

Cheaper, changing, crucial: the rise of solar power



AFP/Paris

Generating power from sunlight bouncing off the ground, working at night, even helping to grow strawberries: solar panel technology is evolving fast as costs plummet for a key segment of the world's energy transition.

The International Energy Agency says solar will have to scale up significantly this decade to meet the Paris climate target of limiting temperature rises to 1.5 degrees Celsius above pre-industrial levels.

The good news is that costs have fallen dramatically.

In a report on solutions earlier this year, the Intergovernmental Panel on Climate Change said solar unit costs had dropped 85 percent between 2010 and 2019, while wind fell 55%.

"There's some claim that it's the cheapest way humans have ever been able to make electricity at scale," said Gregory Nemet, a professor at the University of Wisconsin-Madison and a lead author on that report.

Experts hope the high fossil fuel prices and fears over energy security caused by Russia's invasion of Ukraine will accelerate the uptake of renewables.

Momentum gathered pace last Sunday with the ambitious US climate bill, which earmarks \$370bn in efforts to cut greenhouse gas emissions by 40% by 2030.

An analysis by experts at Princeton University estimates the bill could see five times the rate of solar additions in 2025 as there were in 2020.

Nemet said solar alone could plausibly make up half of the world's electricity system by mid-century, although he cautioned against looking for "silver bullets".

"I think there really is big potential," he told AFP.

Rapid changes

The "photovoltaic effect" – the process by which solar cells convert sunlight to electrical energy – was first discovered in 1839 by the French physicist Edmond Becquerel.

After decades of innovations, silicon-based solar cells started to be developed in the United States in the 1950s, with the world's first solar-powered satellite launched in 1958.

The IPCC said of all energy technologies, small-scale ones like solar and batteries have so far proved quicker to improve and be adopted than bulkier options like nuclear.

Today, almost all of the panels glimmering on rooftops and spreading across vast fields are made in China using silicon semiconductors.

But the technology is changing quickly.

In a recent report, the IEA said these new solar cells have proven to be one-fifth more efficient in converting light to energy than standard modules installed just four or five years ago.

There are also a host of new materials and hybrid cells that experts predict could supercharge efficiency.

These include cheap, efficient and lightweight "thin film" technologies, like those using perovskites that can be printed

from inks.

Experts say they raise the prospect of dramatically expanding where solar energy can be harvested – if they can be made durable enough to withstand a couple of decades of use.

Recent research has raised hopes that it could be possible.

In one study, published in the journal *Science* in April, scientists added metal-containing materials to perovskite cells, making them more stable with efficiency near traditional silicon models.

Other research mixes materials for different purposes.

One study in *Nature* used “tandem” models, with perovskite semiconductors to absorb near-infrared light on the solar spectrum, while an organic carbon-based material absorbed ultraviolet and visible parts of the light.

And what happens after sunset?

Researchers from Stanford said this year they had produced a solar cell that could harvest energy overnight, using heat leaking from Earth back into space.

“I think that there’s a lot of creativity in this industry,” said Ron Schoff, who heads the Electric Power Research Institute’s Renewable Energy and Fleet Enabling Technologies research.

Location, location

Generating more energy from each panel will become increasingly crucial as solar power is rolled out at greater scale, raising concerns about land use and harm to ecosystems.

Schoff said one efficiency-boosting design that is becoming more popular for large-scale projects is “bifacial” solar.

These double-sided units absorb energy not just directly from the sun’s rays, but also from light reflected off the ground beneath.

Other solutions involve using the same space for multiple purposes – like semi-transparent solar panels used as a protective roof for strawberry plants or other crops.

India pioneered the use of solar panels over canals a decade ago, reducing evaporation as they generate power.

Scientists in California have said that if the drought-prone US state shaded its canals, it could save around 63bn gallons. Construction on a pilot project is due to begin this year.

All shapes, sizes

Experts say solar will be among a mix of energy options, with different technologies more suitable for different places.

Schoff said ultimately those energy grids with more than 25% solar and wind need ways to store energy – with batteries or large-scale facilities using things like pumped water or compressed air.

Consumers can also play their part, said Nemet, by shifting more of their energy use to daytime periods, or even hosting their own solar networks in an Airbnb-style approach.

He said the modular nature of solar means it can be rolled out in developing countries with sparse access to traditional grids.

“You could have solar on something as small as a watch and something as big as the biggest power plants in the world,” he said.

“I think that’s what’s making people excited about it.” – Reuters

Coal giants are making mega profits as climate crisis grips the world



The globe is in the grips of a climate crisis as temperatures soar and rivers run dry, and yet it's never been a better time to make money by digging up coal.

The energy-market shockwaves from Russia's invasion of Ukraine mean the world is only getting more dependent on the most-polluting fuel. And as demand expands and prices surge to all-time highs, that means blockbuster profits for the biggest coal producers.

Commodities giant Glencore Plc reported core earnings from its coal unit surged almost 900% to \$8.9 billion in the first half – more than Starbucks Corp. or Nike Inc. made in an entire year. No. 1 producer Coal India Ltd.'s profit nearly tripled, also to a record, while the Chinese companies that produce more than half the world's coal saw first-half earnings more than double to a combined \$80 billion.

The massive profits are yielding big pay days for investors. But they will make it even harder for the world to kick the habit of burning coal for fuel, as producers work to squeeze out extra tons and boost investment in new mines. If more coal is mined and burned, that would make the likelihood of keeping global warming to less than 1.5 degrees Celsius even

more remote.

It's a remarkable turnaround for an industry that spent years mired in an existential crisis as the world tries to shift to cleaner fuels to slow global warming. Banks have been pledging to end financing, companies divested mines and power plants, and last November world leaders came close to a deal to eventually end its use.

Ironically, those efforts have helped fuel coal producers' success, as a lack of investment has constrained supply. And demand is higher than ever as Europe tries to wean itself off Russian imports by importing more seaborne coal and liquefied natural gas, leaving less fuel for other nations to fight over. Prices at Australia's Newcastle port, the Asian benchmark, surged to a record in July.

The impact on profits for the coal miners has been stunning and investors are now cashing in. Glencore's bumper earnings allowed the company to increase returns to shareholders by another \$4.5 billion this year, with the promise of more to come.

Gautam Adani, Asia's richest person, capitalized on a rush in India to secure import cargoes amid a squeeze on local supply. Revenue generated by his Adani Enterprises Ltd. jumped more than 200% in the three months to June 30, propelled by higher coal prices.

US producers are also reaping bumper profits, and the biggest miners Arch Resources Inc. and Peabody Energy Corp. say demand is so strong at European power plants that some customers are buying the high-quality fuel typically used to make steel to generate electricity instead.

The wild profits threaten to become a political lightning rod as a handful of coal companies cash in while consumers pay the price. Electricity costs in Europe are at record highs and people in developing nations are suffering daily blackouts

because their utilities can't afford to import fuel. Earlier this month, United Nations Secretary-General Antonio Guterres lashed out at energy companies, saying their profits were immoral and calling for windfall taxes.

Coal's advocates say the fuel remains the best way to provide cheap and reliable baseload power, especially in developing countries. Despite the huge renewable rollout, burning coal remains the world's favorite way to make power, accounting for 35% of all electricity.

While western producers cash in on the record prices – with companies such as Glencore committed to running mines to closure over the next 30 years – top coal consumers India and China still have growth on the agenda.

The Chinese government has tasked its industry with boosting production capacity by 300 million tons this year, and the nation's top state-owned producer said it would boost development investment by more than half on the back of record profits.

Coal India is also likely to pour a large chunk of its earnings back into developing new mines, under government pressure to do more to keep pace with demand from power plants and heavy industry.

China and India worked together at a UN conference in Glasgow last year to water down language in a global climate statement to call for a “phase down” of coal use instead of a “phase out.”

At the time, few would have predicted just how expensive the fuel would become. Just a year ago, the biggest international mining companies – excluding Glencore – were in a full retreat from coal, deciding the paltry returns were not worth the increasing pressure from investors and climate activists.

When Anglo American Plc spun off its coal business and handed

it over to existing shareholders, one short seller, Boatman Capital, said the new business was worth nothing. Instead the stock – known as Thungela Resources Ltd. – skyrocketed, gaining more than 1,000% since its June 2021 listing, with first-half earnings per share up about 20-fold.

Glencore itself snapped up a Colombian mine from former partners Anglo and BHP Group. The nature of the deal, and rising coal prices, meant Glencore essentially got the mine for free by the end of last year. In the first six months of this year, it made \$2 billion in profit from that one mine, more than double its entire coal businesses earnings in the same period last year.

The earnings look set to keep rolling in, as analysts and coal executives say the market will remain tight.

“As we stand today, we don’t see this energy crisis going away for some time,” Glencore Chief Executive Officer Gary Nagle said.

– *With assistance by David Stringer, and Will Wade*

**Russian gas cuts will not
kill German economy**



By Daniel Gros/Brussels

Much of the conventional wisdom about Europe's current natural-gas crisis – triggered by reduced deliveries from Russia – rests on two assumptions: that the German economy depends on cheap Russian gas, and that this bet has gone spectacularly wrong. But while German industry is strong, and the country imports a lot of natural gas from Russia, a closer inspection of the numbers and economics involved does not support the prevailing narrative.

For starters, natural gas does not play a large enough role to drive an industrial economy. In 2019, gas imports via pipeline cost Germany \$30 billion, representing only 0.75% of its GDP, and the overall value of the country's gas consumption was below 2% of GDP. These modest ratios are similar across industrialised economies and suggest that cheap gas imports are highly unlikely to be a major growth factor. Moreover, even though gas consumption has stagnated in Germany and most of Western Europe over the past two decades, the economy grew, albeit slowly.

The argument that cheap Russian gas might have favoured Germany more than other countries also is not backed up by the numbers. In 2019, Germany accounted for only about 2.3% of

global natural-gas consumption, but 4.5% of world GDP. Germany's gas intensity per unit of GDP is thus about one-half of the global average, much lower than that of the United States and many other industrialised countries, including Japan and South Korea.

European economies tend to be thriftier in their energy use than the rest of the world. But even within Europe, Germany performs well, with lower gas consumption per unit of GDP than other large European economies, such as Italy and Spain. This is surprising since these two Mediterranean countries have much less need for heating in winter (and air conditioning in summer requires an order of magnitude less power than heating). Only France, with its large nuclear-power sector, is less dependent on gas.

A similar picture emerges from related metrics, such as the value of energy imports as a percentage of GDP, or gas usage for industrial purposes as a share of industrial value added. All these indicators show that the German economy uses energy less intensively than most others.

The idea that German industry gained an advantage from access to cheap Russian gas ignores the reality that there is a European gas market with, up to now, only small differences in wholesale prices across countries. One could of course argue that Russia sold its energy cheaply to Germany to make the country dependent. But the data challenge the common perception that Germany receives cheap gas.

Over the past decade, German industry has paid about 10% more for natural gas than its competitors in other major European economies. Supplies from North Sea fields have enabled British industrial firms to pay even less than their continental peers, but this does not appear to have helped them much.

The implication is that Russia obtained a non-economic benefit (German dependence on its gas supplies) for almost no cost. The inverse of this is that Germany experienced a loss of energy independence without gaining a noticeable economic advantage.

The one large economy that is both energy-intensive and has

cheap natural gas is the United States. The average US citizen uses more than twice as much natural gas as a European – 25 megawatt-hours per year for the US, compared to about 10MWh for European countries. Moreover, US natural-gas prices have been somewhat lower than German or EU prices for most of the past two decades, and are now only a fraction of the European price, as European prices have increased by a factor of five, whereas US prices have changed little. Despite this cost advantage, however, the manufacturing industry of the US – and that of the United Kingdom – has not grown particularly strongly.

Adjusting to a world without Russian gas is of course a major problem for Europe. Yet, although Germany seems more vulnerable because it used to receive a large share of its gas from Russia, this can change quickly. Germany is building new regasification capacity in record time to allow the country to import the quantities of liquefied natural gas needed to fill the gap between lower Russian supplies and domestic demand, which is already falling because of high prices.

Once this import capacity has been constructed, Germany will be in the same situation as its European neighbours, which also have to bid for LNG. Prices are likely to stay high for some time. But with an energy intensity below the EU average, Germany should be able to bear the burden slightly better than Italy, Spain, and some Eastern European countries. France, of course, will be much less affected, at least if its nuclear reactors can resume full production.

We should also not forget the global picture. Bottling up a large percentage of Russian gas (which is what will happen if Europe no longer buys from Russia) increases the global gas price, which affects Asian countries as well, because they compete with Europe on LNG. South Korea and Japan have a higher energy intensity than Europe, and even China imports large quantities of LNG, at a price similar to what European countries pay.

Expensive energy, particularly natural gas, poses a difficult economic and political challenge for all energy-importing

industrialised countries. Only the US and some other smaller energy producers such as Norway, Canada, and Australia benefit from this situation. But the data suggest that Germany is better placed to weather this crisis than most of its main competitors. – Project Syndicate

* Daniel Gros is a member of the board and a distinguished fellow at the Centre for European Policy Studies.

La fronde anti-éoliennes prend de l'ampleur



Par Marie-Estelle Pech

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ENQUÊTE – Le gouvernement souhaite doubler le nombre d'éoliennes sur le territoire dans les cinq prochaines années. Mais la contestation s'intensifie et réunit des opposants de tous bords.

Après les McDonald's et les champs d'OGM, la prochaine cible des écologistes ou des zadistes sera-t-elle l'éolien? En juin,

un feu criminel détruisait une éolienne et en endommageait une autre à Marsanne, dans la Drôme. L'attaque a été revendiquée mi-juin par un site libertaire précisant «s'attaquer aux dominations». Du bourgeois au militant mélenchoniste en passant par l'anarchiste, le pêcheur et le châtelain, l'opposition à l'éolien est «de plus en plus composite», affirme Fabien Bouglé, porte-parole du collectif d'opposants Touche pas à nos îles! en guerre contre le projet de parc éolien au large de l'île de Noirmoutier, en Vendée.

Certes, cette opposition a historiquement débuté chez des pronucléaires situés bien à droite, «mais ça change», souligne cet élu versaillais, spécialiste du marché de l'art, qui témoigne avoir assisté à une lecture sur le sujet dans une «librairie anar de gauche» à Paris, et qui prophétise «une grande révolte populaire anti-éoliennes». D'autant que semble s'opérer une mutation: la contestation, jusque-là cantonnée aux citoyens et aux associations anti-éoliennes, trouve désormais des voix et des relais dans le monde politique pour porter le combat.

Ainsi Xavier Bertrand, ancien ministre du Travail et actuel président de la région des Hauts-de-France, qui a lancé fin juin un observatoire de l'éolien afin de mieux contrôler l'expansion des parcs dans sa région, qui «défigure complètement les paysages» et «coûte les yeux de la tête». Ou encore ces dix députés, tant de la majorité que de l'opposition, qui ont signé une tribune, «Stop aux nouvelles éoliennes!», dans nos éditions du 20 juin dernier.

Projet «antidémocratique»?

La France constitue aujourd'hui le quatrième parc d'Europe derrière l'Allemagne, l'Espagne et la Grande-Bretagne. Sa proportion d'électricité éolienne représente moins de 5 % de sa consommation mais, d'ici à 2023, les éoliennes terrestres devraient doubler, passant de 7300 à quelque 15.000. «C'est le

deuxième gisement de vent d'Europe et la deuxième façade maritime. Le potentiel est considérable», selon Pauline Le Bertre, déléguée générale de France Énergie éolienne (FEE).

On compte 70 % de recours contre les permis de construire devant les tribunaux administratifs, contre 50 % il y a cinq ans

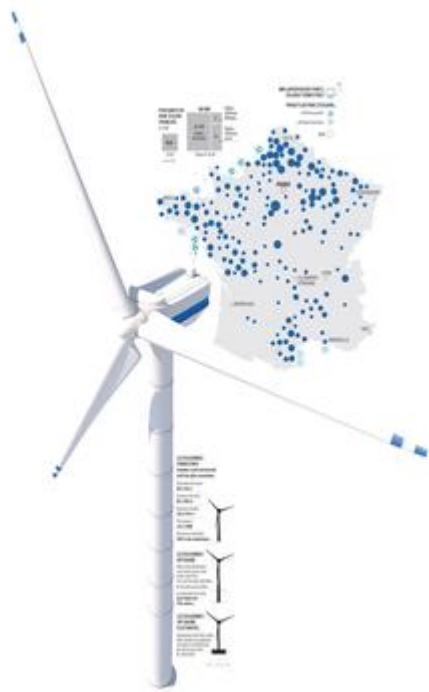
Si l'Allemagne a depuis longtemps compris «la nécessité impérieuse d'avoir une transition énergétique, en France, de nombreuses associations jouent sur les angoisses des gens, propageant des idées reçues». Le degré d'opposition à l'éolien serait, selon elle, unique en Europe, lié à notre historique avec le nucléaire.

De fait, malgré le discours politique français très volontariste sur le sujet, malgré les sondages favorables à l'éolien menés auprès des Français, l'installation des éoliennes suscite de plus en plus d'opposition. On compte 70 % de recours contre les permis de construire devant les tribunaux administratifs, contre 50 % il y a cinq ans. Une perte de temps pour les promoteurs: la mise en route d'un parc est désormais d'environ neuf ans, contre quatre pour l'Allemagne.

Pour accélérer le processus, le gouvernement a décidé de supprimer le premier degré de juridiction, le tribunal administratif, pour passer directement à la cour administrative d'appel. Un projet de décret est actuellement en consultation devant le Conseil d'État. Cela se pratique déjà pour les projets éoliens en mer, les multiplexes de cinéma et les supermarchés. Un projet «antidémocratique» pour Fabien Bouglé, et qui, ces derniers mois, mobilise et durcit plus encore le front anti-éolien.

Biodiversité

Les associations d'opposants s'offusquent aussi d'un décret paru le 11 juillet qui permet de moderniser les parcs existants sans reprendre de zéro toutes les études d'impact. Que reprochent ces opposants à l'éolien? Sa laideur, sa proximité avec des habitations et des monuments historiques, ses nuisances sonores, ses lumières «aveuglantes», des installations entachées de multiples prises illégales d'intérêt de la part des élus. Les arguments sont multiples. Et parfois écoutés.



Des éoliennes ne seront ainsi pas installées en arrière-plan du paysage du Mont-Saint-Michel, pas plus que du côté du pont du Gard. Pauline Le Bertre, elle, indique qu'en France «les restrictions d'installation sont les plus élevées d'Europe. On multiplie les études d'impact liées à la biodiversité, le patrimoine, les habitations.» À l'entendre, une éolienne implantée à 500 mètres d'une habitation, le minimum réglementaire, «fait un bruit semblable à celui d'un frigidaire». Elle vante la compétitivité du mégawatt éolien, 64 euros contre 110 pour le nucléaire dernière génération. Inversement, Karine Poujol, à la tête de l'association Gardez les caps, considère que les 64 éoliennes prévues en baie de

Saint-Brieuc provoqueront la mort de la biodiversité sous-marine, alors même que la zone est protégée Natura 2000. Elle anticipe un bruit «semblable à celui d'un décollage d'avion».

Loïk Le Floch-Prigent, ancien PDG d'Elf Aquitaine, défend les coquilles Saint-Jacques du cap Fréhel, qui pourraient être «très affectées» par ces installations fixées par 42 mètres de fonds. L'ancien industriel se défend de jouer pour le camp des pronucléaires, lui qui a «toujours défendu le fait qu'il fallait diversifier», rapporte-t-il au *Figaro*. Il met en doute cette politique qui «pénalise notre compétitivité en augmentant nos importations de matériel: 95 % des investissements de l'éolien viennent d'Allemagne, du Danemark, d'Inde ou de Chine, tandis que deux tiers des exploitants viennent d'ailleurs». Ce printemps, la Cour des comptes affirmait que «le tissu industriel français a peu profité du développement des énergies renouvelables». Malgré des moyens considérables, qui se sont élevés en 2016 à 5,3 milliards d'euros. La prévision de dépense publique en 2023, elle, est de 7,5 milliards d'euros.

Brexit : HSBC transfère sept succursales de Londres à Paris



Par Anne Bodescot

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La banque investit également lourdement en Asie pour accélérer sa croissance.

Dans la finance, les préparatifs en prévision du Brexit s'accélèrent. La Grande-Bretagne redoute désormais une sortie de l'Union européenne (UE) sans accord avec Bruxelles. Ce qui compliquerait encore davantage le travail de ses banques sur le Vieux Continent. Prenant les devants, HSBC a annoncé lundi que plusieurs de ses succursales européennes, jusqu'alors contrôlées depuis Londres, seront l'an prochain rattachées à sa filiale française.

Ses activités en République tchèque, Irlande, Italie, Luxembourg, Pays-Bas et Espagne seront pilotées depuis Paris par HSBC France, en principe à partir du premier trimestre 2019. Soit juste avant la sortie effective du Royaume-Uni de

l'UE, prévue fin mars. «Ce que nous avons prévu depuis le début, depuis plus de deux ans, a été fondé sur le pire des scénarios», explique John Flint, le nouveau directeur général.

» LIRE AUSSI – Brexit: Bruxelles n'exclut pas une sortie sans accord

L'annonce a été faite quelques heures après la publication de résultats mitigés pour le groupe bancaire britannique. Après avoir mené un vaste plan de restructuration ces dernières années et fait des économies à tous crins, la banque a enregistré une hausse de 7 % de ses coûts sur les six premiers mois de l'année, en raison de ses investissements en Asie, où elle veut pousser plus encore son avantage. Elle y réalise déjà près de la moitié de son activité. «Nous sommes en train d'investir pour gagner de nouveaux clients, pour accroître notre part de marché et poser les fondations d'une croissance régulière des bénéfices», souligne John Flint. Aux manettes depuis février, il est d'ailleurs prêt à aller beaucoup plus loin, puisqu'il a dévoilé en juin un plan d'investissement sur trois ans de 15 à 17 milliards de dollars.

Les dépenses déjà engagées ces derniers mois par la banque ont permis d'embaucher afin de conquérir davantage de clients et de se renforcer dans les activités numériques, en particulier en Chine. Mais cette hausse des dépenses a été plus forte que celle du chiffre d'affaires, qui augmente de 4 % (2 % ajustés des éléments exceptionnels). Voilà qui explique l'accueil plutôt froid réservé aux résultats semestriels de la banque à la Bourse de Londres, où le titre a terminé lundi en léger repli (- 1,06 %).

Pourtant, le bénéfice semestriel dévoilé lundi est légèrement supérieur aux prévisions, avec une progression de 2,5 %, à 7,173 milliards de dollars. En Asie, le bénéfice avant impôt du premier semestre a même bondi de 23 %, à 9,4 milliards de dollars, ce qui représente 88 % du bénéfice total du groupe.

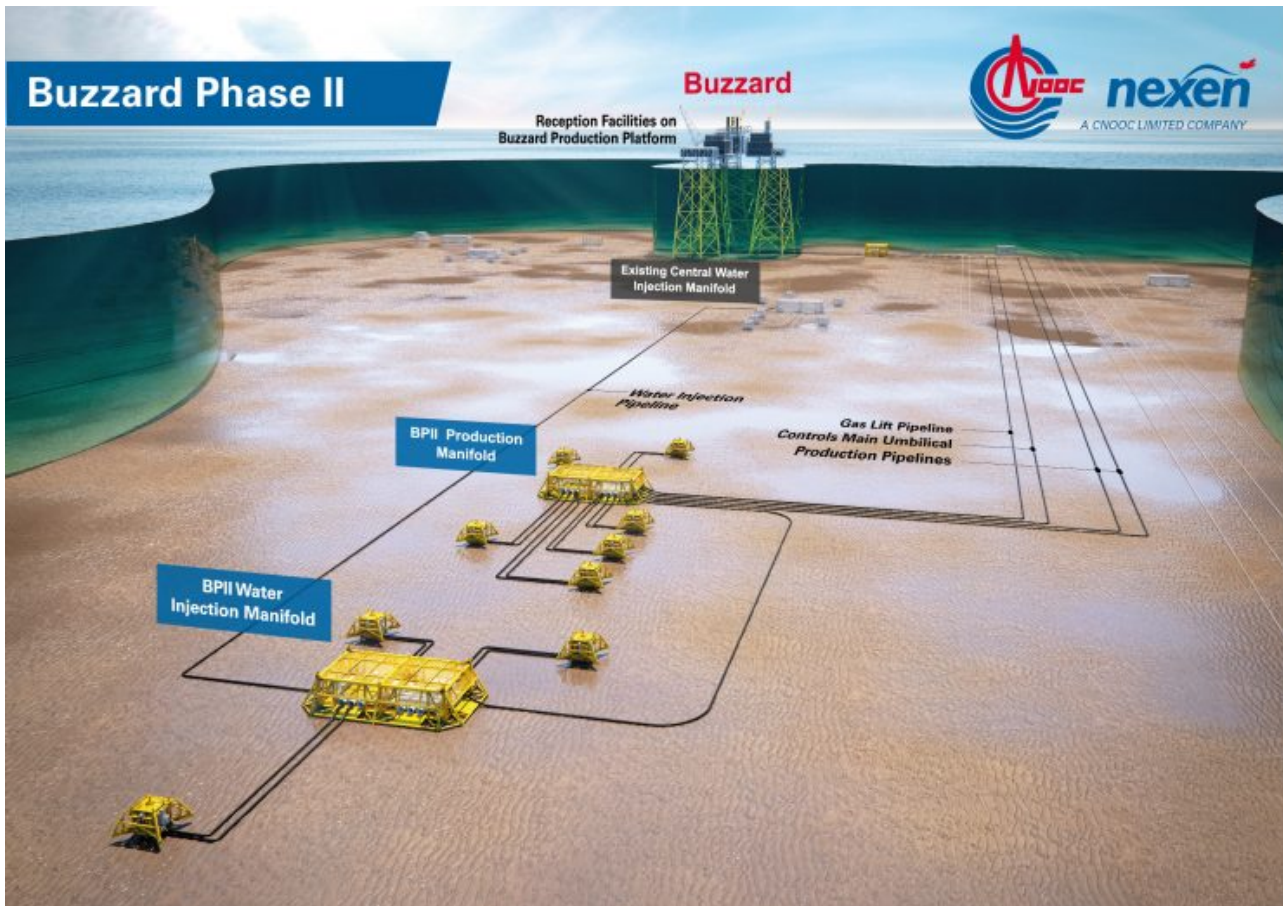
Baisse des profits en Europe

Mais ces bonnes performances ont été contrebalancées par une baisse des profits sur d'autres marchés, en particulier en Europe, où l'activité est pénalisée notamment par la faiblesse des taux d'intérêt. Toutefois, le patron de HSBC espère toujours stimuler les revenus de son groupe dans les prochains mois, pour que, sur l'année, la progression des recettes soit plus forte que celle des coûts.

Mais la guerre commerciale entre les États-Unis et la Chine, qui préoccupe toujours les marchés financiers, lézarde la confiance dans la capacité de la banque à tenir cette promesse. Pour l'instant, HSBC affirme que cette guerre douanière n'a eu aucun effet sur son activité et ses clients. Le président du groupe, Mark Tucker, a même tenu à rappeler que le marché asiatique restait solide. Mais John Flint reconnaît que la croissance chinoise pourrait en être légèrement affectée.

Touchée par de nombreux scandales financiers ces dernières années, HSBC a aussi annoncé avoir trouvé un accord en juillet avec le département américain de la Justice. La banque paiera une pénalité financière de 765 millions de dollars pour mettre fin aux poursuites sur son activité dans les prêts immobiliers avant la crise financière de 2008.

Extension of North Sea mega-field gets final approval



Oil firm Nexen Petroleum UK has said its partners have given it the nod to extend the life of the North Sea's biggest producing field.

Nexen, owned by the China National Offshore Oil Corporation, also said the Oil and Gas Authority (OGA) had approved the Buzzard field phase two development.

In November, Nexen's UK managing director, Ray Riddoch, said production from Buzzard would be prolonged by up to 10 years as part of a £500-million-plus project.

A number of contracts have already been awarded to the supply chain, while work on the front-end engineering design was completed in June.

First oil is expected in the first quarter of 2021.

Operator Nexen owns 43.21% of Buzzard, the largest UK North Sea oil discovery in the past two decades.

Its partners are Suncor Energy (29.89%), Chrysaor (21.73%), Dyas (4.7%) and Oranje-Nassau Energie (0.46%).

Nexen is working on the project with a host of oil field service companies including AGR Well Management, Baker Hughes, a GE company (BHGE), COSL Drilling Europe, Subsea 7 and Worley Parsons.

They have formed an integrated team which is based at Nexen's office in Kingswells, Aberdeen.

The team is going after additional reserves with a subsea development in the northern part of the Buzzard field.

Buzzard, which lies 60 miles north-east of Aberdeen, was discovered in 2001 and produced first oil in 2007.

The latest figures of the OGA show the field is producing more than 140,000 barrels of oil equivalent per day.

A production and water injection subsea manifold will be installed and tied back to the existing Buzzard complex.

A new module will also be added to the complex for processing and export.

Last week, Subsea 7 said it had won a contract worth between £38-£115m to build and install a three mile pipeline bundle and provide a heavy lift vessel for transporting and installing a new topside module.

BHGE has been chosen to supply a range of subsea infrastructure and topside control systems.

Zvonimir Djerfi, Europe president, BHGE, said the formation of the integrated team was a prime example of companies taking an unconventional approach to collaboration and project development.

Can the GCC keep afloat without oil?



The GCC as we know it today would not be the same were it not for the discovery of oil in the region in the early years of the last century.

Now, new data has surfaced that predicts the GCC will break its dependence on fossil fuels by 2050, emerging in the new decade with an economy whose fate is no longer tied to the fickle fluctuations of oil prices.

The question remains, however: How effective will the GCC's attempts to wean off hydrocarbons be, and which non-oil sectors will be able to keep it afloat?

Making a diversified economy a reality

Speaking to Arab News, New York-based firm Fitch Solutions shared information from their latest report covering global

trends through to 2050. Their data shows that countries in the GCC like Kuwait, UAE, Saudi Arabia and Bahrain will achieve their goal of a diversified economy by 2050 following their acts of reform.

Initiatives like Dubai's Vision 2021, Saudi's Vision 2030, the implementation of VAT, and the lifting of the ban on women driving are all heralds of this long-awaited change. As it currently stands, the UAE is ahead of its neighbors, having announced their reformatory Vision 2021 for Dubai back in 2010. According to Trading Economics, 40% of current UAE exports come from oil and natural gas, the lowest in the region.

Other countries, however, such as Kuwait and Oman still have a lot of ground to cover, with the Kuwaiti oil sector accounting for 40% of the country's GDP, 90% of total exports and 80% of state revenues, according to Trading Economics.

These Gulf nations cannot afford to rely solely on oil anymore, as the recurring drop in oil price has shown. The 2014 oil price crash gave these rich countries a pang of reality. During that year, the price of a barrel dropped from around \$115 in June 2014 to under \$27 in February 2016, according to CNBC.

Are other sectors enough to support the entire region?

The possibility of oil running out has always existed.

Sooner or later, these countries will need to take action. The question remains, however: could non-oil sectors truly support a region that has been so reliant on fossil fuel revenues?

Tourism and hospitality staples of the region's economy

In recent years, the UAE has continued to nurture and grow its tourism industry. Dubai International Airport (DXB) was not named the world's busiest airport for no reason. Passenger

numbers at the airport topped 43.7 million in the first half of 2018, according to a traffic report issued last month by operator Dubai Airports, up 1.6% from the same period last year.

Dubai, for example, has been seeing a hotel construction boom in anticipation of Expo 2020.

Foreign investment is key

These countries are also looking outside their borders for investment opportunities. Saudi's Public Investment Fund (PIF) currently has stakes in several major companies abroad, such as \$72 billion ride-hailing company Uber and future-oriented Tesla.

The PIF's investment in Uber is reported to be worth \$3.5 billion, according to the New York Times. The fund's latest investment has been in Tesla, reported at a 5% stake. The fund has also staked a \$400 million sum in American augmented reality startup Magic Leap.

The country has been intent on investing in technology companies they believe will have a key role in the future of economy as well as mankind.

Inward FDIs are also key, with the UAE and Saudi currently at the forefront of the GCC.

The future is green

Saudi is also looking at green energy ventures. Earlier this year during March, Saudi Arabia and the SoftBank Group Corporation announced a \$200 billion solar energy project, set to produce 200 GW by 2030. Saudi's vast open deserts permit a project of this scale, and this new project will produce an excessive amount of energy that will eclipse Saudi's needs. This means that the kingdom could become one of the world's greatest exporters of solar energy, distributed using mass

batteries.

It seems that 200 hundred years later after it was first invented, we are still relying on age-old technology such as the battery.

The UAE has some solar plans of its own. Its Mohammed bin Rashid Al Maktoum Solar Park in the desert south of Dubai spans 16.2 km². By 2030, it will have a capacity of 5,000 MW, offsetting 6.5 million tons of CO2 emissions and generating enough energy to power 800,000 homes, Smithsonian Magazine reports.

Bahrain's prospects are not as ambitious just yet. The country has set a target of 10% of total energy consumption to be met through renewables by 2035, doubling the 5% goal by 2025, Electricity and Water Affairs Minister Dr. Abdulhussain Mirza has said.

The GCC prepares for a future with blockchain

The rise of cryptocurrencies and blockchain has already sent ripples through the region's banking sector. For the GCC to survive without oil, it will be instrumental that these countries adapt and embrace these upcoming changes.

The National Bank of Abu Dhabi has become the first bank in the MENA region to introduce real-time, cross-border payments on blockchain, Medium reports. The bank has formed a partnership with Ripple.

Saudi's central bank has also signed a deal with Ripple for an upcoming project.

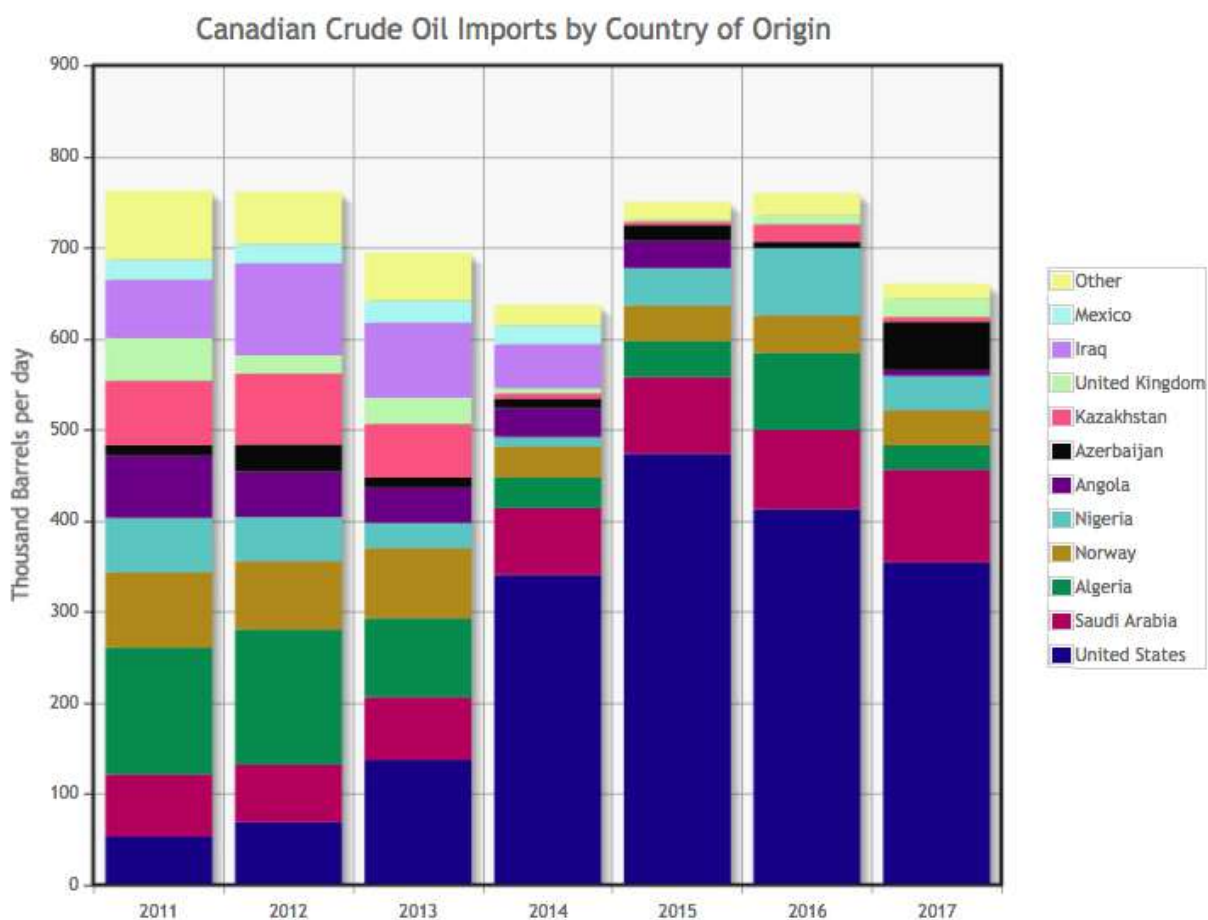
Freight transportation industry in GCC needs an update if it will survive

Freight transportation and logistics (T&L) is a critical industry in the GCC, yet revenues have been on the decline in

recent years. Pricewaterhouse Coopers (PwC) analysts blame this on the GCC lagging behind the technological advancements of T&L industries abroad.

If the GCC's T&L industry is to catch up and survive post-oil, they will need to adopt digitization practices to update their services to a more demanding international clientele.

Why has Canada spent billions of dollars buying Saudi Arabian oil?



Despite sitting on an ocean of oil, Canada still buys \$300 million per month of Saudi crude

As Saudi Arabia aggressively severs ties with Canada, the two countries' trade relationship hangs in the balance. On one hand, Canada will lose out on Saudi foreign students, military contracts and sales of wheat and grain. On the other, Saudi Arabia will lose the billions of dollars it earns every year by selling oil to Canada.

For years, it has been an oft-repeated Alberta grievance that these imports exist at all. Despite sitting atop an ocean of proven oil reserves, Canada continues to spend a small fortune every year buying oil from a country that executes homosexuals, flogs dissidents and has a nasty habit of funding Islamic extremism.

Below, a quick guide to why Canadians are still gassing up their cars with Saudi crude.

Over the last 10 years, Canada has spent \$20.9 billion on Saudi crude

Between 2007 and 2017, Statistics Canada figures show that Canada imported a total of \$20.9 billion of Saudi Arabian petroleum oils. For context, this is almost precisely what Canada spends on its military per year. It's also way more than the expected \$15.7 billion cost of the Energy East pipeline. On average, in recent years, Saudi Arabia supplies about 10 per cent of Canada's oil imports. Canada, in turn, is responsible for buying roughly 1.5 per cent of total Saudi oil exports. What's more, Saudi Arabia is climbing the leader board of countries that Canada's relies upon for its foreign oil. As recently as 2010, Saudi Arabia ranked as Canada's fifth largest supplier of foreign oil (behind Algeria, Norway, the U.K. and Kazakhstan). Now, Saudi Arabia is second only to

the United States.

Right now, all the Saudi oil is coming through a single New Brunswick refinery

All of the Saudi oil imported into Canada in 2017 and 2018 came through New Brunswick, which only has one oil import facility: The massive Irving Oil-owned Saint John refinery. Between January and June of this year that refinery has imported \$1.8 billion of Saudi oil – roughly \$10 million per day. The amount of U.S. oil entering the refinery, for comparison, is equivalent only to about \$3.8 million per day. Unlike most Canadian refineries, Saint John has no access to a pipeline; every barrel of oil it processes either comes by tanker or train. (The oil train that caused the Lac-Mégantic rail disaster, in fact, was headed to the Saint John refinery). “We source crude oil from all over the world for our refinery in Saint John, N.B.,” a spokesman for Irving Oil told the National Post in 2016. And whenever someone is seeking out the cheapest product from the world market, it’s not unusual that a lot of it is going to come from oil-rich Saudi Arabia. It’s like turning to the world market to buy the cheapest possible t-shirts: Chances are that they’re going to come from Bangladesh.

Alberta and Saudi oil aren’t necessarily the same thing

On paper, Canada could become energy self-sufficient tomorrow. Every day we produce about 3.9 million barrels of oil per day, and use less than 2 million barrels. A study this year from the Canadian Energy Research Institute even calculated that energy self-sufficiency might reduce emissions. But think of oil like whiskey: There are many different types and qualities. A bourbon connoisseur probably isn’t going to be happy with a bottle of Old Crow and a Manhattan isn’t going to taste the same if it’s made out of Scotch. Similarly, Alberta oil is not interchangeable with the stuff coming out of Saudi Arabia. Andrew Leach, an energy economist at the University of Alberta, even said that comparing the two is like comparing

apples and oranges. "Saudi crude and WCS (Western Canadian Select) doesn't overlap much in terms of their markets," he told the National Post. For one thing, most eastern Canadian refineries cannot process bitumen, the thick tar-like hydrocarbon that comes out of the Athabasca Oil Sands. Almost anybody can process Saudi Arabian crude, but only an elite fraternity of the world's most complex refineries can turn Alberta bitumen into gasoline. To get to the east coast, Canadian bitumen also has to be shipped overland from more than 4,000 kilometres away, significantly adding to its total costs (Saudi Arabia is 10,000 kilometres away from the Canadian east coast, but tanker shipment is cheap). It's also why Western Canadian Select, the industry name for most oil sands bitumen, sells at such a steep discount to more conventional oil types coming out of Saudi Arabia. In June, for instance, WCS sold at an average of USD\$52.10 a barrel, compared to USD\$67.87 for West Texas Intermediate (WTI), an oil category priced similarly to most Middle Eastern oils. "The oil Alberta produces is simply of a lower quality than ... WTI, and is located farther away from customers," writes the Alberta government in an online briefing note describing the WCS "discount."

Even with a pipeline, it's not a guarantee that refineries would buy Canadian

The cancelled Energy East pipeline, of course, would have pumped Saskatchewan and Alberta petroleum into New Brunswick. Politicians touted the pipeline as a way to supplant foreign suppliers such as Saudi Arabia. "We believe this nation-building project would have benefited all of Canada through new jobs, investment, energy security and the ability to displace oil being imported into Canada from overseas," Alberta premier Rachel Notley said upon the project's cancellation. However, refineries are no different than a driver cruising gas stations looking for a fill-up: They seek out whoever has the best price and buy accordingly. If Alberta can't sell its oil on the Atlantic Coast for a lower price

than Saudi Arabia, refineries aren't going to buy it – particularly if they can't process it. "Getting product from Western Canada, while conceptually sounding like a good way to push out Saudi oil, doesn't fix everything," said Jason Parent with the Canadian oil industry analyst Kent Group. As of press time, WCS is currently selling at an incredible \$30 discount over more conventional oil types. While this would likely be enough to entice Atlantic buyers, the discount isn't always so competitive – particularly if Saudi Arabia is actively trying to overproduce and drop oil prices in order to kneecap the Canadian and U.S. oil industry. This is part of the reason why Canada never built a pipeline to the east coast in the first place. A west-to-east pipeline was indeed considered soon after the discovery of oil in Alberta in the 1940s, but it was soon scrapped. "Eastern provinces did the math and found it cheaper to import foreign oil by tanker, rather than bother with the extra cost of domestic supply," said Peter Tertzakian, director of the Calgary-based Arc Energy Research Institute. However, even if the business case is a little complicated, Tertzakian still advocates a pipeline as something Canada should do for strategic reasons. "We could be completely self sufficient if we wanted," he said. "It's just a question of how much we are willing to pay for it."

Canada can't really hurt Saudi Arabia's bottom line

The easiest way for Canada to cut off Saudi Arabia imports would be simply to buy more American oil. It's about the same price, it doesn't require specialized facilities and considering that they already buy so much of ours, there's a certain justice to it. The U.S. also has an excellent human rights record compared to the Saudis. But while such a move might assuage Canada's moral compass, the practical effect would be almost nil. It's a seller's market for oil right now. Production of U.S. shale oil is slowing down, Iran is being hammered by sanctions and petroleum demand continues to tick upwards all over the world. All this means that if Canada could successfully prevent a drop of Saudi oil from ever

entering our borders again, it's unlikely that Riyadh would ever notice. Any oil tanker turned away at Saint John could simply set course for New Jersey. Unlike Canada, Saudi Arabia sells a product that is easy to transport and that can be processed by almost anyone. Said Andrew Leach, "Saudi oil will still sell at the world price."

Mohammed bin Salman Is Weak, Weak, Weak



When I pulled my Hyundai out of the driveway two weeks ago and headed 450 miles north, it was only for a short vacation, but I was still excited to be leaving the Beltway after a confusing year for foreign-policy wonks. Freed from the obligation to make sense of the growing dysfunction of the United States and its rippling effects on the world, I took

long runs on country roads, ate too much ice cream, lazed on the beach with my wife and young daughters, read a novel, and celebrated a birthday.

I returned to the office a few days ago and almost wish I hadn't. The weirdness of 2018 continues. Upon reconnecting, I discovered that the odious former president of Iran, Mahmoud Ahmadinejad, tweeted in support of LeBron James (he also likes Michael Jordan), Toto covered Weezer, and the government of Saudi Arabia freaked out at Canada. Not Iran or Qatar, but Canada... the Great White North. The place that has bestowed such gifts to the world as John Candy, poutine, Wayne Gretzky, the Montreal bagel, and the 55-yard line.

Like most countries, Canada does have darker aspects. The way Canadians treated what they now refer to as the First Nations was horrific, for example—although they recently apologized and accepted responsibility for the near-destruction of those cultures. And even when Canadians are angry at you, they tend to be unfailingly polite about it.

So, what is the Saudi beef? Why have they thrown the Canadian ambassador out of the country, halted Saudi flights to Toronto (a lovely airport), and told anywhere between 7,000 and 16,000 Saudis enrolled in Canadian universities that they can't go back to school in a few weeks? A tweet. More specifically, last Friday the Canadian foreign ministry tweeted: "Canada is gravely concerned about additional arrests of civil society and women's rights activists in #SaudiArabia, including Samar Badawi. We urge the Saudi authorities to immediately release them and all other peaceful #humanrights activists."

That's it. The Canadian government did not impose sanctions, offend Islam, or make common cause with the Houthis in Yemen. As anyone with a passing interest in international affairs knows, Ottawa has publicly positioned itself—often in contrast to the United States—as a strong voice in defense of human rights. This is particularly the case under Liberal Party-led

governments such as the one under Prime Minister Justin Trudeau, and Canadian Foreign Minister Chrystia Freeland has been (politely) forceful in her defense of a rules-based and liberal international order.

According to their Saudi counterparts, by expressing concern for the plight of peaceful activists in the kingdom, Canada's diplomats were in egregious violation of Saudi Arabia's sovereignty. This is the kind of response that one might expect from say, Egypt—though even the Egyptian leadership, which loathes civil society, activists, and their international supporters with great passion, would not throw an ambassador out of the country and cancel the scholarships of thousands of university students.

There are various theories to explain the Saudi reaction to Canada's tweet. Some analysts have suggested that the episode is another example of Saudi Arabia's reckless foreign policy under Crown Prince Mohammed bin Salman. Others see it as another warning to Saudis that the only reforms in the kingdom are those that the crown prince has articulated, and they are at their peril should Saudis demand more. Both explanations are plausible—and either way, Mohammed bin Salman comes out looking every bit the impetuous, petty, immature, tyrant that his critics say he is.

Arab leaders have some good reasons for responding poorly to activists and nongovernmental organizations that international supporters of these individuals and groups tend to overlook. But rounding up people who peacefully express a different vision of society from the Saudi leadership is weak. Not just weak in a vague moral sense, but as a basic description of the government's political standing. General rule: If a leader is arresting people who disagree with them, it is a sign that this leader is well aware of a significant gap between the stories the government is telling its citizens about how good life is under its benevolent leaders and how people are actually experiencing it. The Saudi women in jail right now

had to be arrested, because if they weren't silenced, there would be an ever-increasing risk that they would expose the emptiness of the government's sunny narrative about the future. Coercion of this sort is a demonstration of brute force *and* political weakness.

For all the Saudi government's declarations about the "new Saudi Arabia" and how the country is moving forward thanks to the crown prince's reform program, it rings hollow against the background of jailed peaceful dissenters. The Saudis will argue that all the Western reporting and analysis is wrong—the people arrested were in communication with foreign countries and thus trying to undermine the Saudi state. It is a claim that is both tiresome—because it comes from the script every foreign ministry reads anytime their governments want to repress activists—and revealing. There is no foreign conspiracy, of course. It is the dodge of a nervous Saudi leadership, fearful that its people will discover its inability to deliver on its promises.

The Saudis and their supporters often complain that they get a bad rap in Washington. I am sympathetic to this claim. Sure, Crown Prince Mohammed bin Salman got some terrific personal press on his barnstorm through New York, Washington, Los Angeles, and Silicon Valley last spring—but news coverage of Saudi Arabia at around the same time was demonstrably negative. With good reason, of course. In November 2017, the Saudis orchestrated the brief resignation of the Lebanese prime minister—surely one of the stranger diplomatic episodes in the Middle East ever—and then there was the terrible (and ongoing) humanitarian toll of Saudi Arabia's military intervention in Yemen. The Saudi-led blockade of Qatar, meanwhile, seems to have been a pointless exercise in showing Doha who is the big dog in the Gulf.

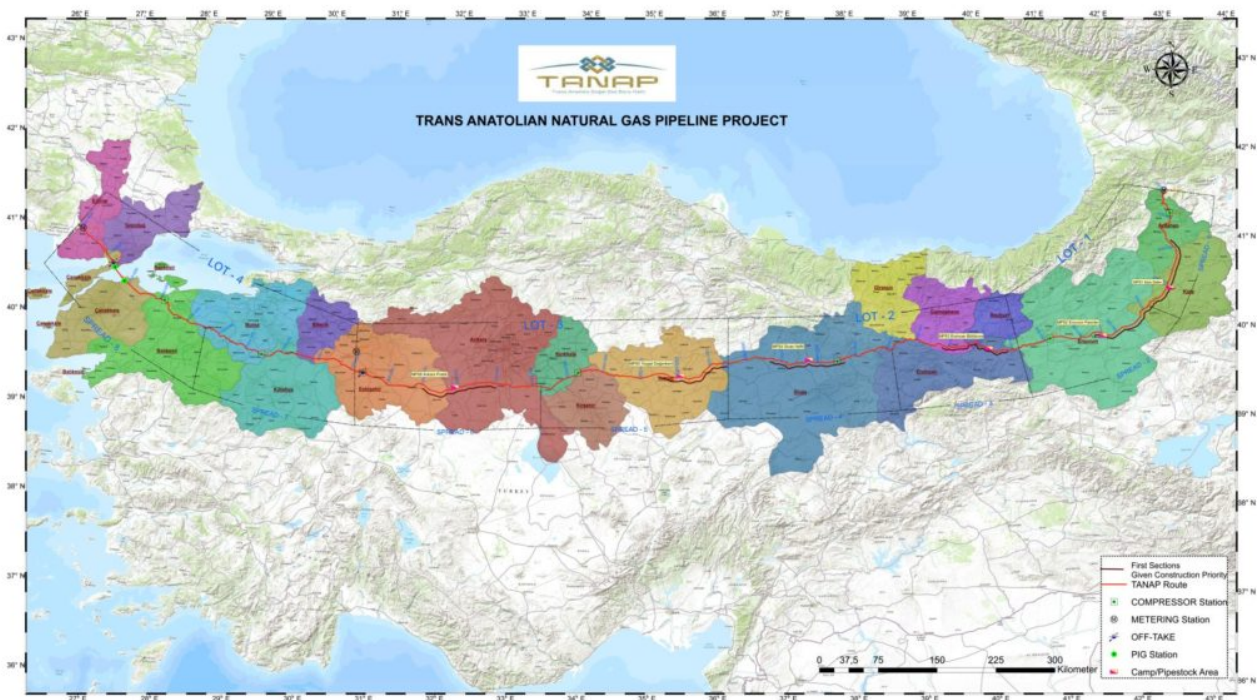
Yet the negative coverage ignored the middle ground; complications and shades of gray are typically saved for stories other than Saudi Arabia. The war in Yemen has been a

foolish blunder, but hardly anyone mentions the brutality of the Houthis. The Qataris may be victims of Saudi, Emirati, Egyptian, and Bahraini scheming, but they are not innocent victims. The crown prince is hardly the reformer that he has proclaimed himself to be, but he does seem to enjoy genuine support at home.

Still, whatever beating the Saudis are taking over the war of words with Canada, it is entirely of Riyadh's own making and well deserved. One is hard-pressed to truly understand what officials at the Royal Court are thinking, beyond taking a cue from the Trump administration and declaring, "We are Saudi Arabia, bitches." The Saudis really can't have it every which way: posturing as "reformers," tossing activists in jail, and then taking umbrage when people dare criticize them for not actually reforming.

The crown prince decided to pick a fight with the wrong country. Not because Canada is powerful and the Saudis are dependent upon them, but rather because Ottawa has taken a stand on the straightforward principle that peaceful dissent is not a crime. In their overreaction, the Saudis have decided to flaunt their own foolishness and feebleness. Instead of railing against Ottawa, Riyadh should apologize for its rash behavior. That's what the Canadians would do.

**TANAP to deliver first
commercial gas on June 30**



– The project came in under budget from the original \$11.7 billion down to \$7.99 billion

First commercial gas from the Trans Anatolian Natural Gas Pipeline Project (TANAP) to Turkey will begin transit by June 30, Saltuk Duzyol, TANAP’s general manager said on Tuesday.

TANAP, which will carry Azeri gas to Turkey and then onto Europe, is currently 93.5 percent complete, Duzyol confirmed at TANAP’s Eskisehir Measurement and Compressor station where Turkey receives Azeri gas.

“Phase 0, which starts from the Turkey-Georgia border and ends in Turkey’s Eskisehir province is almost completed,” Duzyol said and added that the second part of the project – Phase 1 – starts from Eskisehir and continues to the Ipsala district of Edirne on the Turkey-Greece border, where TANAP will be connected to the Trans Adriatic Pipeline (TAP), the pipeline that will bring Azeri gas to European markets.

“We completed 80.7 percent of Phase 1. When we finish building this phase, we will wait for TAP. The percentage of the total completion of TANAP is currently 93.5 percent,” he said.

Phase 0, which started testing on Jan. 23, is still ongoing but from June 30 commercial gas transfer will start, Duzyol said.

The TANAP project has seen the employment of around 13,000 and currently has around 7,000 employed. The project had 82 million man-hours worked and the equivalent length of 175 million kilometers driven.

The project has also revealed many unexpected surprises during its construction phase, Duzyol said, disclosing that nine species of bugs were discovered along with a new plant species, previously unknown to the scientific community.

“We also discovered 154 archeological sites during the route selection and construction,” he added.

He said the total value of contracts signed for the project to date is \$5 billion.

– Project cost is under budget

Duzyol lauded the project management and the procurement process as a success in bringing the costs of the project under budget.

The estimated investment cost was \$11.7 billion at the start of the project, he explained adding that, and “We have successfully pulled this figure down to \$7.99 billion with the procurement process and project management we have successfully provided. I am proud to say that this is a huge financial success.”

He disclosed that project partners awarded \$3.75 billion in credit from international financial institutions and the European Union provided \$10.2 million in grant aid.

The stakeholder numbers for the project have also increased from three to four.

“The Southern Gas Corridor Company (SGC) had previously a 58 percent share but transferred a 7 percent stake to SOCAR Turkey. Currently, the SGC holds 51 percent, Turkey’s BOTAS 30 percent, BP 12 percent and SOCAR Turkey 7 percent,” he explained.

Duzyol also stressed that the TANAP pipeline could also be used to transfer gas from the Eastern Mediterranean or Iraq, conditional on sufficient demand and agreements.

TANAP’s initial capacity per year will be 16 billion cubic meters from which Turkey will withdraw 6 billion cubic meters while the remaining 10 billion cubic meters will be delivered to Europe.