

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.

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



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



World's only \$100bn utility owes its rise to wind power



Two decades ago, when coal ruled U.S. power generation, a Florida utility plowed some of its extra cash into a wind farm atop a desolate Oregon plateau.

It was the start of an unimaginably successful bet.

This year, that company – now named NextEra Energy Inc. – became the world's first utility with a market capitalization of more than \$100 billion, thanks largely to its clean-power business. It's almost twice as valuable as the oil major ConocoPhillips and has developed enough wind and solar farms across the U.S. and Canada to power the entire nation of Greece. Shares have doubled in four years, outperforming virtually every other stock in the industry.

"They made a bunch of strategic moves early and aggressively that have paid off very well for them," said Andrew Weisel, an

analyst at Scotia Howard Weil.

Not that NextEra started down the clean-energy road with a master plan. The move into renewables happened pretty much by accident after the company began lending money to wind-farm developers. Some of them ran into financial troubles. NextEra forgave debts in exchange for majority stakes in the farms.

As it would turn out, the wind farms weren't duds.

"Lo and behold, we did some projects that were quite profitable," said Lewis Hay III, the company's chief executive officer from 2001 to 2012.

So Hay pulled together a renewable energy team of his own. One of his early moves was to recruit two of his former co-workers from a consulting firm: One was Moray Dewhurst, who eventually served as NextEra's chief financial officer. The other was Jim Robo, who at the time was an executive for General Electric Co.

Robo, a Harvard MBA, became NextEra's CEO in 2012. He rarely grants media interviews and declined to comment for this story.

"Things really took off when Lew, Moray and Jim got together," Barclays Plc analyst Eric Beaumont said.

When Robo came on board in 2002, wind power was a tiny slice of the U.S. power mix. But in another stroke of luck, Congress had just extended a tax credit that would prove to be the key to a wind generation boom across America that's still going.

It helped turn what was a once-sleepy utility – established in 1925 as Florida Power & Light – into a global powerhouse.

NextEra, which changed its name in 2009 to reflect its growing focus on alternative energy, now has wind and solar farms in about two dozen U.S. states and four Canadian provinces. They total roughly 18 gigawatts, enough to power almost 13 million

homes. Last year, its clean power business – in addition to some natural gas and nuclear plants – raked in \$4.7 billion in profit, 70% of its net income.

And the company isn't done growing. It already has contracts to add another 12 gigawatts of renewables.

Challenges remain. The federal tax credit for wind farms is set to start phasing out soon. And in Florida, a campaign is under way to pass a constitutional amendment that would break up monopolies held by NextEra's utilities, Florida Power & Light Co. and Gulf Power. On an adjusted basis, the company's utility business still made up the bulk of its earnings last year.

Not all of NextEra's bets have panned out. Its \$18 billion attempt to buy Oncor Electric Delivery Co. in Texas crashed and burned. And its \$2.6 billion attempt to buy Hawaiian Electric Industries Inc. fell apart, too.

And for all the company's clean energy, NextEra unsuccessfully fought in support of a 2016 measure in its home state of Florida that critics said would have limited rooftop solar growth and, hence, protected utility revenue. The company has a plan to install 30 million solar panels in Florida by 2030 and use batteries to replace fossil-fuel plants in its fleet.

Long-Term Contracts

NextEra's strategy has hinged on building projects in states with deregulated power markets that required utilities to buy a certain amount of electricity from wind or solar farms, including Texas and California. It enables NextEra to line up long-term contracts, ensuring revenue for a decade or more.

Early on, Robo negotiated a deal with his old company: GE. NextEra had a contract to buy natural gas turbines from the conglomerate. But the market for gas plants was in decline. So the utility convinced GE to rejigger the deal and allow it to

buy wind turbines instead.

“That’s a cause that led us to scale up our business much faster than maybe otherwise we would have done,” Hay said. The scale soon gave the company an advantage that made it hard for others to catch up.

One of Robo’s adages is wind and solar are essentially big data operations. An early sign was in 2006, when NextEra bought WindLogics Inc., a high-tech forecaster. At the time, wind developers relied on WindLogics’s computer modeling techniques to predict wind patterns and pinpoint exactly where to site turbines. By acquiring the company, NextEra locked up that edge for itself.

“That became a very powerful advantage,” Stephen Byrd, an equity analyst at Morgan Stanley, said in an interview.

The company has said it will do just fine even after the federal tax credit for wind farm expires. The company’s size makes its well positioned to benefit from U.S.’s ongoing shift away from fossil fuels, said Timothy Winter, a portfolio manager at Gabelli Funds LLC.

“They’re still in the very early innings of the ball game,” Winter said.

Algeria’s Sonatrach renews gas export deal with France’s Engie



ALGIERS, Nov 19 (Reuters) – Algerian state energy firm Sonatrach has renewed a gas export contract with France's Engie, it said on Tuesday, a few days after Kamel Eddine Chikhi was appointed as its new chief executive.

Energy sales represent a crucial source of foreign currency for Algeria, but have been declining since oil prices dropped in 2014.

Rising domestic demand and stagnant output have also made it hard for Sonatrach to maintain Algerian export levels. That had raised some doubts over whether the Engie deal would be renewed, an industry source in Algeria said.

Sonatrach said the contract covers the medium and long term, but did not specify how much gas it will deliver to Engie.

The state energy firm has already renewed gas export contracts this year with Enel, Galp Energia, Eni, Botas, Naturgy, and Edison. Its total gas exports in 2018 were 51.4 billion cubic metres, with Italy and Spain accounting for two-thirds of the volume.

"We will work to renew our oil and gas reserves that have been declining in the past decade," Kamel Eddine was quoted as

saying on Sunday after his appointment.

Algeria's lower house of parliament has passed a new energy law to boost the country's attractiveness to international oil companies investing in the sector, but has kept a rule preventing majority foreign ownership of hydrocarbons projects. (Reporting By Lamine Chikhi; Editing by Angus McDowall and Jan Harvey)

Europe needs robust China strategy



By Ana Palacio/ Madrid

Two months ago, in his address to the United Nations General Assembly, UN Secretary-General António Guterres expressed his fear that a “Great Fracture” could split the international order into two “separate and competing worlds,” one dominated by the United States and the other by China. His fear is not

only justified; the fissure he dreads has already formed, and it is getting wider.

After Deng Xiaoping launched his “reform and opening up” policy in 1978, the conventional wisdom in the West was that China’s integration into the global economy would naturally bring about domestic social and political change. The end of the Cold War – an apparent victory for the US-led liberal international order – reinforced this belief, and the West largely pursued a policy of engagement with China. After China became a member of the World Trade Organisation in 2001, this process accelerated, with Western companies and investment pouring into the country, and cheap manufactured products flowing out of it.

As China’s role in global value chains grew, its problematic trade practices – from dumping excessively low-cost goods in Western markets to failing to protect intellectual-property rights – were increasingly distortionary. Yet few so much as batted an eye. No one, it seemed, wanted to jeopardise the profits brought by cheap Chinese manufacturing, or the promise of access to the massive Chinese market. In any case, the thinking went, the problems would resolve themselves, because economic engagement and growth would soon produce a flourishing Chinese middle class that would propel domestic liberalisation.

This was, it is now clear, magical thinking. In fact, China has changed the international system much more than the system has changed China.

Today, the Communist Party of China is more powerful than ever, bolstered by a far-reaching artificial intelligence-driven surveillance apparatus and the enduring dominance of state-owned enterprises. President Xi Jinping is set for a protracted – even lifelong – tenure. And, as US President Donald Trump has learned during his ill-fated trade war, wringing concessions out of China is more difficult than ever. Meanwhile, the rules-based international order limps along, without vitality or purpose. Emerging and developing economies are frustrated by the lack of effort to bring institutional

arrangements in line with new economic realities. The advanced economies, for their part, are grappling with a backlash against globalisation that has not only weakened their support for trade liberalisation and international cooperation, but also shaken their democracies. The US has gradually withdrawn from global leadership.

As a result, international relations have become largely transactional, with ad hoc deals replacing holistic co-operative solutions. Institutions and agreements are becoming shallower and more informal. Values, rules, and norms are increasingly regarded as quaint and impractical.

This has produced a golden opportunity for China to begin constructing a parallel system, centred on itself. To that end, it has created institutions like the Asian Infrastructure Investment Bank and the New Development Bank, both of which mimic existing international structures. And it has pursued the sprawling Belt and Road Initiative – an obvious attempt to position itself as a new Middle Kingdom.

Yet many, including in Europe, are not particularly concerned about the emergence of this parallel system. So long as it brings ready access to project finance, it's fine with them. As Europe becomes increasingly alienated from the US, many Europeans also believe that they can improve their strategic position by situating themselves on the frontier between the two emerging worlds.

That strategy may offer some advantages, including opportunities for arbitrage. But as anyone who lives on a fault line knows, there are also formidable risks: friction between the two sides is bound to shake the foundations of whatever is positioned atop the boundary.

This is especially true for the European Union, which is built on a commitment to co-operation, shared values, and the rule of law. If the EU aids in building a parallel structure that contradicts its core values, particularly the centrality of individual rights, it risks severing its meta-political moorings – the beliefs to which its worldview is tethered. A Europe adrift will eventually sink.

The solution is not for Europe simply to take America's "side," and turn its back on China. (That, too, would run counter to European values.) Rather, the EU must heed Guterres's call to "do everything possible to maintain a universal system" in which all actors, including China and the US, follow the same rules.

In this sense, the recent joint statement by Xi and French President Emmanuel Macron reaffirming their strong support for the Paris climate agreement is promising, as is Europe's growing recognition that China is not only a partner or economic competitor, but also a "systemic rival." But this is only a start. Europe needs a robust China strategy that recognises the profound, often subtle challenges that the country's rise poses, mitigates the associated risks, and seizes relevant opportunities.

Achieving this will require perspective and discipline, neither of which comes naturally to the EU. But there is no other choice. As soon as Europe stops defending the rule of law and democratic values, its identity – and its future – will begin to crumble. – Project Syndicate

* Ana Palacio is former Minister of Foreign Affairs of Spain and former Senior Vice-President and General Counsel of the World Bank Group. She is a visiting lecturer at Georgetown University.

Opec's flaring crises add new risk for oil supply



Bloomberg/London

Opec may have no appetite to cut oil production deeper when it meets next month, but flaring political crises across the group are once again threatening supply.

Unrest erupted in Iraq and Iran this month – two of the Middle East’s biggest producers – as people took to the streets protesting financial hardship and bad governance. That’s adding to the range of supply threats already afflicting the Organization of Petroleum Exporting Countries, from economic collapse in Venezuela to simmering discontent in Algeria.

“We kind of had a second Arab Spring, but it’s been under the radar,” said Helima Croft, chief commodities strategist at RBC Capital Markets. “The real question is what is going to happen in Iraq.”

Iraq, Opec’s second-biggest producer, has cracked down on demonstrations against corruption in recent weeks that have spread to the southern oil hub of Basra. Iran has seen its oil exports slashed by US sanctions and is suppressing protests spurred by the resulting economic stagnation.

Opec and its allies – who together pump about half the world’s oil – will meet in Vienna in early December to consider production levels for 2020, having cut output this year to

prevent a global surplus. Despite signs that fragile demand and surging US shale supply will unleash a new glut, they've signalled no desire to reduce output further.

They may not have a choice.

In recent years, unplanned supply disruptions within Opec nations have done as much to keep markets balanced as the group's deliberate cutbacks. Iran and Venezuela have lost a combined 1.7mn barrels a day since last October, more than all 24 nations in the Opec+ coalition agreed to cut this year.

As turmoil intensifies across the group, next year could see more accidental losses: oil prices of about \$60 a barrel are already below levels most Opec nations need to cover government spending, and a further slump would only deepen the strain.

"There is no better way to put it: the geopolitical risk is rising in the Middle East again," said Tamas Varga, an analyst at PVM Oil Associates Ltd in London.

Algeria is struggling to placate a mass youth-led movement seeking change after ousting long-term President Abdelaziz Bouteflika earlier this year, and Libya remains split by armed factions. Ecuador, which will leave Opec in January, suffered a 20% slump in oil production last month amid riots and looting.

In Iran protests were triggered by an increase in gasoline prices.

The biggest risk is posed by Iraq, according to RBC's Croft. While the country's oil sector has proven robust during recent turbulence, even boosting output when Islamic State militants captured swathes of territory five years ago, the latest demonstrations reflect a new level of popular discontent.

"If you had attacks on infrastructure, oil workers going on strike – Iraq is the place that could surprise the market," she said.



By Laurie Goering/London

Population growth and climate change are putting increasingly intense pressure on the planet's limited water supplies, with worsening shortages emerging from the Middle East to Asia and Latin America, researchers and bankers said on Monday.

"All the local crises around the world are building up to a global crisis," Torgny Holmgren, executive director of the Stockholm International Water Institute, told a conference on the issue at London-based think-tank Chatham House.

But easing the threat and ensuring more people have access to a stable, safe water supply will be hugely challenging because water access and distribution are tied up in politics, cultural views and entrenched systems, conference speakers said.

In Jordan, the third most water-scarce country, raising water prices to reflect the shortage would make economic sense – but not when nearly 1.5mn Syrian refugees, on top of 9mn citizens, depend on it, said Craig Davies of the European Bank for Reconstruction and Development (EBRD).

“It’s potentially a powder keg,” said Davies, who heads climate resilience investments for the bank. “From a political point of view, it’s imperative to keep water tariffs very low.”

Uzbekistan, meanwhile, has built its economy on exports of thirsty cotton, something that might not make sense as water becomes more scarce.

But “you can’t adjust that very easily” without upsetting farmers and the economy, Davies added.

In North Africa, newly available solar-powered water pumps are giving drought-hit farmers crucial access to irrigation – but also removing incentives to use water sparingly as farmers no longer have to buy fuel for diesel-powered irrigation pumps.

“There is literally no control,” said Annabelle Houdret, a senior researcher at the German Development Institute who works in the region.

Aquifers there could be depleted, she warned.

In many Islamic countries, water is seen as a human right and a gift from God, so asking governments to charge people for better water services can be complicated, Davies said.

In most places the EBRD works, the price users pay for water is far below the actual cost of bringing it to them, he said, meaning there is often too little money to invest in treating and delivering water, and maintaining and expanding networks.

“If you’re not paying a rational price for the water, the incentive is to use the water irrationally,” he added.

Getting water use right in an increasingly parched world is crucial, said Olcay Unver, vice-chair of UN-Water, a co-ordinating agency on water issues for the United Nations.

Three out of every four jobs globally depend on water in some way, including small-scale farmers who produce 80% of the world’s food, said Unver, who is also a water advisor for the United Nations Food and Agriculture Organisation (FAO).

By 2050, FAO estimates food demand globally will rise by 50% but “we don’t have 50% more water to allocate to agriculture”, he noted, adding it is already the dominant water user.

Demand for water is also surging in fast-growing cities, where

more than half of people live now and over two-thirds are expected to live by 2050, Unver said.

Getting enough water to everyone is particularly difficult as climate change brings more erratic rainfall, with many places hit by floods and droughts in turn, conference speakers said.

But some countries are coming up with innovative ways to protect or expand supplies.

In India's Gujarat state, for instance, much of the year's rain comes in monsoon season – and then rapidly evaporates, said Gareth Price, a Chatham House senior research fellow who works on South Asia.

But some farmers have begun gathering leftover straw after harvest and piling it in low-lying spots in their fields to absorb and hold excess rain, allowing it to slowly filter into the groundwater, he said.

The innovation – which also helps cut down on burning of field stubble, a major source of air pollution in the region – has won World Bank funding for its expansion, he said.

In Brazil, meanwhile, farmers and ranchers who preserve and plant more forests along rivers to protect water supplies are paid by downstream users under a “water producers” programme, said Paulo Salles, director of a Brazilian water regulatory agency.

Daanish Mustafa, a geography professor at King's College London, said growing water scarcity would unlikely drive a surge in wars, but instead lead to more “unjust co-operation” – cross-border sharing pacts where the stronger party gets the better deal.

Water access is already hugely unequal, speakers said, with US residents using 700-900 litres a day, Europeans about 200 litres and many of the world's poorest just 10-15 litres.

Reliable access to water is crucial to achieving many of the global sustainable development goals (SDGs) – from ending poverty and hunger, to reducing inequality – they added.

Yet climate change threatens to put secure water access ever further out of reach.

“With the SDGs, we can see the light at the end of the tunnel

– but the problem is it's almost certainly a climate change train coming," said Christopher Hurst, director general of projects for the European Investment Bank. – Thomson Reuters Foundation

France to end tax breaks for palm oil in biofuel



PARIS – France's parliament on Friday voted to remove tax breaks for the use of palm oil as a biofuel, a day after a ruling in favour of maintaining the advantage led to howls of protests from environmentalists.

A large majority of members present voted against a government-backed proposal to delay until 2026 the end of palm oil's tax advantages, giving companies like oil major Total more time to phase out the use of palm oil in biofuels.

Late on Thursday, the National Assembly, France's lower house

of parliament, had agreed to extend the tax breaks, but following strong pushback from environmentalist MPs within President Emmanuel Macron's ruling LREM party, the government agreed on a second vote.

"This is an important issue that warrants debate," Environment Minister Elisabeth Borne told MPs.

She proposed maintaining the tax breaks while a committee reconsidered the issue, but the extension of tax breaks for palm oil was rejected by 58 votes to two.

"Senators considering the text in coming days and MPs who will have to consider it again before year-end will have to remain extremely vigilant to make sure that the scrapping of this tax break is not somehow again put into question during the legislative process," Greenpeace said in a statement.

Greenpeace added that it is "shocking that the government... continues to defend the interests of multinational companies which jeopardise the climate and the environment".

Critics say that using palm oil in biofuel adds to deforestation in tropical countries and contributes to the destruction of habitat for endangered species such as orangutans.

Moves in Europe to restrict palm oil use have also created tensions with Malaysia and Indonesia, which dominate global production of the oil.

The debate was part of 2020 budget discussions, and the bid to extend the tax breaks was another attempt to overturn 2019 budget provisions to end them.

The 2019 budget specified that palm oil would be removed from a list of permitted biofuels from January 2020.

Total had tried to overturn the ban through an appeal to France's constitutional court, which was rejected in October.

The firm argued that removing the tax breaks would put at risk its biofuel production site in La Mede, southern France.

Total has invested 300 million euros to convert the site from a crude oil refinery. It started production in July, using palm oil as part of the feed stock to produce biofuel.

– **Reuters**

Energy stocks are pushing Canada equities to record



Bloomberg /Toronto

Investors are finally warming up to Canadian energy stocks. There's no shortage of superlatives to describe market optimism as the price of oil climbed and corporate profitability concerns eased. The S&P/TSX Energy Index is on pace for its biggest monthly gain since January. It also has the No 1 spot among sectors on the S&P/TSX Composite Index on

Friday. And the iShares S&P/TSX Capped Energy ETF saw its largest inflows since June last month.

Energy stocks have been mired in negative headlines for years with a strained pipeline network pushing Canadian crude prices lower and the exodus of multinational energy companies.

Now, investors are flooding back in as third-quarter results came in better than expected, and companies bought back shares, raised dividends and divested assets to shore up cash.

"They're being very good to the shareholder," John Kinsey, portfolio manager at Caldwell Securities Ltd, said by phone.

Earnings results "highlighted strong free cash-flow generation and active debt repayment," Eight Capital analyst Phil Skolnick said in a November 12 report.

Suncor Energy Inc approved a boost to its share buyback program this week, pleasing analysts as the company checks the box on providing shareholder returns. Crescent Point Energy Corp's latest gas infrastructure asset sale for C\$500mn (\$378mn) topped analyst expectations.

With oil and gas stocks making up more than 16% of the Canadian benchmark index, that's given the TSX a boost this month – up every single trading session in November, hitting all-time highs for most of this week. The key stock gauge crossed the 17,000 mark on Friday.

Still, energy stocks are the third-worst performing sector this year. To bulls, the share price discount may mean investors should buy the dip. For bears, perhaps it brings home the point that investors should still stay out of the sector. Saudi Aramco's IPO prospectus that flagged a peak in global oil demand in the next two decades might also give investors the jitters.

"They're just very good value. The world still runs on energy. They may try to change it to solar and electric and all this other kind of stuff, but it's going to take a long time," Kinsey said.

Canada's stock index climbed for an eleventh day on Friday, its longest streak since January 21. The benchmark index breached the 17,000 level for the first time ever and posted

11 records this year. Foreigners bought C\$1.08bn worth of stocks in September, according to Statistics Canada.

The Canadian two-year yield rose to 1.54% on Friday, staying below its US counterpart. [Click here](#) for our weekly bond wrap. Foreigners sold C\$2.81bn worth of government bonds in September. The loonie was little changed against the greenback this week, but was still one of the worst performers among its G-10 peers.

Prime Minister Justin Trudeau will reconvene parliament on Dec. 5 to elect a Speaker of the House of Commons followed by a so-called Throne Speech that sets out the government's agenda. The leader of Canada's left-leaning New Democratic Party said he's confident he can work together with Trudeau, suggesting the prime minister will be able to successfully govern in a minority parliament.

Economists will focus on October inflation data and September retail sales figures next week.