policy, to support demand amid a “highly uncertain” outlook and elevated risks.

“The outlook is highly uncertain and subject to elevated downside risks,” including trade tensions, policy uncertainty and geopolitical risks, according to a communique issued Saturday by the International Monetary and Financial Committee, the steering panel of the IMF’s 189 member

countries. "We will employ all appropriate policy tools, individually and collectively, to mitigate risks, enhance resilience and shore up growth to benefit all."

The statement was released in Washington, where the IMF and World Bank are holding their annual meetings.

An International Monetary Fund Committee (IMFC) plenary session on October 18.

"Available fiscal space should be used to support demand as needed," and monetary policy should aim to keep inflation approaching or stabilising around targets, the communique said.

The downbeat statement caps a week during which the IMF made a fifth-straight cut to its 2019 global growth forecast, projecting the weakest expansion since 2009. The fund's chief economist, Gita Gopinath, earlier warned that "there is no room for policy mistakes and an urgent need for policymakers to co-operatively de-escalate trade and geopolitical tensions."

"All tools can be applied – monetary policy where there is space for it" as well as fiscal measures and structural reforms when appropriate, IMF managing director Kristalina Georgieva said on Saturday at a press conference in Washington. Governments need to take these steps to stop or reverse the slowdown, she said.

Global finance leaders met against a backdrop of slowing growth in the world's major economies and central banks grappling with limited room to support expansion.

In the US, the Federal Reserve has reversed some of its tightening to insure against downside risks, though consumer spending has largely held up amid weakness in manufacturing and business investment. China said on Friday that economic growth decelerated to the weakest pace since the early 1990s, yet it may be starting to stabilise as fiscal stimulus works its way through the economy.

For the euro area, policymakers don't expect to go beyond the interest-rate cuts and quantitative easing pushed through by European Central Bank President Mario Draghi in September

unless the economy is hit by shocks such as escalating trade tensions or a no-deal Brexit, according to regional officials. While the US and China have touted progress toward a trade agreement that leaders Donald Trump and Xi Jinping would sign next month, the situation remains uncertain and there's no indication that the nations are preparing to roll back tariffs implemented over the past two years.

The IMFC statement repeated language from the prior statement in April saying that "we recognise the need to resolve trade tensions."

But the latest missive added a line saying that a "strong international trading system with well-enforced rules addressing current and future challenges would support global growth."

Il gas del Qatar guarda all'Europa



È l'opinione di Roudi Baroudi, veterano del business energetico, spesso d'aiuto per delineare la policy energetica per aziende, governi, e organismi sovranazionali come l'Unione Europea. Baroudi, attualmente Ceo della Energy and Environment Holding, con sede a Doha, è intervenuto sul tema: «Perché il

Qatar è cresciuto così tanto nel business del gas». «Una volta capita l'estensione delle riserve naturali di gas del paese – spiega Baroudi – il governo ha intrapreso studi organici per comprendere le condizioni di mercato e le possibilità di sviluppo, definire le necessità interne, e identificare i migliori partner commerciali. Come risultato di questa immediata scommessa, il Qatar in poco tempo è diventato l'esportatore numero uno di gas liquido. Posizione che detiene tutt'ora». E non solo da un punto di vista interno. Ad esempio Qatar Petroleum è in trattative con vari partner per la costruzione di un nuovo terminale di gas liquido sulla costa tedesca del mare del Nord. E un nuovo impianto di distribuzione verrà implementato nel porto belga di Zeebrugge entro il 2044. Ulteriori sviluppi dipingono il Qatar in prima posizione per quanto riguarda l'aspetto mercantile e finanziario. Nel luglio scorso Qatar Petroleum ha raggiunto la quota del 49 per cento in una joint venture con la Chevron, per lo sviluppo di un imponente complesso petrolifero sulla costa degli Stati Uniti, in prossimità della zona più interessante per la produzione di «shale gas». E solo qualche settimana fa QatarGas è entrato nella storia, quando una delle sue navi da trasporto per il gas, la Thumama, è riuscita – per prima – a completare il trasferimento di una unità di rigassificazione dal terminal di Moheshkhali, in Bangladesh. «Come si vede, le attività di estrazione, e trasformazione qatariote sono lanciate verso il futuro, e ci si aspettano grandi cose», ha commentato Baroudi.

مؤتمر في موناكو عن ترسيم

الحدود في البحار... بارودي: الاستعانة بالخبرات التقنية ستجعل إسرائيل تخسر 50% مما تدعيه



international hydrographic organisation، بدأ في موناكو اليوم مؤتمر نظمته المتخصصة في ترسيم الحدود في البحار والمحيطات من خلال تطوير تقنيات هذه العملية، وملاءمتها مع القوانين الدولية ولا سيما قانون البحار وعمل المنظمات والجمعيات التابعة للأمم المتحدة المتخصصة، وذلك بهدف الحد من هذه النزاعات والتوصل إلى حلول ترضي الأطراف المتنازعة، وتستخدم هذه المنظمة التي تشارك فيها دول من مختلف أنحاء العالم تقنية جديدة بواسطة الأقمار الاصطناعية تؤمن دقة متناهية في إظهار الوقائع الجغرافية التي قد تكون شابتها أخطاء فرسمت الخرائط وفق هذه الأخطاء ما تسبب في النزاعات لبنان ليس عضوا في هذه المنظمة ولكنه يستطيع من خلال الاعتماد على قدرات هذه المنظمة وخبراتها التقنية أن يتوصل إلى حل لما تدعيه إسرائيل من حقوق لها في المنطقة البحرية المتنازع عليها، ومساحتها 860 كيلومترا مربعا.

وقال خبراء في هذه المنظمة إن صور الأقمار الاصطناعية التي بحوزتهم عند رأس الناقورة ستساهم في تحديد دقيق للخط الفاصل B1 للنقطة بين المنطقتين الاقتصاديتين لكل من لبنان وإسرائيل، من قبل طرف ثالث محايد لا تتدخل السياسة الإقليمية والدولية في توجيهه.

ولفتوا إلى أن في إمكان لبنان الاستفادة من قدرات هذه المنظمة في عملية استكمال ترسيم حدود المنطقة الاقتصادية مع قبرص التي هي عضو في هذه المنظمة، حيث يمكن للجزر قبالة طرابلس أن تخلق إشكالية في هذه العملية لجهة مساحة هذه المنطقة من الجهة اللبنانية أو أن تساعد في إيجاد الحل، كما يمكن لخبرات هذه المنظمة أن تساعد في حل الخلاف القائم على الحدود البحرية بين لبنان وسوريا التي هي عضو في هذه المنظمة، ولكن عضويتها معلقة.

الخبير اللبناني الاقتصادي في شؤون الطاقة رودي بارودي المشارك في هذا المؤتمر، لفت إلى أن "الاستعانة بالخبرات التقنية لهذه المنظمة وملاءمتها مع ما يفرضه القانون الدولي سيجعل إسرائيل تخسر على الأقل 50 % مما تدعيه من حقوق لها في المنطقة المتنازع عليها مع لبنان"، لافتاً إلى أن "التقنيات العالية التي أصبحت توفرها الأقمار الاصطناعية واستناداً إلى القوانين الدولية قادرة على حفظ الحقوق اللبنانية كاملة، ولا سيما أن أخطاء حصلت في ترسيم الخط البحري اللبناني نجمت عن عدم توفر التقنيات الدقيقة في ذلك الوقت". وربما عن تسرع غير مقصود.

Qatar sets perfect example for would-be energy exporters in Mediterranean



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It's because Qatar had made an early bet on liquefied natural gas that helped the country to emerge as the world's most prolific exporter of LNG, a position it retains to this day. It was good governance that made sure this resource has been very well-managed, a top energy expert said.

Attending a major energy congress in Athens, Roudi Baroudi, a veteran of the energy business who has helped shape policy for companies, governments, and even entities like the European Union, the World Bank and the United Nations, noted the North Field Expansion Project is a massive undertaking that will grow LNG output from the current 77 million tons per annum to 110 MTPA over the next five years. That will not only increase Qatar's lead over other producers, but also give it the

wherewithal to keep diversifying its holdings abroad.

Speaking on the sidelines of the First Annual Eastern Mediterranean Energy Leadership Summit, Baroudi (pictured), currently the CEO of Doha-based Energy and Environment Holding, elaborated on 'how did a tiny country like Qatar become such a giant in the gas business?'.

" Once the full extent of the country's natural gas reserves were understood, the government sought out the best advice, then undertook comprehensive studies to understand market conditions and forecasts, define its own needs and capabilities, and identify the best partners. As a result of these analyses, Qatar made an early bet on liquefied natural gas that soon made it the world's most prolific exporter of LNG, a position it retains to this day." He noted that it's not only this domestic megaproject (North Field Expansion) that matters. Qatar Petroleum, for instance, is in talks to secure partners for the establishment of a new LNG distribution terminal on Germany's North Sea Coast. Again, this a mutual benefit proposition from start to finish, with the German side increasing its energy security and the Qataris lining up future revenues by securing access to a crucial market. In addition, QP recently entered a new agreement that books LNG offloading facilities at the Belgian Port of Zeebrugge until 2044.

Other developments paint a similar picture of a wide-ranging strategy that keeps Qatar in its leading position by capitalizing on both its market influence and its financial resources. In July, QP took a 49 percent stake in a joint venture with Chevron Phillips Chemical Co. (51 percent) that will see the partners develop a huge petrochemical complex – including the world's largest ethylene cracker – on the US Gulf Coast, taking advantage of the proximity of America's most productive shale gas regions.

And just a couple of weeks ago, QatarGas made history when one

of its massive Q-Flex LNG carriers, the Thumama, became the first vessel of its class to complete an open-water ship-to-ship transfer to a floating storage and regasification unit off Bangladesh's Moheshkhali Terminal. Qatari investments and expertise are also driving exploration activities in several countries around the world. "Qatar is not sitting on its hands. Day in and day out, in all sorts of ways, the country is constantly taking stupendous strides toward bigger and better things to come", he said.

Roudi Baroudi

The clean energy fast track



The global transition from carbon-intensive fossil fuels to cleaner, more reliable renewables like wind and solar is already well underway. But the big question – for the 2020s

and beyond – is how fast it will happen. A slow transition would mean that energy-sector incumbents continue to flourish, and we would all but certainly miss the emissions-reduction targets enshrined in the 2015 Paris climate agreement. But if the transition is rapid, incumbents will experience varying degrees of disruption – the price of keeping the Paris targets well within reach. As matters stand, both scenarios are possible, representing two paths that lie before us. In a new report for the World Economic Forum's Global Future Council on Energy, we and our co-authors identify four key areas that will determine which path we take. The Speed of the Energy Transition offers compelling evidence that the transition is coming fast, and that all stakeholders in the global energy system – which is to say, everyone – must start preparing.

One area where the gradual and rapid scenarios diverge is adoption of renewable energy. When will renewables start displacing incumbents? For markets, the key moment will be when renewables make up all of the growth in energy supply, as well as all the growth in electricity supply. That, most likely, will happen in the early 2020s, long before fossil fuels lose their dominant share of total energy supply. As renewables become the leading growth industries in the energy sector, financial markets will increasingly reallocate capital accordingly.

A second area concerns innovation in energy technology, and whether growth in new applications is linear (the gradual scenario) or exponential (the rapid scenario). Solar and wind are already cheaper than fossil fuels when it comes to generating electricity, and electric vehicles are close to challenging internal-combustion-engine cars on price. The evidence suggests that the barriers to growth for EVs in the foreseeable future are soluble. Moreover, new waves of innovation are forthcoming, in the form of nascent but already viable technologies such as green hydrogen energy. Prices for renewables will most likely drop far below those of incumbent

energy sources – and fast – leading to exponential growth in green energy.

A third key area is public policy. Will policymaking remain cautious, or will it become more dynamic and ambitious as new technologies create opportunities to improve the design and functioning of markets? Inertia being a powerful force, existing policies have been limited in scope. But history teaches us that there are tipping points: Once genuine change comes, it tends to be adopted rapidly across the board – as in the case of laws prohibiting smoking indoors.

Given that new technologies are already providing better solutions for consumers' energy needs, policymakers inevitably will respond to their constituents' demands. Once enough politicians recognize that the energy transition is not expensive, and will actually boost competitiveness (thereby reducing prices), they will update the rules governing energy markets to make way for the change that is already underway.

The last key area is emerging markets, which could either follow the fossil-fueled path of developed countries, or leapfrog to newer energy technologies. Countries like China and India undoubtedly need to generate far more energy for their citizens, and there are almost 1 billion people worldwide who still lack access to electricity. But that doesn't mean emerging and developing countries have to opt for high-emission fossil fuels.

Just as mobile phones made landline telephony irrelevant in much of the developing world, increasingly affordable renewables can become the obvious first choice for generating energy.

From our perspective, the evidence clearly points to a rapid energy transition in the years ahead. The danger is that key stakeholders – whether policymakers or investors – will mistake which path we are on, and make poor decisions. If so,

we will all have to bear the costs of stranded high-carbon assets and bad investments in obsolete technologies. Worse, we will have missed an early opportunity to achieve sustainability and minimize the risk of catastrophic climate.

Everyone – from innovative technology startups to energy incumbents and government policymakers – has a role to play in determining which path we take. If stakeholders recognize the rapid pace of the global energy transition already underway and embrace the change, we can still hit the Paris targets and have a planet that allows everyone to thrive.

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U.S. shale firms cut budgets, staff as oil-price outlook dim



ODESSA, Texas (Reuters) – Oil producers and their suppliers are cutting budgets, staffs and production goals amid a growing consensus of forecasts that oil and gas prices will stay low for several years.

The U.S. has 904 working rigs, down 14% from a year ago, and even that is probably too many, estimated Harold Hamm, chief executive of shale producer Continental Resources (CLR.N), which has reduced the number of rigs at work.

Bankruptcy filings by U.S. energy producers through mid-August this year have nearly matched the total for the whole of 2018. A stock index of oil and gas producers hit an all-time low in August, a sign investors are expecting more trouble ahead.

“You’re going to see activity drop across the industry,” Earl Reynolds, CEO of Chaparral Energy (CHAP.N), told Reuters at the EnerCom oil and gas conference last month.

The Oklahoma energy firm has slashed its workforce by nearly a quarter, trimmed its spending plan by 5%, and agreed to sell its headquarters and use some of the proceeds to reduce debt.

Investment bank Cowen & Co estimated last month that oil-and-gas producers spent 56% of their 2019 budgets through June, based on its review of 48 U.S. companies. It expects total spending this year to fall 11% over last year, based on proposed budgets.

The slowdown in drilling is spurring cost-cutting in oilfield services, including staff cuts and restructurings at top firms Schlumberger and Halliburton Co. Schlumberger plans a writedown yet to be determined this quarter, noting its results in North America have been “under significant pressure,” CEO Olivier Le Peuch said on Wednesday.

Halliburton is paring its North American workforce by 8% because of customer spending cuts, and National Oilwell Varco recently offered buyouts to its U.S. workers.

“The service sector I think is going to be flat,” said Superior Drilling Services CEO Troy Meier, whose firm canceled plans to add new machinery.

Such signs of a downturn come as the shale sector had just started generating the cash flow long demanded by investors, who have grown weary of drilling expansions without returns. Last quarter, a group of 29 top publicly-traded producers generated more in cash – \$26 million – than it spent on drilling and dividends, according to Morningstar (MORN.0) data provided by the Sightline Institute and the Institute for Energy Economics and Financial Analysis. A year earlier, the same group had spent \$2.4 billion more than it generated.

Despite that progress, many small to mid-sized shale firms are now pulling back on production targets amid the gloomy price projections.

A slowing oil industry could weigh on the United States economy. The boom in shale oil output added about 1 percent to U.S. gross domestic product, or 10% of growth, between 2010 to 2015, according to the Federal Reserve Bank of Dallas. In

Texas, the center of shale oil production, energy employment dipped 1.8 percent in the first six months of 2019, according to the Dallas Fed. New drilling permits in the state fell 21% in July compared with the same month last year, according to state data.

MAJORS STAY THE COURSE

Any broader economic impact, however, could be limited by the massive investments in shale drilling by some of the world's biggest oil firms – Exxon Mobil (XOM.N), Chevron (CVX.N), Royal Dutch Shell (RDSA.L) and BP PLC (BP.L). Even as small and mid-sized firms dial back, the majors continue to pour billions of dollars into years-long shale drilling plans. They have argued their integrated well-to-refinery networks allow them to control costs enough to withstand a sustained period of low prices.

Spokespeople for Exxon, Chevron and BP declined to comment on the industry downturn but referred to previous statements of their longterm commitment to shale. Shell did not respond to requests for comment.

Chevron has focused much of its production growth plans on shale, and CEO Michael Wirth has called its Permian Basin holdings in West Texas and eastern New Mexico the “highest return use of our dollars.”

Exxon CEO Darren Woods told a Barclays energy conference on Sept. 4 that the company continues to take the long view.

“The way we look at the business is tied to some very basic fundamentals that haven’t changed for decades, if not hundreds of years,” he said, noting it took oil a century to replace coal as the world’s dominant energy source.

Exxon has estimated it can earn a double-digit return in the Permian Basin even if oil falls to \$35 a barrel.

BRACING FOR LOW PRICES

U.S. oil prices largely have traded just above \$50 a barrel since last November, requiring higher output to generate the same profit as when prices were higher. Prices this quarter are about 18% lower than this time last year, according to U.S. government data.

U.S. oil prices are likely to remain below \$55 a barrel for the next three years, said Scott Sheffield, CEO of Pioneer Natural Resources (PXD.N), one of the largest oil producers in the Permian Basin. Lackluster prices will result in a “significant fallback in Permian growth” and probably “no growth for most,” he said on a recent earnings call.

Part of the slowdown comes as the best drilling spots in some areas of the field are being “exhausted at a very quick rate,” Sheffield said.

The severity of the looming downturn is a matter of debate.

Flotek Industries Inc (FTK.N), a supplier of oilfield chemicals, has cut staff twice this year. CEO John Chisholm told Reuters that the industry is just “pumping the brakes” as it grapples with well-design issues.

Matt Sallee, a portfolio manager at energy investors Tortoise Capital, expects a longer industry decline.

“It’s hard to see how this gets any better for several quarters,” he said.

Russia LNG ambitions advance with plans for remotest regions



Bloomberg/ Vladivostok

Russia took a step closer to becoming a dominant player in the global liquefied natural gas market as two of its biggest energy companies advanced plans to export the fuel from its remotest corners.

Rosneft PJSC, Russia's top oil company, said yesterday it plans together with its partners in the Sakhalin 1 project to build an LNG export plant in the far eastern port city of De-Kastri. Meanwhile Novatek PJSC, the country's largest LNG producer, made a final investment decision on its \$21bn Arctic LNG 2 plant on the Gulf of Ob.

Natural gas is expected to be the fastest growing fossil fuel through 2040, and it will increasingly be transported in liquid form, according to the International Energy Agency. China, India and other developing countries plan higher imports to bring energy and electricity to their people at a

fraction of the pollution of coal or oil.

The two projects combined could export about 26mn tonnes of LNG a year, which would double Russia's existing capacity. Already the world's top exporter of pipeline gas and second-biggest shipper of crude oil, LNG will give President Vladimir Putin a bigger role in driving the world economy via his country's massive energy resources.

"After the oil price crash of 2015 and a massive addition of Australian LNG, supermajors held back major LNG investments – but that has changed now. The global LNG market is expected to hit a supply deficit by 2023, according to BloombergNEF's latest Global LNG Market Outlook. Projects are now being lined up to capture that gap in the market, and the front-runners are those supported by Big Oil," said Fauziah Marzuki, analyst, BloombergNEF.

Russia, which had 8% of the global LNG market last year, wants to boost that to 20% by 2035 to put it in league with the world's biggest exporters, such as Qatar and Australia. Yesterday's announcements, made at the Eastern Economic Forum in Vladivostok, underscore how quickly the country is progressing toward that goal. Its first plant, at Gazprom PJSC's Sakhalin 2, opened in 2009 and its second, Novatek's Yamal LNG, only started in 2017.

The first production unit at Arctic 2 LNG will come online by the end of the third quarter of 2023, Novatek chief executive officer Leonid Mikhelson said. Once fully complete, the plant will be able to produce 19.8mn tonnes of LNG annually. Rosneft CEO Igor Sechin didn't give a timeline for the far east LNG plant, which he said would be able to produce about 6.2mn tonnes a year.

For now, several export projects, including Yamal, have come online recently and saturated the market, depressing spot LNG prices in Asia to about 60% below where they were a year ago.

California's cross-cutting climate strategy



We are parents, and one of us (Lenny Mendonca) is also a grandparent. We are keenly aware of how the intensifying impact of climate change could affect the futures of not only our children and grandchildren, but also of families throughout California and around the world. Thinking about the effects of climate change, however, doesn't break our will; on the contrary, it only strengthens our resolve to work with California Governor Gavin Newsom to advance his vision for a more sustainable and inclusive economic-growth strategy in our great state.

In fact, California's determination to act only grows as climate effects hit home. Our commitment to innovative climate solutions deepens even as US President Donald Trump's administration attempts to demolish climate protections. (Trump has already taken action 129 times to repeal or weaken climate regulations. Attempting to revoke California's long-

held authority to set its own auto-emissions standards is only the most recent manoeuvre.)

For example, on September 20, Newsom signed an executive order that seeks “to leverage the state’s \$700bn pension investment portfolio and assets to advance California’s climate leadership.” The order “also directs multiple state agencies and departments to review and update overall operations, transportation investments, and use of the state’s purchasing power to advance groundbreaking climate goals.”

Indeed, staying focused on solutions is the only sensible – and moral – option. Just ask Californians living with a longer and more severe “fire season” than ever before, or owners of coastal homes and businesses trying in vain to find insurance to protect their buildings against sea-level rise, or inland residents facing more frequent extreme-heat days. And of course, as with all disruptions, the state’s low-income and disadvantaged communities will disproportionately feel the impacts of climate change. Without support, they will be the least able to adapt and build resilience.

That’s why California is committed to climate leadership through an all-hands-on-deck approach. That means not only reducing greenhouse-gas emissions, but also integrating housing and transportation planning, economic development strategies, and workforce investments. The goal is to achieve a carbon-neutral economy by 2045 while advancing a community-driven transition strategy that implements climate-resilience measures to address the effects Californians are feeling today.

In California, climate change, housing, and transportation are inextricably linked. Nearly 70% of employment growth from 2010 to 2018 was concentrated in the coastal areas around Los Angeles, San Diego, and San Francisco. But housing in those areas is unaffordable for most, meaning that many live far from their workplaces.

As a result, a growing number of Californians are now living a commuter’s nightmare, spending more time in their cars and less time with their families. And longer commutes mean that

California's transportation emissions – which already account for 51% of the state's total emissions – are on the rise.

So, beyond imposing stricter vehicle-emissions standards, Newsom has set a goal of building 3.5 mn new housing units by 2025. Working with the state legislature, his administration has allocated \$1.75bn to boost housing construction by financing loans and tax breaks for developers of affordable housing, especially those building infill housing nearer to employment hubs.

At the same time, California's Regions Rise Together Initiative – led by our two departments under Newsom's direction – aims to create high-quality job opportunities in inland communities, not only in our state's \$50bn agriculture industry, but also in advanced manufacturing, software development, and professional services. In addition to reducing commuter emissions, this will help to ensure that the benefits that have already begun to accrue from our climate and clean-tech investments are more widely shared.

This is not a top-down directive to these regions. Instead, we are focused on finding ways to support the work on sustainable, inclusive growth already occurring across every region of California, while also investing in the critical infrastructure connecting our regions to one another.

For those who must commute, California is investing in its statewide rail network and a high-speed rail strategy. By attracting more investment, jobs, and residents, such infrastructure investments can catalyse the revitalisation of downtown areas that may have lost their vigor.

Meanwhile, to protect the one in 12 California homes facing severe wildfire threats, we are expanding our firefighting resources and investing in cutting-edge technology. Such measures should help to stem the rapid increase in the price of homeowner insurance, which has further aggravated the housing crisis.

Even as California promotes housing development, it is taking care to protect valuable lands, from farms to forests. As the Intergovernmental Panel on Climate Change recently

highlighted, land use must play a central role in climate strategies. If adequately managed and protected, soils and forest lands can store carbon, act as fire breaks for more developed areas, and mitigate flooding and droughts – all while providing valuable economic opportunities.

In fact, California's experience has shattered the myth that climate action must come at the expense of economic prosperity. With a sustainable and inclusive growth strategy, the state has achieved 114 consecutive months of economic expansion. Zero-emission vehicles are now our eighth-largest export.

The climate crisis, decades in the making, is as hard to solve as they come. Building resilience demands a cross-cutting approach. We're proud to work for a state that has committed billions of dollars to developing efficient and alternative transportation, to building affordable housing, to creating good jobs in inland communities, and to expanding health care to help more residents. California is resolute about providing the tools, technology, and leadership to ensure a better tomorrow, for generations to come. – Project Syndicate

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