

# Future of solar panel production will have two faces



Solar customers increasingly want panels that capture energy from both their sunny and shady sides, as plummeting component prices finally allow such products to be cost-effective.

Panels that are bi-facial, as the technology is known, will probably become the industry standard, according to one of the world's biggest solar manufacturers, LONGi Green Energy Technology Co. They already dominate in the Middle East and are making inroads in the U.S., Europe and elsewhere, according to another top maker.

The shift is being driven by ever-cheaper parts, which are making the products profitable even though adding solar glass on the underside of panels boosts power output by less than 10%, according to BloombergNEF. Bi-facials will likely make up 15% of the global market next year, up from 4% this year, BloombergNEF analyst Wang Xiaoting said Tuesday at the research firm's annual summit in Shanghai.

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# Russia says new crude-only Opec+ target isn't a loophole



Bloomberg/ Vienna

The exclusion of a light oil called condensate from Russia's output target under the Opec+ deal is not a loophole, but a way to bring the country in line with the rest of group, said Energy Minister Alexander Novak.

At Friday's meeting of the Organization of Petroleum Exporting Countries and its allies in Vienna, Russia was given permission to exclude the liquid hydrocarbon that condenses out of natural gas from its production target. The change brings Russia's November oil output in line with its pledged cut, where previously it had fallen short.

Novak denied the decision was a loophole that would give Russia an opportunity to pump more oil and still claim compliance with the Opec+ deal because the oil nation's statistics don't publish separate crude and condensate volumes.

"We have a very precise way to calculate our crude oil and condensate output field by field, crude variety by crude

variety," Novak said in an interview with Bloomberg TV in the Austrian capital. "It is impossible to create a loophole."

Russia has every means to reflect the breakdown in its data and will be transparent about the oil production levels with Opec, analysts and media, Novak said. The country reached an agreement with Opec on feeding data from its computerised oil-tracking system to the agencies monitoring the group's output, he said.

Russia, one of the architects of the Opec+ deal, has consistently failed to comply with its pledged output cut this year. Last month, Novak said one of the key hindrances was rising production of condensate from new natural gas fields. The nation includes condensate in the total oil production volumes, while its Opec partners do not.

At the Vienna meeting, Opec+ agreed to reduce its output target by 500,000 barrels a day in the first quarter.

Russia's cuts target will be deepened by about 70,000 barrels a day, bringing its total obligation for crude-only supply curbs to some 300,000 barrels a day.

The new rules on condensate will help Russia achieve full compliance with its pledges, Novak said. Already in November, if condensate had been excluded, Russia's crude-only daily cuts reached some 232,000 barrels, more than required under the Opec+ deal, Novak said.

The nation is determined to deliver the pledged cuts in full in the first quarter, even as low winter temperatures in Siberia, Russia's main oil region, make supply reductions difficult, Novak said.

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## **Will Judges Have the Last**

# Word on Climate Change?



In the fight against climate change, one tool is proving increasingly popular: litigation. From the U.S. to India, activists, governments and concerned citizens are suing at a breakneck pace. Supporters want the courts to force oil companies, energy users and governments to pay for past harms and avert future threats. Opponents say climate change policy is a matter for national governments and international treaties, not a handful of judges.

## 1. Why turn to the courts?

Activists and environmentally minded lawyers are seeking new ways to use the law to slow global warming and assign responsibility for the resulting economic damages. They've been given new urgency by President Donald Trump's decision to remove the U.S. from the 2015 Paris climate agreement. Some believe courts are uniquely suited to impose controls where legislatures and government agencies have failed. U.S. states

and cities seeking redress in the courts say it is the only avenue open to them as the federal government has spent the past three years trying to undo climate regulations put in place by President Barack Obama.

## **2. Who are the defendants?**

In the U.S., it's mostly the big oil companies, but energy producers and state and federal agencies have also been sued. Governments are the targets in much of the rest of the world, including Canada, Pakistan, India and Uganda. In Europe, local and national governments have been sued because their clean-air plans fail to meet minimum European Union requirements. These include emissions caps that target older, less efficient diesel cars that are more harmful to the environment.

## **3. What's the argument?**

Some claim the oil and gas industry created a "public nuisance" – an illegal threat to community welfare. Others target their products as unreasonably dangerous to the planet's health. In the U.S., state officials have claimed that the oil corporations knew about the dangers of climate change for decades and schemed to hide the information. Many cases are based on the claim that the health of the environment is a public trust, held by the government for the benefit of future generations.

## **4. So it's about human rights?**

Yes, human-rights arguments are a small but growing approach. Plaintiffs make the case that climate change has threatened or taken away the basic rights to shelter, health, food, water and even life. Arguments range from Colombian children's claims that the deforestation of the Amazon deprives them of a healthy environment, to the assertion of hundreds of elderly Swiss women that their country has not done enough to protect them from rising global temperatures.

## **5. How have governments responded?**

They argue that judges should not be setting government policies. And they often say that the social and economic benefits from pollution sources outweigh the environmental concerns. That was the case South Africa made when it was challenged for building a coal-fired power station, since 16 percent of the population still has no access to electricity.

## **6. What about energy companies?**

They point to the vast economic benefits created by their products. And they say that individuals, industries and governments willingly contributed to climate change through their use of fossil fuels. They deny seeking to mislead consumers about global warming and accuse plaintiffs' lawyers of demonizing them in search of a big bonanza.

## **7. How have the cases fared?**

Environmentalists have won major cases against the Netherlands, Colombia and South Africa. And pending suits have changed behaviors. Germans, for example, are avoiding buying diesel cars since more of them are getting banned from cities that fail to meet standards for particulate matter and nitrogen oxides.

## **8. How have lawsuits fared in the U.S.?**

Initially badly. A federal judge threw out a suit by New York City against five of the world's biggest oil companies in 2018. (An appeals court is considering the city's arguments to reinstate the case.) But the Trump administration, like its predecessor, has so far been unsuccessful in derailing a suit brought by youths who claim the government's role in causing climate change is a violation of their Constitutional rights. A federal appeals court in San Francisco is considering

whether the case can go forward to trial. There are more than a dozen “public nuisance” lawsuits seeking to hold energy companies responsible for billions of taxpayer dollars spent on acclimating to a warming world, or picking up the pieces following unprecedented hurricanes, floods and wildfires. Exxon Mobil Corp. is being sued in New York City (the trial is over and a judge is considering the case) and Massachusetts for allegedly hiding its early knowledge of climate change from the public and misleading investors about the future financial impact of global warming.

## **9. Why do environmentalists keep trying?**

They’re seeking their tobacco moment. Anti-smoking activists and the families of cancer-stricken smokers lost claims against Big Tobacco for decades in the U.S. before the 1990s. A group of state attorneys general turned the tide by teaming up with top private lawyers to take on the industry in state courts. The victory resulted in settlements totaling \$246 billion and permanent changes in the sale and marketing of cigarettes. It’s a model that climate change activists would love to duplicate.

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**Persistent emissions signal global climate goal out of reach**



Bloomberg/ Sydney/New York

Wednesday, 04 December 2019 10:07 PM

While global carbon emissions growth is slowing, the persistent rise is a warning that governments aren't doing enough to stave off the worst consequences of climate change, according to a new report.

Carbon-dioxide emissions from burning fossil fuels likely increased by 0.6% this year, down from 2.1% in 2018, according to a report from the Australia-based Global Carbon Project. Declines in the US and Europe were offset by increases in the fast-growing economies of China and India, it said.

"Current climate and energy policies are not enough to reverse the trends in global emissions," the report's authors said in a press release. "Continued support for low-carbon technologies need to be combined with policies directed at phasing out the use of fossil fuels."

The warning comes as envoys from nearly 200 countries gather this week for UN-organised climate talks, aimed at implementing the 2015 Paris Agreement to limit fossil fuel pollution, and as a global protest movement calling for tougher action on climate change gathers momentum. The global climate outlook is "bleak" and the planet's pathway back to a safe climate is narrowing, the UN warned last week.

The increasingly dire estimates about the pace of climate change are leading to calls for more extreme solutions than the actions that nations have already committed to.

The slowdown in global emissions growth was still significant, Canadell said. Given the margin of error in the projection, an actual decline could not be ruled out, he added.



“It’s never good news when emissions go up, but it’s still not as bad as I had feared,” said Corinne Le Quere, professor of climate science at the University of East Anglia and a member of the GCP.

The GCP results were published in three different journals: an atlas of international emissions in Environmental Research Letters, an analysis of emissions by fuel type in Nature Climate Change and a planetary overview in Earth System Science Data.

Coal use accounted for 42% of global emissions from fossil fuels, but its importance in power generation is on the wane. In the US, an abundant supply of cheap natural gas is helping accelerate the transition away from the dirtiest fuel.

At the same time, increased gas use was an important driver of emissions growth in 2019, Canadell said.

China’s emissions growth is projected at 2.6% this year, similar to the pace in 2017 and 2018 and the nation is catching up with European emissions on an individual basis at about 6.7 tonnes per person per year. India’s increase is expected to ease to around 1.8% from 8% last year, due to an economic slowdown and a particularly wet monsoon season, which saw strong hydropower generation displace some coal-fired generation.

“The failure to mitigate global emissions, despite positive progress on so many aspects of climate policy, suggests that the full bag of policy options is not being effectively deployed,” the report said.

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## **OPEC gearing up for deeper**

# oil cuts, Russia yet to agree



- \* Iraq says key members support deeper cuts
- \* Riyadh needs higher prices to support Aramco IPO
- \* Oil glut looming without cuts as U.S., Brazil, Norway pump more

By Bozorgmehr Sharafedin, Alex Lawler and Olesya Astakhova

VIENNA, Dec 4 (Reuters) – OPEC is gearing up to deepen production cuts later this week but still needs to agree with allies such as Russia over details of a deal to support oil prices and head off a looming oil glut next year.

The Organization of the Petroleum Exporting Countries (OPEC) meets on Thursday in Vienna followed by a meeting with Russia and others, a grouping known as OPEC+, on Friday.

OPEC+ has been curbing output since 2017 to counter oversupply as a result of booming output in the United States, which has become the world's biggest producer and is not taking part in cuts.

Next year, rising production in non-OPEC countries such as Brazil and Norway threaten to add to the glut.

OPEC's actions have repeatedly angered U.S. President Donald Trump, who demanded OPEC's de facto leader Saudi Arabia bring oil prices down if it wants Washington's to provide Riyadh with military support against arch-rival Iran.

In the past few months Trump has remained silent on OPEC but he faces re-election in November next year when the issue of gasoline prices is likely to become a hot political topic again.

Washington's ongoing trade dispute with China has also clouded the economic and therefore oil demand outlook for 2020.

OPEC's second largest oil producer Iraq said on Tuesday key members supported deepening cuts for OPEC+ from the current level of 1.2 million barrels per day, or 1.2% of global demand.

"My understanding is that they (Saudis) do (prefer it)," Iraqi Oil Minister Thamer Ghadhban told reporters in Vienna.

## **DEEPER CUTS AND COMPLIANCE**

Saudi Arabia needs higher oil prices to support its budget revenue and the pending share sale of state-owned oil giant Saudi Aramco with pricing expected on Thursday.

OPEC's actions have supported oil prices at around \$50-\$75 per barrel over the past year and on Wednesday they traded at \$61 per barrel.

Iraq's Ghadhban said new cuts could be expanded to 1.6 million

bpd while OPEC sources have also said Riyadh was pressing fellow members Iraq and Nigeria to improve their compliance with quotas, which could provide an additional reduction of up to 400,000 bpd.

Non-OPEC Russia has yet to agree to extend or deepen cuts from its current pledge of 228,000 bpd as its companies are arguing they are finding it tough to reduce output during winter months due to very low temperatures.

Russian Energy Minister Alexander Novak said on Tuesday that Moscow had yet to finalise its position: "Let's wait ...But I think the meeting, as usual, will be of a constructive nature."

A source familiar with the Russian thinking told Reuters that Moscow would "most likely" reach a consensus with OPEC this week and just needed to iron out a few outstanding issues.

One sticking point for Russia this time is how its output is measured – it includes gas condensate in its figures, while other producers do not.

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## **Full text of Turkey-Libya maritime agreement revealed**



Nordic Monitor has obtained a copy of a recent maritime agreement between Turkey and Libya that determines the Turkish-Libyan continental shelf and exclusive economic zone coordinates.

The agreement, officially titled “Memorandum of Understanding Between Turkey and Libya on Delimitation of the Maritime Jurisdiction Areas in the Mediterranean,” has been the subject of criticism, especially by countries such as Egypt, Greece and Cyprus in the Mediterranean region.

The agreement states that both Turkey and Libya have determined a precise and equitable delimitation of their respective maritime areas in the Mediterranean in which the parties exercise sovereignty and sovereign rights and/or jurisdiction in accordance with the applicable rules of international law, taking into account all relevant circumstances.

It refers to achieving equitable and mutually acceptable solutions to the above-mentioned issues through constructive

negotiations and in the spirit of good and friendly relations and says that the memorandum of understanding will contribute to the strengthening of relations and encourage further cooperation between the parties in the interest of the two brotherly countries.

The agreement, which was signed in Istanbul on November 27, 2019, includes the following provisions:

According to Article 1, the parties have agreed on these boundaries:

“The boundaries of the Continental Shelf and the Exclusive Economic Zone in the Mediterranean between the Republic of Turkey and the Government of National Accord-State of Libya begins at “Point A” (34° 16′ 13.720″N -026° 19′ 11.640″E) and ends at the Point B (34° 09′ 07.9″N -026° 39′ 06.3″E).

“The boundaries of the Continental Shelf and the Exclusive Economic Zone determined in ARTICLE I, paragraph 1 of this Memorandum of Understanding are shown on the Maritime Chart INT 308 (Data Source: BA Chart Edition 1992), scale 1: 1 102 000 (Annex 1 ). The coordinates are shown in the chart at Annex 1 in its coordinate system. The geographical coordinates referred to in ARTICLE I of this Memorandum of Understanding are expressed in terms of the World Geodetic System 1984 (WGS'84).

“Base points coordinates that are used to determine the equidistance line are shown in Annex.”

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# Diplomat Leaks Map Confirming Turkey's Real Territorial Claims



A Turkish diplomat has revealed a map which delineates waters in the Mediterranean claimed by Turkey, amid an ongoing months-long standoff with Cyprus and Greece over Turkish oil and gas exploration and drilling inside Cyprus' Exclusive Economic Zone (EEZ).

"After signing deals with its own puppet state in occupied northern Cyprus and with the pseudo-government in Libya's Tripoli, Turkey declares that it owns half of the eastern Mediterranean," Aron Lund, an analyst at The Century Foundation, observes of the newly published map.

New map outlining Turkey's claimed continental shelf and the borders of its Exclusive Economic Zone (EEZ), via Hurriyet Daily.

Meanwhile the entire eastern side of Cyprus is claimed by the internationally disputed "Turkish Republic of Northern Cyprus."

And Turkey's Hurriyet Daily explains: "With the chart, Ça?atay Erciyes showed the outer boundaries of Turkey's continental shelf and EEZ, designated in a 2011 agreement between Turkey and the Turkish Republic of Northern Cyprus (TRNC), the median line between Egypt and Turkey's mainlands and a recent memorandum with Libya."

Over the past year Turkey has sent both oil and gas exploration ships, as well as military transport vessels, into Cypriot waters in the East Mediterranean related to expanded claims based on the Turkish occupation of northern Cyprus (since 1974), earning the condemnation of both Nicosia and top EU officials, who have defended EU-Cyprus' interpretation of the conflict.

Turkey claims western waters off Cyprus, with the so-called TRNC eastern waters; and now Erdogan is cutting deals with Libya to expand from the southern Mediterranean.

In nearby Libya, as Turkish military advisers continue to play a key role in support of the Tripoli-based Government of National Accord (GNA) against an offensive led by Gen. Khalifa Haftar's Libyan National Army (LNA), Turkey is also busy expanding maritime defensive operations off North Africa.

"On Nov. 27, Turkish President Recep Tayyip Erdoğan held a closed meeting in Istanbul that lasted over two hours with Fayed al-Sarraj, chairman of the Presidential Council of Libya," Hurriyet Daily reports further.

In that meeting the two leaders reportedly struck a deal which is seen as key to expanding Turkey's maritime claims:



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# Law of the Sea, Monaco Conference, East Mediterranean (Part 1)



The Eastern Mediterranean: Will Law of the Sea Applications  
Unlock Both Seabed Hydrocarbons and a Regional Peace? By Roudi  
Baroudi and Robert van de Poll



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**Law of the Sea, Monaco  
Conference, East  
Mediterranean (Part 2)**



The Canada-US Boundary Dispute In The Beaufort Sea: Employing an Integrated Law-And-Science Approach To Resolving Maritime Boundary Disputes In Arctic Waters by Robert van de Poll / Pieter Bekker



# IEA sees calm global oil market in 2020 as new supplies soar



Bloomberg/ London

Global oil markets are likely to remain “calm” next year as soaring production outside Opec and high inventories keep consumers comfortably supplied, the International Energy Agency said.

Supplies outside Opec – driven by the US, Brazil, Norway and Guyana – will increase by 2.3mn barrels a day in 2020, almost twice the expansion in world oil demand, the agency said in its monthly report. The growth estimate is about 100,000 barrels a day higher than last month.

Oil prices have remained steady near \$60 a barrel in London for several months. US sanctions on Iran’s exports and political unrest in Venezuela and Iraq have also had limited impact.

“The calmness is supported by a well-supplied market and high inventories,” said the Paris-based agency, which advises most

major economies on energy policy. "This may continue into 2020 because non-Opec countries will grow their production" significantly.

As a result, the Organization of Petroleum Exporting Countries – which has cut production this year to prevent a surplus – is currently pumping about 1.7mn barrels a day more than will be needed in the first half of next year, the report showed.

Opec and its partners will meet on December 5 to 6 to consider next year's output levels, though they've so far indicated little desire to make the deeper cuts that would be needed to avert a new oversupply. The outlook for global economic growth remains precarious, pressured by the ongoing trade dispute between the US and China.

"The hefty supply cushion that is likely to build up during the first half of next year will offer cold comfort to Opec+ ministers gathering in Vienna at the start of next month," the IEA said. "However, a continuously well-supplied market will lend support to a fragile global economy."

Oil inventories in developed nations accumulated by about 9mn barrels during the third quarter, even as Opec deliberately restrained output.

Another reason for the market's torpor has been "sluggish" processing of crude oil by refiners, whose intake will drop this year for the first time since the financial crisis of 2009, according to the report. However, the decline is a very modest 90,000 barrels a day.

In the short term, the market ought to pick up as global oil demand growth accelerates. Low oil prices and robust US demand for petrochemicals will spur worldwide consumption to expand by 1.9mn barrels a day year-on-year in the fourth quarter, more than four times the rate observed in the second, the agency said.

The calmness the IEA sees resuming next year fits with its expectations for the long term, outlined in its annual World Energy Outlook earlier this week. That report anticipates that increasingly efficient car engines and the adoption of electric vehicles will cause world oil demand to plateau

around 2030.