International action can scale up hydrogen to make it a key part of a clean and secure energy future, according to new IEA report

KARUIZAWA, Japan – The world has an important opportunity to tap into hydrogen's vast potential to become a critical part of a more sustainable and secure energy future, the International Energy Agency said in a major new report today.

The in-depth study, which analyses hydrogen's current state of play and offers guidance on its future development, is being launched by Dr Fatih Birol, the IEA's Executive Director, alongside Mr Hiroshige Seko, Japan's Minister of Economy, Trade and Industry, on the occasion of the meeting of G20 energy and environment ministers in Karuizawa, Japan. The

report – *The Future of Hydrogen: Seizing Today's Opportunities* – finds that clean hydrogen is currently receiving strong support from governments and businesses around the world, with the number of policies and projects expanding rapidly.

Hydrogen can help to tackle various critical energy challenges, including helping to store the variable output from renewables like solar PV and wind to better match demand. It offers ways to decarbonise a range of sectors – including long-haul transport, chemicals, and iron and steel – where it is proving difficult to meaningfully reduce emissions. It can also help to improve air quality and strengthen energy security.

A wide variety of fuels are able to produce hydrogen, including renewables, nuclear, natural gas, coal and oil. Hydrogen can be transported as a gas by pipelines or in liquid form by ships, much like liquefied natural gas (LNG). It can also be transformed into electricity and methane to power homes and feed industry, and into fuels for cars, trucks, ships and planes.

"Hydrogen is today enjoying unprecedented momentum, driven by governments that both import and export energy, as well as the renewables industry, electricity and gas utilities, automakers, oil and gas companies, major technology firms and big cities," Dr Birol said. "The world should not miss this unique chance to make hydrogen an important part of our clean and secure energy future."

To build on this momentum, the IEA report offers seven key recommendations to help governments, companies and other stakeholders to scale up hydrogen projects around the world. These include four areas where actions today can help to lay the foundations for the growth of a global clean hydrogen industry in the years ahead:

1. Making industrial ports the nerve centres for scaling up

the use of clean hydrogen;
2. Building on existing infrastructure, such as natural gas pipelines;
3. Expanding the use of hydrogen in transport by using it to power cars, trucks and buses that run on key routes;
4. Launching the hydrogen trade's first international shipping routes.

The report notes that hydrogen still faces significant challenges. Producing hydrogen from low-carbon energy is costly at the moment, the development of hydrogen infrastructure is slow and holding back widespread adoption, and some regulations currently limit the development of a clean hydrogen industry.

Today, hydrogen is already being used on an industrial scale, but it is almost entirely supplied from natural gas and coal. Its production, mainly for the chemicals and refining industries, is responsible for 830 million tonnes of CO_2 emissions per year. That's the equivalent of the annual carbon emissions of the United Kingdom and Indonesia combined.

Reducing emissions from existing hydrogen production is a challenge but also represents an opportunity to increase the scale of clean hydrogen worldwide. One approach is to capture and store or utilise the CO_2 from hydrogen production from fossil fuels. There are currently several industrial facilities around the world that use this process, and more are in the pipeline, but a much greater number is required to make a significant impact.

Another approach is for industries to secure greater supplies of hydrogen from clean electricity. In the past two decades, more than 200 projects have started operation to convert electricity and water into hydrogen to reduce emissions – from transport, natural gas use and industrial sectors – or to support the integration of renewables into the energy system.

Expanding the use of clean hydrogen in other sectors – such as cars, trucks, steel and heating buildings – is another important challenge. There are currently around 11,200 hydrogen-powered cars on the road worldwide. Existing government targets call for that number to increase dramatically to 2.5 million by 2030.

Policy makers need to make sure market conditions are well adapted for reaching such ambitious goals. The recent successes of solar PV, wind, batteries and electric vehicles have shown that policy and technology innovation have the power to build global clean energy industries.

As the world's leading energy authority covering all fuels and all technologies, the IEA is ideally placed to help to shape global policy on hydrogen.

"We are very proud to have been able to use the breadth and depth of the IEA's energy expertise to carry out the rigorous analysis for this study in collaboration with governments, industry and academic researchers," said Dr Birol. "We are grateful to Japan, through its presidency of the G20, for requesting that we carry out this report, which recommends immediate, pragmatic steps to foster hydrogen's development."

Beyond this report, the IEA will remain focused on hydrogen, further expanding our expertise in order to monitor progress and provide guidance on technologies, policies and market design. The IEA will continue to work closely with governments and all other stakeholders to support efforts to make the most out of hydrogen's great potential.

Egypt’s electricity deal with Cyprus, Greece brightens energy outlook

Egypt has signed an electricity interconnection framework agreement with Cyprus and Greece to establish a subsea cable called the EuroAfrica Interconnector linking the three countries.

The agreement was signed on May 22 by EuroAfrica Interconnector Limited CEO Nasos Ktorides and chairman of the Egyptian Electricity Transmission Company Sabah Mohamed Mashal.

According to the project developer, EuroAfrica Interconnector Limited, the 2,000-megawatt cable will be connected from Egypt to continental Europe via Cyprus, making Egypt an energy hub for Africa and link it to the European continent.

The cable will run from Egypt to Cyprus, from Cyprus to Crete and from Crete to Attica in Greece.

Ioannis Kasoulides, chairman of the Strategic Council of the EuroAfrica Interconnector, said in a statement following the signing ceremony, “With the historic signing agreement between EuroAfrica Interconnector and the Egyptian authorities, the first major electricity interconnection project linking Africa with Europe has been realized.”

“Cyprus now becomes a major hub for the transmission of electricity from Africa to Europe, and Egypt establishes itself as a regional energy hub for the transmission of electricity from Africa to the Arabian peninsula,” Kasoulides stated, adding that with the signing of this agreement, Egypt’s national grid will be connected to Europe’s electricity system.

“This historic project is of great importance to Egypt’s strategic plan for economic development and energy security, and the EuroAfrica Interconnector is connecting Egypt to the European electricity network through Cyprus. Egypt will be an important electricity and energy partner for the European Union,” Egyptian Minister of Electricity Mohamed Shaker told a press conference following the signing of the deal.

Energy experts have praised the signing of this agreement, which will serve Egypt’s strategy to turn into a major energy hub, but they also point to challenges ahead.

Tharwat Ragheb, professor of petroleum and energy engineering at the British University in Cairo, said that the agreement serves Egypt’s plan to become a hub for trade of energy in the Middle East.

“Egypt has also signed electricity interconnection deals with Saudi Arabia, Sudan, Libya and Jordan. Such access to power grid projects will make Egypt a pivotal energy carrier in the Middle East, from the east with Jordan and Saudi Arabia, from the west with Libya, from the south with Sudan, or from the north with Cyprus and Greece,” Ragheb told Al-Monitor.

However, he added that sea operations, as in the case of Cyprus and Greece, are more difficult. “Transporting electricity via sea will need a lot financial resources and high technology. It will also take some time,” Ragheb said.

Hani Farouk, a member of the non-governmental organization of the Egyptian Experts Association for Development who specializes in planning and managing oil and gas projects, said that the Egyptian government needs to work on developing the electricity infrastructure in order to be qualified to connect to the European electricity system.

He added that with the signing of such electricity interconnection agreements with African, European and Asian countries, electricity will become a source of national income for Egypt.

“This is a real game-changer for Egypt, which has been relying on energy imports for years,” Farouk told Al-Monitor.

Farouk said that Turkey has missed its chance to become an energy hub in the Middle East. “Turkey was trying to take Egypt’s position, but it failed when Egypt signed an agreement with Cyprus last year to establish a direct sub-sea gas pipeline that would transport gas from Cyprus’ Aphrodite gas field to Egyptian liquefaction stations for re-export to European countries. What Turkey is now doing is just nonsense threats over territorial waters,” he added. “Now Egypt will become the top gas exporter to Europe.”

Since 2014, Egypt has been ramping up its efforts to address energy shortages and become an oil and gas exporter once again for the first time since the January 25 Revolution.

In January this year, seven eastern Mediterranean countries met in Cairo and agreed to establish the Eastern Mediterranean Gas Forum based in the Egyptian capital. The meeting was attended by ministers of energy from Egypt, Jordan, Palestine, Israel, Cyprus, Greece and Italy, the Egyptian Oil Ministry

said in a press release. Turkey was not represented at the meeting.

The establishment of the forum, which seeks to offer competitive prices and build a regional gas market, comes as Egypt seeks to transform itself into a regional energy hub.

“Deciding to have the headquarters of this forum in Cairo boosts Egypt’s plan to become an energy hub in the Middle East region and the top energy exporter to Europe,” Farouk said.

Found in:ENERGY, EGYPTIAN-TURKISH RELATIONS, GREECE, CYPRUS, EGYPTIAN ECONOMY, ELECTRICITY

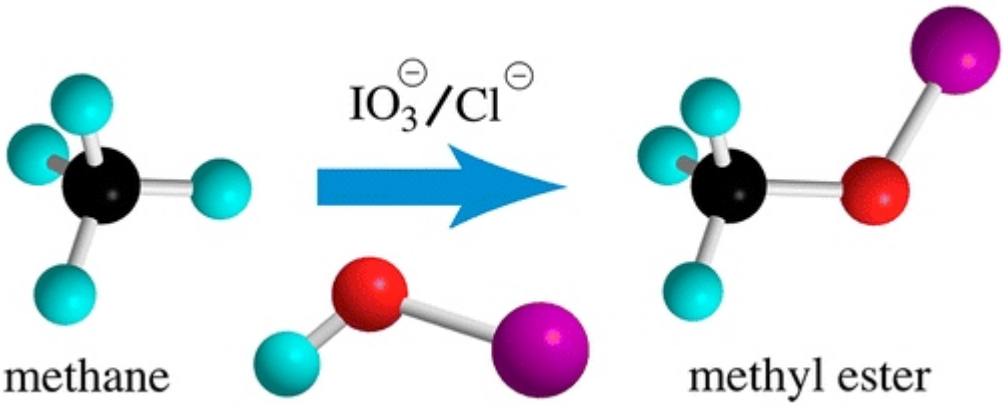
Menna A. Farouk, a journalist and an editor at The Egyptian Gazette, writes about social, political and cultural issues, including press freedom, immigration and religious reforms among other topics. On Twitter: @MennaFarouk91

Total mulls expanding exploration in Mediterranean and Red Seas

Enterprise
THE STATE OF THE NATION

French energy giant Total is considering bidding for new oil and gas exploration concessions in Egypt’s Mediterranean and Red Sea territories, chairman and CEO Patrick Pouyanne told Oil Minister Tarek El Molla in a meeting yesterday, Al Shorouk reports. The company is also looking at increasing investments in expanding fuel stations and fuel transportation.

New gas-to-methanol technology OxE could end oil well “flaring”



Oil wells also release natural gas. But it's burnt off *on site whenever the economics of collecting and piping it don't add up (gas can't use the existing petroleum infrastructure). What if it could be converted into methanol, says* ***Nichole Liebov at the University of Virginia****. She describes a new process called* ***oxyesterification (OxE) that converts methane (the main constituent of natural gas) into methanol cost effectively at low temperatures and pressures****. More work is being done to optimise the process and make it scalable. But without such a solution* ***we will continue to "flare" the gas, adding 300m tons of CO2 to the world's atmosphere annually****.*

Natural gas, which consists primarily of methane, accounts for nearly one quarter of global energy production. Although the **shale gas** boom significantly increased the supply of natural gas, **natural gas cannot be transported to processing plants** using existing infrastructure for petroleum.

Consequently, remote sources of natural gas are in effect "stranded." Methods to use this "stranded" natural gas productively would be highly beneficial and would reduce unproductive flaring.

Egypt allows Eni, BP to export gas through Idku LNG liquefaction plant

The ministry of petroleum has allowed Eni and British Petroleum (BP) to export gas from Zohr and North Alexandria fields through Idku liquefaction factory in accordance with the development agreements of these projects.

A source from the petroleum sector told Daily News Egypt that the government has allowed Eni and BP to export gas after meeting the needs of the local market and achieving production surplus.

He added that Eni and BP’s agreements to develop Zohr and North Alexandria stipulate that the foreign partners can export gas to international markets after obtaining the approval of the ministry of petroleum.

The source explained that the ministry’s decision came after it ensured that the foreign partners will adhere to the development plan of the gas fields.

Foreign companies are keen to export part of their share in concession areas to make bigger profits because the liquefied gas shipments are sold according to international prices.

Italian Eni owns around 26% of the Damietta liquefaction plant after buying 50% of Union Fenosa’s share, which makes it a shareholder of the liquefaction factory.

He explained that Eni increased the production of Zohr gradually to 2.3bn cubic feet of gas per day (scf/day) in March.

The source said that developing the second stage of Zohr field will take place in July, taking total production of gas from 2.7bn scf/day, as estimated in the development plan, to 2.95bn scf/day.

The source said that the price of the partner’s share ranges between $4.2 and $5.88, and is connected to the price of a petroleum barrel in international markets.

The ministry of petroleum is seeking to accelerate production of the next stages in the giant Zohr field upon the instructions of President Abdel Fattah Al-Sisi to speed up connecting the project production to the national grid. Eni increased the field’s production to 2.1bn scf/day with the start of this year.

U.S. Sees State Actor Behind Oil Tanker Attacks in Gulf Region

An attack on two oil tankers near the entrance to the Persian Gulf was likely done by a state actor, according to a U.S. official, heightening tensions over a potential military confrontation between the U.S. and Iran. Oil prices surged.

The incidents on Thursday, including an assault on a Japanese-operated vessel, were the second in a month to hit ships near the Strait of Hormuz chokepoint, through which about 40% of the world's seaborne oil travels. They come as Japanese Prime Minister Shinzo Abe, a rare ally of both Donald Trump and Iranian leaders, visits Tehran in an effort to ease tensions.

A U.S. official said the government is confident it knows which country is responsible but declined to give more details. U.S. and Saudi officials have suggested they think Iran was behind a previous attack last month on ships in the region.

“Even in the absence of ironclad evidence, the U.S. and its allies will point the finger at Iran,” said Fawaz A. Gerges, professor of Middle Eastern politics at the London School of Economics. “These incidents are a bad omen because they point to a calculated escalation that tells us both sides are hunkering down.”

The Front Altair vessel.

Source: AP Photo

The Trump administration said it was evaluating reports of an attack on ships in the Gulf of Oman and will “continue to assess the situation,” White House Press Secretary Sarah Sanders said in an email.

The prospects of a conflict have spiked since the Trump administration tightened its sanctions on Iranian oil exports in early May. Trump last year abandoned the 2015 deal that was meant to prevent Iran from developing a nuclear bomb and reimposed sanctions in a bid to force the Islamic Republic to rein in its military program and proxy militias.

Facing economic catastrophe, Iran has threatened to retreat from the accord itself unless European parties throw it an lifeline. Its supreme leader, Ali Khamenei, told Abe on Thursday that his country would not repeat the “bitter experience” of talks with the U.S.

High-Stakes Diplomacy

The Bahrain-based Fifth Fleet said it received two separate distress signals at 6:12 a.m. and about 7:00 a.m. local time. “U.S. Navy ships are in the area and are rendering assistance,” Commander Josh Frey, a spokesman, said. He couldn’t confirm reports that one of the vessels was struck by a torpedo. Iran said it has rescued 44 sailors.

The manager of one tanker, the Norwegian-owned Front Altair, said it was sailing in international waters when it was damaged by an explosion, and that the incident is being treated as a “hostile attack.” The ship had loaded a cargo of naphtha in Abu Dhabi and was bound for Taiwan, a company official said.

2 tankers have been damaged in a suspected attack near the Persian Gulf.

The area is a waterway for about 35% of the world’s oil transport

A distress call over VHF radio from the Front Altair said the ship was “under attack and on fire,” said Donald MacLeod, a navigation officer on a vessel about 45 miles away on the Oman Sea. “They had to abandon ship.”

Kokuka Sangyo, the Japanese operator of the other ship, said it was attacked twice, three hours apart, forcing the crew to evacuate. The tanker was carrying 25,000 tons of methanol from Saudi Arabia to Asia. Japanese public broadcaster NHK, citing Kokuka Sangyo’s chief executive officer, said the ship was hit by a shell.

Brent oil crude soared as much as 4.5% and was trading at $61.77 a barrel at 3:32 p.m. in London. Stocks in Saudi Arabia and Dubai were down.

The incidents come a day after Iran-backed rebels in Yemen

fired a missile at a Saudi airport, wounding 26 people. The projectile crashed into the arrivals hall, damaging ceilings and windows and causing a fire, though the airport was able to keep functioning with only two flights canceled. Houthi rebels last month hit oil infrastructure hundreds of kilometers inside Saudi Arabia, forcing it to temporarily close an oil pipeline.

Iran distanced itself from any attack.

“Iran is concerned by the suspicious events around commercial tankers related to Japan,” Foreign Ministry spokesman Abbas Mousavi, was quoted as saying on Fars news agency. “We see this as going against efforts from within the region and beyond to reduce tensions.”

Oil tankers last became a target in the Persian Gulf and Arabian Sea during the so-called “Tanker War” in the 1980s — a sideshow of the Iran-Iraq conflict. Between 1981 and 1988, a total of 451 ships suffered some sort of attack in the region from Iraqi or Iranian forces, according to a report from the U.S. Naval Institute.

Norway’s $1tn fund set to get green light for oil divestment

Norway’s $1 trillion sovereign wealth fund is about to get the green-light to dump more than $13 billion in stocks linked to fossil fuels as well as a broad range of emerging-market bonds.

With broad support, parliament will late on Wednesday approve a spate of changes, including a watered down plan to dump oil explorers and producers that spares the biggest global petroleum companies such as Royal Dutch Shell Plc and Exxon Mobil Corp.

It’s nonetheless a milestone for western Europe’s biggest oil-producing country and the global investment community. The decision has also been seized on by climate activists eager to choke off capital to fossil fuel producers.

But Norway has been adamant that the move is only a matter of reducing overall exposure to crude prices. The final divestment list will be worked out between the Finance Ministry and the central bank after the legislation has passed, but initial estimates put about $7.5 billion in oil

and gas stocks on the selling block.

“We’ll need to come back to the timing of implementation, which will depend among others on the bank’s advice,” said Therese Riiser Walen, spokeswoman at the Finance Ministry, which oversees the fund.

Coal Stocks

The impact of tighter restrictions on the fund’s coal investments is more transparent. In addition to an existing ban on companies that base more than 30% of their activity or income on thermal coal, the fund will observe an absolute limit of 20 million tons for miners and 10,000 megawatts for utilities.

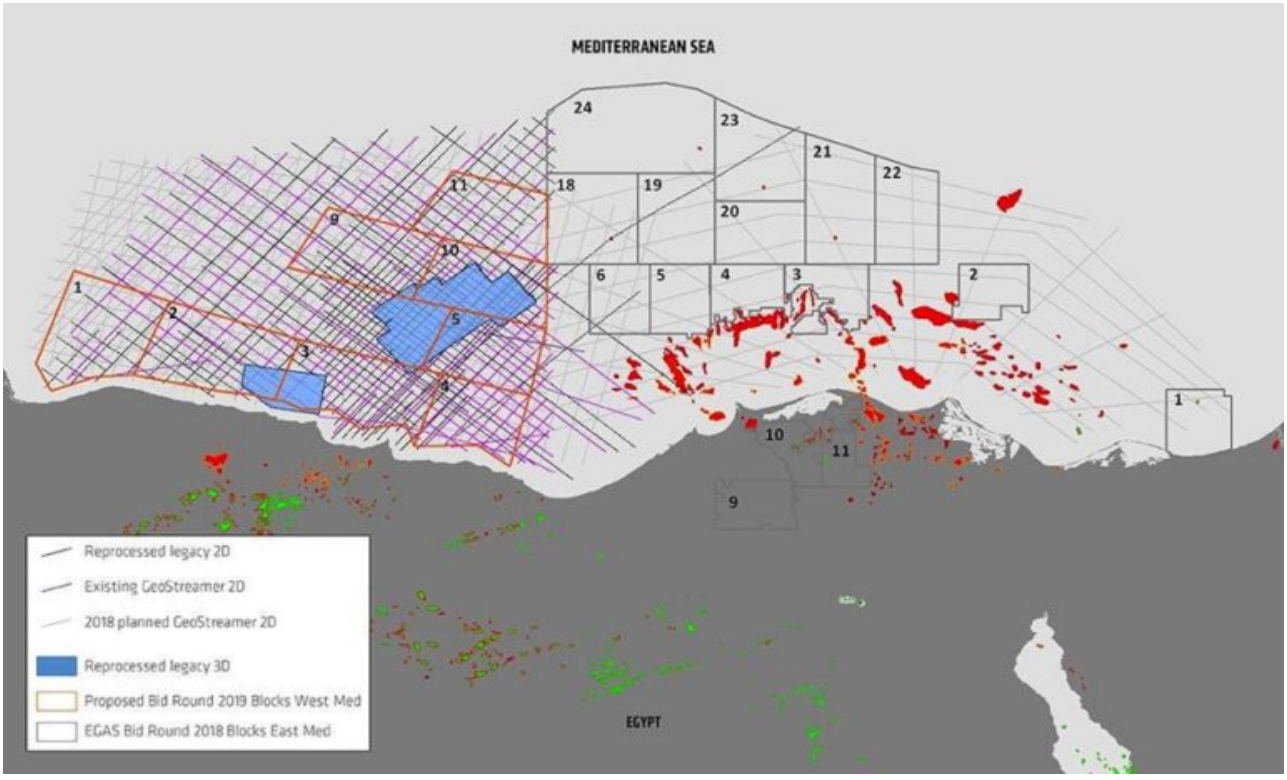
Two climate groups, Urgewald and Future in our hands Norway, estimate 8 coal companies will be divested, equaling $5.8 billion in stocks and bonds. They also urged to the fund to divest a further 18 companies linked to new power plants.

Among the companies affected could be Anglo American Plc, Glencore Plc and RWE AG, according to Urgewald.

The fund will be cleared to invest in unlisted infrastructure for renewable energy, though the government has proposed a cap of 2% of the fund within its so-called environment-related mandates, whose upper limit will be doubled to 120 billion kroner ($14 billion).

Parliament is set to let the fund cut government and corporate bonds from emerging markets. That decision also falls short of the central bank’s initial proposal to narrow bond holdings to just euros, dollars and pounds, and the fund will still be able to invest as much as 5% of its fixed-income portfolio in emerging markets.

Egypt to offer 11 blocks in West Mediterranean Bid Round by Q1-2020



EGAS plans fresh WestMed gas exploration tender: The Egyptian Natural Gas Holding Company (EGAS) plans to put some 11 natural gas exploration blocks in the western Mediterranean up for auction by 1Q2020, a source from the company told Al Shorouk. EGAS has finalized studies and seismic scans, and is waiting for the Oil Ministry to make a final decision on the timeline and the number of concessions on offer.

The great gas rush of 2019: The ministry in February handed five gas exploration concessions in the Mediterranean and Nile Delta to Shell, Eni, BP, DEA and Petronas in the largest bid round in the state gas company's history. A month later, the South Valley Egyptian Petroleum Holding Company (Ganope)

launched a tender for 10 oil and gas exploration blocks off Egypt’s Red Sea coast. It remains unclear when the ministry will announce the winning companies.

كتاب مفتوح إلى سعادة أمين عامّ الأمم المتّحدة أنتونيو غوتيريس

السيّد أنتونيو غوتيريس

الأمين العامّ

الأمم المتّحدة – الأمانة العامّة

نيويورك، NY10017

الولايات المتّحدة الأميركيّة

المرجع: <u>النّزاعات على الحدود البحريّة في الحوض الشّرقي للمتوسّط: الأزمات والفرص</u>

سعادة الأمين العامّ:

أتوّجه إليكم بكتابي هذا طالباً تدخّلكم الطّارئ في نزع فتيل الأزمة المتراكمة الّتي تؤثّر على المصالح الحيويّة وتطال بشكل مباشر دول ساحل الحوض الشّرقي للبحر الأبيض المتوسّط– وبشكل غير مباشر عشرات الدّول في أوروبا وآسيا وأفريقيا. ان مساعدتكم مطلوبة بشكل خاصّ للمساهمة في حلّ الخلاف حول الحدود البحريّة المتداخلة بين الدّول السّاحليّة تماشياً مع الأصول والإجراءات المنصوص عليها في اتّفاقيّات الأمم المتّحدة والقانون الدّولي.

تدركون ان هذه النّزاعات الحدوديّة الطّويلة الأمد قد تسبّبت بمواجهات عديدة بين الدّول في الماضي، كما أدّى عدد الأزمات الدّوليّة الحادّة الّتي تعصف حالياً بالمنطقة ومحيطها إلى زيادة التوتّرات لتصل إلى مستويات خطيرة. إضافةً إلى ذلك، فقد ساهم الاكتشاف الحديث نسبيّاً لمكامن ورواسب النّفط والغاز الوفيرة في المياه الإقليميّة لعدّة دول في الحوض الشّرقي للمتوسّط في رفع الرّهانات والمخاطر الاقتصاديّة المرتبطة بنزاعات الحدود البحريّة. ونتيجة لذلك، زاد العديد من القوى الكبرى – بما في ذلك الولايات المتحدة وبريطانيا وفرنسا من جهة وروسيا من جهة أخرى – من أنشطتها البحرية وغيرها من الأنشطة العسكرية في المنطقة. وتدركون ان وجود العشرات من السفن والطائرات الحربية في مساحة مغلقة نسبياً يسبّب زيادة الاحتكاكات، وبالتالي يعرّض عمليّة حفظ السلام والأمن في المنطقة للخطر ويعوق التنمية الاقتصادية للدول الساحلية المعنية وشعوبها.

أمرٌ واحد يمكن أن يوفّر فرصة لتحقيق الاستقرار الدائم الغائب عن الحوض الشّرقي للبحر المتوسّط منذ فترة طويلة ألا وهو مقاربة متكاملة متعدّدة الاختصاصات قائمة على استعمال "أفضل قانون" والاستفادة من "أفضل علم" ممّا يؤدي الى ترسيم الحدود البحرية المتنازع عليها بشكل عادل ومنصف. استخدمت الولايات المتحدة

مساعيها الحميدة لتعزيز ودعم و/أو العمل كوسيط ودّي بهدف ترسيخ أشكال مختلفة من الحوار بين دول المنطقة. ويبدو أنها أحرزت بعضا من التقدم (خاصةً بين لبنان واسرائيل). صحيح ان هذا الجهد قد ساعد في احتواء التوترات المتصاعدة، ما زال يتعيّن علينا حلّ أيّ من النّزاعات الحدوديّة الرئيسية.

سعادتكم،

أعلم أنني أتحدث نيابةً عن ملايين الأشخاص الذين لم أقابلهم قط عندما أطلب بكل احترام تدخلكم الشخصي في هذه المرحلة الحاسمة والحسّاسة.خصوصا وان أفضل أمل يكمن في تسوية هذه المسائل الشائكة بفعالية بمشاركة أكبر من جانب الأمم المتحدة. وقد تختلف طريقة هذه المشاركة من حالة إلى أخرى وفقاً للظروف. لكن وبشكل عام، فان الأمم المتحدة ومؤسساتها هي من لديها السلطة القانونية والمعنوية لقيادة هذه العمليات إلى نهايات عادلة ونزيهة.

الدّول السّاحليّة السّبعة المعنيّة بموضوع ترسيم الحدود حاليّاً هي قبرص ومصر واليونان واسرائيل ولبنان وسوريا وتركيّا – كلّها دول أعضاء في منظّمة الأمم المتّحدة. (الدّولة الثامنة المعنية بالنّزاع، هي فلسطين، التي تتمتّع بحالة الدّولة المراقبة في الأمم المتّحدة كما تحظى باعتراف أكثر من ثلثي الدّول الأعضاء). في العام 1982 وقع كلّ من قبرص ومصر واليونان ولبنان على اتفاقية أمّا اسرائيل فهي فريق في .(UNCLOS) الأمم المتحدة لقانون البحار اتفاقية العام 1958 الخاصة بالبحر الإقليمي والمنطقة المتاخمة، واتفاقية العام 1958 الخاصة بالجرف القاري. كما قامت قبرص بالتوقيع والمصادقة على المعاهدة الأخيرة في حين وقع لكن لم يصادق عليها. فيما سوريا وتركيا ليستا طرفين في أي من معاهدات قانون البحار.

أكّدت محكمة العدل الدّوليّة – وهي الجهاز القضائي الأساسي لمنظّمة الأمم المتّحدة – في حالات عدّة أنّ قواعد ترسيم الحدود البحريّة الّتي تنصّ عليها اتفاقية الأمم المتحدة لقانون البحار (UNCLOS) تعكس القانون الدّولي العرفيّ، وبالتّالي فهي قابلة للتطبيق بشكل عامّ. لقد تطورت مجموعة من الاجتهادات القضائية المتعلقة بترسيم الحدود البحرية من خلال أكثر من عشرين قرارًا اتخذتها المحاكم والهيئات القضائية الدولية وصدرت في خلال نصف القرن الماضي. تقدم هذه الاجتهادات دليلاً مفيداً للغاية للدول الساحلية لمساعدتها في حل نزاعاتها على الحدود البحرية.

بالإضافة إلى ذلك فقد اضحى المشهد العلمي في ايامنا هذه أكثر تحديدًا – وبالتالي أكثر قابلية للتنبؤ به –التكنولوجيّات والتقنيات الحديثة تؤدي الى رسم الخرائط بدّقة متناهية بحيث أنّه يمكن تقدير المتغيرات التّي كانت غير قابلة للتنبؤ بها في الماضي بدقّة مذهلة. ممّا يعني أن أي إجراءات قضائية دولية أو تحكيم أو أي وسيلة أخرى لتسوية النّزاعات المتعلقة بالحدود البحرية لا يكون مرجعها القوانين والقواعد المنشورة فقط، بل أيضًا العلم والتطور التكنولوجي. ونتيجة لذلك، يمكن للحكومات الآن أن تدخل في مثل هذه الإجراءات وهي تعرف تقريبًا ما ستؤول إليه النتائج مع إزالة الكثير من التخمينات التي قد تتسبب في تأجيل الأعمال أو تأخيرها.

بموجب القانون الدولي المعاصر، ولاستعمال القواعد القانونية والعلمية التّي تطبّق على عمليّة ترسيم الحدود البحرية يمكن اعتبار أنّ ما مجموعه 12 حدًا بحريًا يغطي المساحات البحرية للدول السّاحلية السّبع في الحوض الشّرقي للبحر المتوسط. في

الوقت الحالي، تمّ توقيع معاهدتين فقط لترسيم الحدود البحرية الثنائية في المنطقة:

1) الاتفاقية بين جمهورية قبرص وجمهورية مصر العربية بشأن تحديد المنطقة الاقتصادية الخالصة تاريخ 17 شباط/فبراير 2003 (دخلت حيز التنفيذ في 7 آذار/مارس 2004)؛

2) الاتفاق بين حكومة الكيان الصهيوني وحكومة جمهورية قبرص بشأن تحديد المنطقة الاقتصادية الخالصة تاريخ 17 كانون الأوّل/ديسمبر 2007) (دخل حيّز التّنفيذ في 25 شباط/فبراير 2011.

ممّا يعني أنّ ما لا يقل عن 10 حدود محتملة وأكثر من ست نقاط تقاطع ثلاثية (أو "نقاط ثلاثية") – أي أكثر من 83٪ من إجمالي المنطقة البحرية لشرق المتوسط - لا تزال دون حل و/ أو متنازع عليها.

اعتبارًا من شهر نيسان/أبريل 2019، أصبح للدول الساحلية السبع جميعها في الحوض الشّرقي للمتوسّط صناعات هيدروكربونية بحرية نشطة، مع ما يقارب 238,135 كيلومترا مربعا من المياه التي تغطيها حوالي 231 كتلة نفط وغاز متاحة، تمثل أكثر بقليل من 51 ٪ من إجمالي المياه البحرية في المنطقة. ومن ضمن الكتل الحالية المعروضة حاليًا، يمكن تصنيف حوالي 36٪ منها على أنها "مثيرة للجدل القانوني" نظرًا لعدم اليقين فيما يتعلق بالمواقع الدقيقة للحدود البحرية.ونتيجةً لعدم حسم الغالبية العظمى من الحدود البحرية في الحوض الشّرقي للمتوسّط، ستتأثّر التّنمية الاقتصادية المستقبلية الناتجة من اكتشافات الهيدروكربون في قاع البحر واستثماره سلبًا، ممّا يقلل من إجمالي الإيرادات للمنطقة. ككل يوجد 95 حدًّا (ملاحظة: بالنسبة للبحر الأبيض المتوسط بحريًّا ، منها 31 (أو 32٪) تمّ الاتفاق عليها، بينما 64 (أو 68٪) (لا تزال دون حل و/أو متنازع عليها.

كما تعلمون جيدًا، وفقًا للمادة 33 من ميثاق الأمم المتحدة ، "على أطراف أي نزاع يحتمل أن يؤدي استمراره إلى تعريض عمليّة حفظ السلام والأمن الدوليين للخطر أن يسعوا أولاً وآخيراً إلى إيجاد حلّ عن طريق التفاوض أو التحقيق أو الوساطة أو التوفيق أو التحكيم أو التّسوية القضائيّة أو اللجوء إلى الوكالات أو التّرتيبات الإقليميّة أو غيرها من الوسائل السلميّة الّتي يختارونها".

نظرًا للحقوق والواجبات المذكورة بموجب المادة 33 ، وفي أعقاب

السابقة الناجحة التي حددها سلفكم في تسهيل اتفاقية العام 2008 بين الغابون وغينيا الاستوائية لإحالة نزاعهما حول الحدود البحرية إلى محكمة العدل الدولية، أطلب منكم وبكلّ تواضع أن تفكروا في تعيين مستشار خاص والتعبير علنًا عن استعدادكم لبدء عملية وساطة للأمم المتحدة تهدف إلى حلّ النزاعات المماثلة في الحوض الشّرقي للبحر المتوسط. تعد مشاركتكم الشخصية و إقراركم ذو أهمية حيوية لمساعدة البلدان المعنيّة على النجاح في حل نزاعاتها الحدودية بشكل سلمي ووفقًا للقانون الدولي.

تجدر الإشارة أيضًا إلى أنّه رغم عدم كفاية الدور النشط للولايات المتحدة للتوصل إلى حل لجميع النزاعات الحدودية في الحوض الشّرقي للبحر المتوسّط، إلا أن مشاركتها المستمرة ضرورية. خصوصا وأن الوساطة الأمريكية كانت مفيدة بشكل خاصّ في الحدّ من التوتّرات في إحدى أخطر العلاقات في المنطقة – العلاقة بين إسرائيل ولبنان – فإن دعمها لجهود الأمم المتحدة على جبهات أخرى يعتبر شرطاً مسبقاً لنجاح هذه الجهود.

من شأن الخطوات المذكورة أعلاه أن تساعد في غرس زخم جديد في العملية – والثقة بين الأطراف – في فترة حرجة، في وقت تتطلّب فيه الاكتشافات الحديثة لرواسب النفط والغاز في المناطق البحرية المتداخلة بين الدّول اتّخاذ قرارات استثمارية كبيرة من قبل المستثمرين الأجانب وشركات النفط الوطنية في البلدان المعنيّة. أدت الأنشطة الهيدروكربونية في قاع البحر في السنوات الأخيرة إلى سلسلة من الاكتشافات المهمة، من ضمنها اكتشافان هائلان: حقل غاز ليفياثان، اكتشف قبالة ساحل الأراضي الفلسطينيّة المحتلّة في شهر كانون الأوّل/ديسمبر 2010 واحتوائه على 22 تريليون قدم مكعب من احتياطي الغاز؛ وحقل غاز ظهر، اكتشف قبالة مصر في شهر آب/أغسطس 2015 وهو يحتوي على 30 مليون قدم مكعب. يقع كلا الحقلين، اللذين يخضعان لمرحلة التّطوير، على مسافة قريبة جدًّا بشكل عامّ من الحدود التي تحدّدها المعاهدات الثنائية المذكورة أعلاه.

بمجرد تعيينكم لمستشار خاص، سيكون من المفيد أكثر إن تمكنتم من تسهيل عقد اجتماع وزاري متعدد الأطراف حول النزاعات الحدودية في الحوض الشّرقي للبحر المتوسّط في مقر الأمم المتحدة في نيويورك أو في مكتب الأمم المتحدة في جنيف أو في مركز اخر مناسب وملائم. ويمكن تنظيم اجتماعات تحضيرية للفرق الفنية التي تمثل البلدان المعنية قبل هذا الاجتماع الرفيع المستوى ، وهي عملية يمكن بعد ذلك تكرارها على شكل جلسات إضافية في المستقبل.

سعادة الأمين العامّ،

إن قيادتكم النشطة بهدف تأمين حلول مقبولة للاطراف فيما يتعلّق لن□□بالنزاعات حول الحدود البحرية في الحوض الشّرقي للمتوسط تساعد فقط في تعزيز احترام سيادة القانون الدولي، بل ستساهم أيضًا في تحقيق السلام الدائم وتحسين علاقات الجوار في المنطقة. إضافةً إلى ذلك، فإنّ الحلّ السّلمي لهذه النزاعات سيشكل أيضاً مصدر إلهام للبلدان التي تواجه تحديات مماثلة في جميع أنحاء العالم.

نشكر تفهّمكم سلفاً.

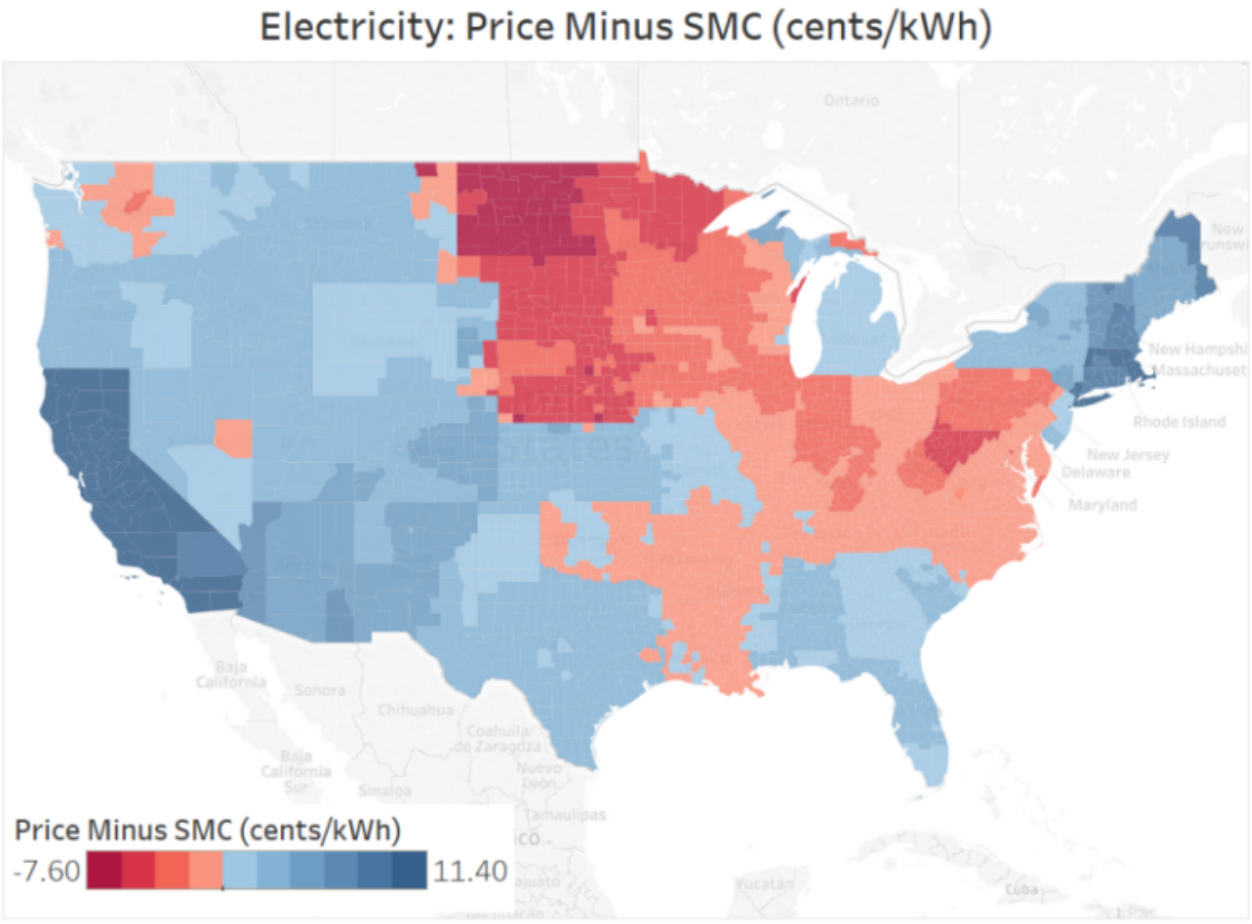
وتفضّلوا بقبول فائق الاحترام،

رودي بارودي

خبير اقتصادي وطاقوي

Energy Efficiency should target inefficient use, not

all use



*Energy efficiency should not just be a matter of reducing energy consumption. As renewables grow pricing and profits should encourage renewable consumption. After all, renewables aren't a problem. And greater renewables consumption means less fossil fuels.**Yet consumer pricing models with a low fixed price + high variable rate are designed to discourage all consumption**, warns **James Bushnell of the Energy Institute at Haas**. He says we must recognise that **consuming energy is not, in and of itself, a bad thing**. Valuable goods and services are made and enjoyed using energy. We should**re-focus pricing to penalise the wasteful and inefficient**, while encouraging the clean.*

There are two duelling, strongly held, views on the definition of energy efficiency. **The idea of energy efficiency, at least**

to economists, is to overcome market failures that can lead to people consuming energy even when the full societal costs of the energy exceed their benefits.

An alternative perspective also pervades policy circles. This perspective appears to be that people should **just use less energy, period**. To economists, this view is a perversion of the notion of energy efficiency. **Energy efficiency should be about the efficient use of energy, not the non-use of energy**.

Pricing electricity

One policy arena where these duelling views are colliding is electricity rate design. About a month ago I participated in a workshop at SMUD concerning a proposal to add a monthly fixed surcharge to homes that newly add rooftop solar. The logic behind the proposal was a familiar one to readers of the Haas blog site: many fixed utility distribution costs are recovered in variable, per kWh rates, and **solar homes avoid paying for those fixed costs when they generate their own electricity but stay connected to the system**. For SMUD, this is a financial concern: how to equitably recover the fixed costs of their infrastructure?

But there is a larger societal issue that gets overlooked when we focus too much on just the financial viability of a distribution utility. **The larger question is: exactly what kind of behaviour do we want to discourage, or encourage, from consumers when we set electricity prices, and why?**

The SMUD proposal was, not surprisingly, roundly criticised and opposed by solar trade groups. Somewhat frustrating, but not surprising, was the vocal opposition from 350.org and other environmental groups as well. My frustration stems from my belief that **we have a much better chance at combating climate change if we direct our scarce resources away from rooftop solar toward more cost-effective solutions like grid-scale solar**. What was surprising to me, however, was how the

conversation turned to the wisdom, even the ethics, of SMUD's general tariff structure, which has a higher monthly fixed charge, and lower variable prices, than most other California utilities.

Electricity prices: how high is too high?

The general tone of this part of the discussion was that **it was socially irresponsible for SMUD to charge a lower variable price of electricity, because it would encourage people to use more electricity**. The argument is often extended to support steeply rising increasing-block rate structures, such as exist in much of California, on the grounds that higher prices encourage conservation (i.e., discourage electricity use). This begs a question that I wish I had asked at the time, but didn't. **If lower electricity prices are "bad", and by implication higher electricity prices "good", then how high is too high?**

Social marginal costs

Economists have a framework for answering this question. It is called **marginal cost**. Because we, as a society, are worried about climate change and other environmental costs, we should include those in marginal cost as well. That's called **social marginal cost (the cost of producing the electricity plus the external damages done by it)**. Ideally marginal prices would be set at social marginal cost, so that **when a consumer turns on a light bulb, or charges their electric vehicle, the incremental amount they pay matches the incremental cost they impose on society**.

In a previous blog, **Severin Borenstein** talked about work we have been doing estimating the social marginal cost of electricity around the US, and comparing it to the marginal ($/kWh) price faced by residential customers. These social costs reflect the marginal wholesale cost of electricity and researchers' estimates of the environmental costs of

generation. There is a striking diversity across the US in the relationship between marginal prices and social marginal cost, but one fact that stands out is that **marginal prices in California are among the highest in the country even though our marginal cost of electricity is among the cheapest and cleanest in the country**.

Energy Efficiency: duelling definitions

Again, the idea of energy efficiency—at least as an economic concept—is **to overcome market failures that lead to people consuming energy even when the costs exceeded their benefits**. There are two types of market failures, broadly speaking: **either the energy price is "wrong" or the price is right but consumers don't respond correctly to it**.

The first failure is usually linked to externalities, like climate change, whose costs may not appear in the energy price, leading consumers to consume "too much" because the price, lacking the environmental cost, is "too low." The second failure can be attributed to a myriad of institutional breakdowns, like **landlords who don't have an incentive to invest in efficiency** for tenants, or behavioural factors such as **consumers misunderstanding or not wanting to spend the time understanding their electricity prices**.

But a corollary to the economic view of energy efficiency is that if true social costs are low, it's OK to consume more. In fact, **it's a bad idea, even wasteful, to devote scarce resources to reducing consumption if the costs of those investments exceed the benefits provided**. This is where electricity pricing comes into the picture. If we set electricity prices well above the costs of serving customers, we are encouraging consumers to take steps to reduce electricity consumption when the electricity cost savings outweigh the investment costs to the customer, but not to society. **Rational consumers will reduce their electricity consumption (or install rooftop solar) based upon these price**

distortions.

Indeed, this is exactly what my colleagues at UC Davis, **Kevin Novan and Aaron Smith** find in their 2016 paper, **The Incentive to Over-invest in Energy Efficiency**. They study air conditioner replacements in Sacramento and estimate that while the AC investments save about $11.50 per month in avoided social costs, they save the consumers who make the investments about $26.50 per month because of SMUD's rate structure where marginal prices exceed marginal social cost.

Considering the fact that marginal electricity prices are more than double the marginal cost of energy (including externalities) in much of California, any behavioural reluctance on the part of consumers to invest in energy efficiency could actually improve rather than reduce total benefits. **The customer's cost-benefit test for saving money needs to be passed by a wide margin before energy efficiency makes economic sense in places like California**. Unfortunately, as the above map illustrates, as a country, we are devoting funds to overcoming customer inertia in all the wrong places. **Energy efficiency program expenditures are highest in states with high prices and clean electricity, and low to non-existent in the states where electricity is dirty and more expensive**.

Less is more, no matter what?

One can argue with the specific numbers, but the general principle of marginal cost pricing is pretty compelling. If consumers want to consume energy and are willing to pay the societal cost to provide it, their consumption creates a benefit that economists call welfare. **If prices rise well above social marginal cost, then we are inefficiently discouraging the use of electricity**. Yet there are some who are not persuaded. They appear to think people should use less energy, period, regardless of whether costs are low or costs are high.

More consumption, so long as it's renewable

The inconsistency in the "less is more, no matter what" view of energy efficiency is becoming more obvious as the grid gets cleaner and we are hoping to electrify other sectors, like transportation and home heating. The former trend means that **the social marginal cost is getting cheaper, even while the total cost of providing electricity is getting more expensive** (including fixed costs like renewable capacity, the transmission system, etc.). In fact, there are times and places where electricity is effectively costless. **Do we really want to discourage consumption, even the charging of EVs, through high prices during times like these?**

It is interesting that some opponents of rate structures like monthly fixed charges also support increased time-varying prices. Support for the latter **implies a recognition that when costs are low it's OK to encourage consumption**. However, opposition to fixed charges when marginal prices are so far in excess of costs implies a rejection of the same principles of marginal cost pricing that would lead one to favour time varying prices.

The other area where the view of "less electricity is better" runs into trouble is when we consider what the alternatives to electricity consumption are. Those alternatives are increasingly gasoline or natural gas. **If marginal electricity is clean and cheap, we want people to shift from gasoline to electricity to power transportation**. But high electricity prices clearly undermine that transition.

So, what exactly are we trying to achieve with electricity prices? Once we deviate from the principle of marginal cost pricing, we risk making moral judgments about how other people perceive the benefits of consuming energy. Now I'm not against doing that. I quite enjoy judging other people, in fact. But

it’s a wobbly foundation to base public policy upon.

As a policy community we need to come to some common understanding about what energy efficiency is and should be. This means **recognising that consuming energy is not, in and of itself, a bad thing. Many fantastic goods and services are made and enjoyed using energy**. What is “bad” is wasting money and polluting the environment. Energy efficiency efforts should be focused on truly wasteful, inefficient consumption. When we place the marginal price of electricity excessively high, we are throwing out the good consumption with the bad and making the achievement of our ultimate goal of a prosperous, clean-energy society harder to reach.