

Flexible renewable power: Spain to triple solar thermal capacity by 2030



Spain's NECP has been approved by the **Spanish Council of Ministers** and submitted to the **European Commission**. ESTELA, the representative association of the **European Solar Thermal Electricity sector** (also known as concentrated solar power), highlights that the plan includes a proposed **increase in installed capacity of solar thermal electricity from 2,300 MW to 7,303 MW by 2030**.

This development in Spain is a strong signal that the value of solar thermal electricity is now recognised when forecasting the future energy generation mix. The additional 5 GW of latest-spec solar thermal power plants, **with much larger storage volumes**, will capture, store and subsequently generate electricity, mostly in a complementary way to photovoltaic and/or wind generation, contributing to the stability of the grid.

With 2.3 GW installed capacity currently, Spain is the global leader in STE technology. However, with threefold growth over the next 10 years, the European STE/CSP industry could

substantially strengthen that leadership, reaching into world markets whilst maintaining its excellence in research and innovation activities.

More STE/CSP in Europe means the technology could (already today) provide a substantial contribution to the required flexibility for a further increase of solar PV and wind generation towards decarbonisation – without waiting for industrial maturity of other technologies that are currently unable to deliver bulk amounts of CO₂-free dispatchable energy.

As with other green technologies, STE/CSP offers deep and long-lasting benefits to the future economy and job markets as part of a Just Transition. The deployment of solar thermal power plants should have an immediate, positive macroeconomic effect on GDP and stimulate employment for all European countries involved along the STE/CSP value chain following investment in related equipment, components, and services.

Granting solar thermal power plants a more significant role over the next decade will ease the necessary phasing-out of coal and nuclear power plants. **The proven competitiveness of solar thermal power plants against fossil backup technologies** and the ability of this technology to provide the basic services of conventional power plants will lead to a zero-emission generation fleet – combined with the other already established intermittent renewables, especially in sunny European countries.

Rolling out STE across Southern Europe for the benefit of the whole EU electricity system

STE provides the possibility of moving towards an efficient share of flexible and non-flexible renewable generation across

Europe but requires a clear endorsement by the European Commission coupled with practical help.

The justifications are clear

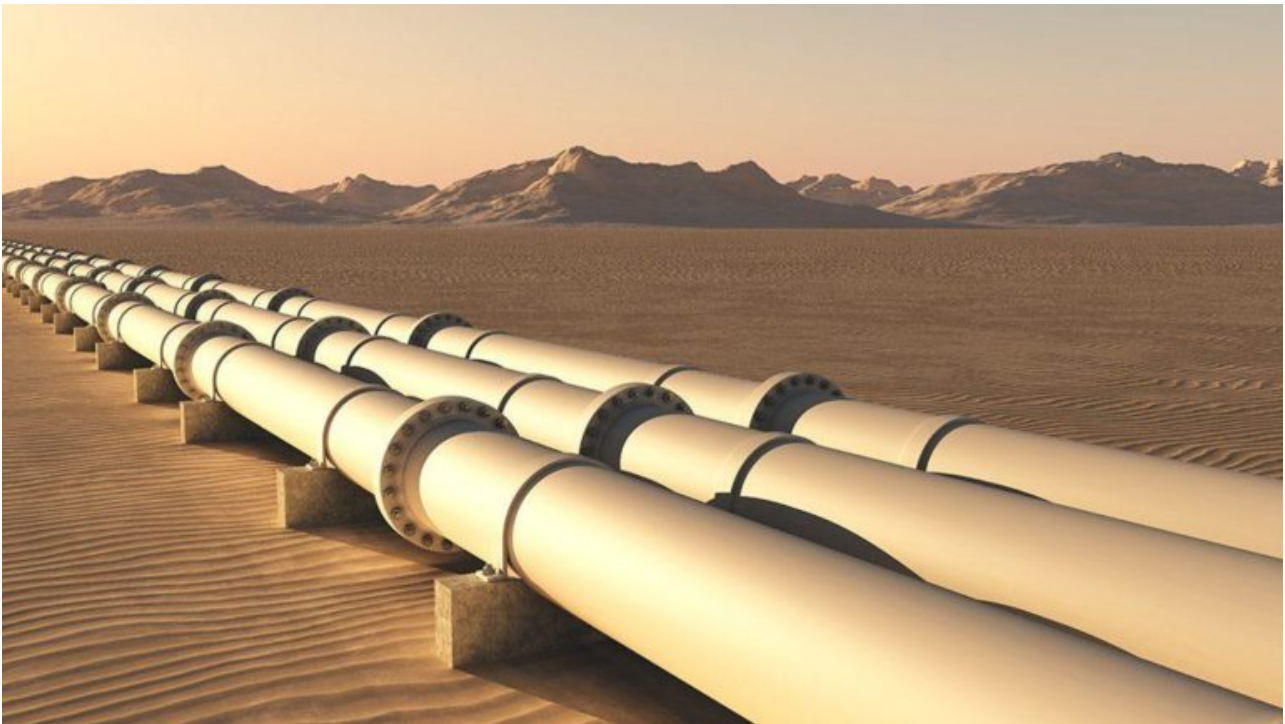
- Leaving the completion of the 2020 and 2030 objectives to a purely market-driven process will lead to a further increase of non-flexible RES in Europe (essentially wind and PV);
- At the horizon **2030 and beyond**, a more balanced share between flexible and non-flexible RES will be vital to ensure the reliability in a decarbonised European power system which is required to address the foreseen lack of flexible power generation overall;
- Expensive backup capacity from conventional power plants can be avoided if flexible RES (STE/CSP) is properly and adequately implemented from now on where **fossil back up capacities should be considered part of the costs of non-flexible RES**;
- Support for this program should be the product of a well-coordinated (at EC level) combination of sources: Directives, strategic energy security investments, cohesion funds, development and cooperation (including outside EU);

These issues were already identified in the 2014 IEA Technology Roadmap – Solar Thermal Electricity report that foresees **4% of the whole installed capacity by 2050 for Europe coming from STE/CSP**. That would mean that an additional 1 GW/year capacity in STE would need to be installed in total in Europe between 2015 and 2030.

ESTELA President Dr. Luis Crespo calls for EU institutions and, most importantly, other EU Member States getting behind their 2020 RES objectives, to take this example from Spain as an opportunity to consider again the role of STE/CSP in their strategies. This, he points out, would be in keeping with the RES Directive (recast to 2030) entering into force in 2021

which calls for proactive cooperation between Member States for the development of cross-border projects.

Egypt's gas production to increase to 7bn scf/day next June



(MENAFN – Daily News Egypt) The Ministry of Petroleum aims to increase Egypt's natural gas production to 7bn cubic feet daily (scf/day) by June, compared to the current production of 6.8bn scf/day through increasing gas production from the Zohr field.

A source at EGAS told Daily News Egypt that the increase from Zohr to 2.6bn scf/day compared to 2.3bn scf/day now will compensate for the natural decline rates and increase the total local production.

He pointed out that new projects were connected to production, such as Zohr, Nawras, North Alexandria and 9B, and have contributed to increasing Egypt's natural gas production.

The source added that it is targeted to increase Egypt's natural gas production to 7.5bn scf/day in 2019/20.

The local market's consumption of natural gas is currently dropping to 5.5bn scf/day as a result of the decrease of electricity plants consumption in winter.

Moreover, the source explained that the consumption rates of natural gas in the local market is growing according to the industrial development and urban plan and the increase in the number of cars that operate with natural gas.

The consumption of the electricity sector represents 61% of the total natural gas consumption, while the rest of the sector such as industry, household, and petroleum products consume 39%.

The source said that the local gas consumption rate would increase gradually to 7bn scf/day in the next fiscal year (FY) compared to 6.2bn scf/day this FY.

The average local market consumption of natural gas will increase to 9bn scf/day by FY 2020/21 according to the industrial development plan with the increase of the electric energy produced and delivered to homes, as well as to the largest number possible of cars operating with gas instead of petroleum products.

The Ministry of Petroleum's plan aims to complete the implementation of Zohr, North Africa and Borollos to contribute to increasing local production and covering consumption rates with the operation of liquefaction factories through the gas coming from Cyprus and Israel.

Equinor CEO: Energy sector 'facing a crisis of confidence'



The oil and gas sector is “facing a crisis of confidence” and a mounting lack of trust as climate change concerns rise worldwide, the chief executive of Norway’s top energy company said Monday.

Equinor CEO Eldar Sætre said at the CERAWEEK by IHS Markit conference in Houston that the environmental issues represent a real threat to the industry unless oil and gas companies proactively step forward to dramatically reduce emissions and pollution.

“We are collectively not doing enough,” Sætre said.

The industry must align to promote more transparency, public engagement and climate change action. Equinor, for instance, touts having roughly half the carbon dioxide emissions on average as the rest of the oil and gas sector.

Equinor, although still an oil and gas firm, also invests heavily in renewable energy, especially offshore wind farms. In the U.S., Equinor has the Empire Wind farm offshore of New York and is now developing a similar project offshore of Massachusetts.

Sætre also bemoaned a general lack of help coming from governments when it would help if nations would set specific targets on emission reductions and incentives to help get there.

“Politics becomes ever more shortsighted,” he said, “and is increasingly governed by populism.”

This article first appeared on the Houston Chronicle – an Energy Voice content partner. For more from the Houston Chronicle click here.

Shale on brink of M&A as oil majors flex muscles in Permian



HOUSTON (Bloomberg) – Cowboy boots and turquoise belt buckles are giving way to smart suits and silk ties as the world's biggest shale oil field prepares for mergers.

As oil executives from across the world gather in Houston for the annual CERAWEEK by IHS Markit conference, the Permian basin in the U.S. Southwest is on the cusp of a radical transformation with one simple premise: bigger is better. The energy industry appears primed for deals at a time when Big Oil is flexing its muscle in the region.

Just last week, Exxon Mobil Corp. and Chevron Corp. unveiled audacious growth plans for the Permian basin, hitherto the domain of smaller rivals. Royal Dutch Shell Plc is said to be on the prowl for deals while BP Plc bought in last year.

Meanwhile, independents are under increasing investor pressure to merge or sell out in an effort to end relentless production growth that has burned through some \$200 billion over the past eight years. "The ability of the larger companies to do an accretive acquisition is probably at its highest level since

the beginning of the shale revolution,” said Michael Roomberg, a fund manager at Miller/Howard Investments Inc. which manages \$5 billion. “M&A interest is at its highest in nearly a decade.”

But the century-old oilfield cycle of big players swallowing up smaller ones may not happen quickly or follow the conventional path.

The supermajors, facing investor pressures of their own, are unwilling to throw cash around like they did in the heady days of \$100-a-bbl oil. All-stock deals could be dilutive because many U.S. independents trade at higher price-to-earnings multiples than integrated oil companies, according to data compiled by Bloomberg.

Diamondback Energy Inc. and Concho Resources Inc. pulled off all-stock deals that together were worth almost \$20 billion last year, showing a willingness to merge their way to gain scale.

Pressure has mounted on Permian-only and smaller companies in recent weeks. Pioneer Natural Resources Co. and Halcon Resources Corp. replaced their CEOs while names such as Alta Mesa Resources Inc., Centennial Resource Development Inc., and Laredo Petroleum Inc. have seen their market values decimated.

There are 112 operators in the Permian basin and that means an excessive number of management teams operating similar assets, said Ben Dell, founder of activist investor Kimmeridge Energy Management Co. Economies of scale are needed and about 20 companies, or any valued under \$3 billion, should be combined in a “merger of equals,” he said.

Independents were once the innovators that worked out how to pump oil from previously impermeable shale formations. That turned the U.S. from a petroleum importer dependent on the Middle East into a global energy superpower. America’s record production has prompted OPEC to take measures intended to

forestall a glut. Saudi Arabia plans to extend deeper-than-agreed supply curbs into April, a Saudi official familiar with the policy said yesterday.

For North American oil companies, the shale revolution came at a cost. Excluding the integrated majors, explorers spent \$200 billion over the last eight years, according to data compiled by Bloomberg. Investors have signaled they've had enough. They want a manufacturing-style production mode, which favors the biggest, most efficient operators.

Exxon Chief Executive Officer Darren Woods was blunt in his assessment of how the supermajor will meet its Permian target of 1 MMbpd by 2024 – more than OPEC member Libya's entire output. "We're changing how the game gets played," he said.

Exxon and Chevron both emphasized their focus on existing Permian holdings, favoring small land swaps rather than big corporate deals.

But the European supermajors, playing catch-up, appear to be willing to play the acquisition game. BP Plc entered the fray last year with its \$10.5 billion purchase of BHP Billiton Ltd.'s onshore assets and Shell is said to be interested in buying Endeavor Energy Resources LP, one of the Permian Basin's largest private operators, for as much as \$8 billion.

The arrival of Big Oil may change the region's Wild West image. Until now, the barrier of entry has been low, with dozens of private equity-backed wildcatters, many of whom are in their early 30s, flipping leases and drilling exploratory wells with the aim of selling them to the highest bidder.

It's a far cry from Exxon's systematic approach, perhaps a sign that the days of the rags-to-riches wildcatters may be ending.

Norway divestment affects wide array of oil explorers



Selling Out

These are the 10 largest shareholdings affected by Norway's decision

Company	Value of Holding	Percentage Stake	Country
EOG Resources Inc	\$488m	1.0	United States
Reliance Industries Ltd	485	0.5	India
Occidental Petroleum Corp	456	1.0	United States
Valero Energy Corp	336	1.1	United States
CNOOC Ltd	330	0.5	China
Woodside Petroleum Ltd	288	1.4	Australia
Canadian Natural Resources Ltd	278	1.0	Canada
Anadarko Petroleum Corp	238	1.1	United States
PTT PCL	218	0.5	Thailand
Concho Resources Inc	182	0.8	United States

Source: Norges Bank

Bloomberg 

The decision by the world's biggest sovereign wealth fund to sell some of its energy holdings encompasses a vast array of companies, from US shale drillers and developers of Canadian oil sands, to off shore drillers from Africa to China. Norway's \$1tn investment fund said on Friday that it will gradually sell its holdings in oil and gas exploration and production companies in order to reduce the country's exposure to a permanent decline in crude prices. That's a smaller step than the full fossil-fuel divestment that some were proposing, but still affects some of the industry's most famous names. Houston-based shale driller EOG Resources Inc is the biggest shareholding to be sold, with a total value \$488mn, or just under 1% of the company, according to the fund's website. Indian petroleum and chemicals giant Reliance Industries Ltd

is the next largest, with a stake of 0.5% worth \$485mn. Other notable US names include Anadarko Petroleum Corp, Apache Corp and Occidental Petroleum Corp. On the other side of the Atlantic, explorers Tullow Oil Plc and Premier Oil Plc are affected. All of them appear on a list of 134 companies placed in the exploration and production category FTSE Russell. The stocks will be “phased out from the fund gradually over time,” according to Norway’s finance ministry, which may prevent the sale causing any big changes in these companies’ market values. But the move also raises questions about the industry’s appeal to investors in the very long term. “The Norwegian sovereign wealth fund is seen as something of a poster-child amongst sovereign wealth funds,” said Alejandro DeMichelis, director of oil and gas research at Hannam & Partners LLP. “This decision could also trigger other large investors to review their stance toward investing in the oil and gas sector.” Life is changing for oil companies. Ten years ago, they accounted for about 15% of the S&P 500 index. Today, they make up just 5%, having been mostly displaced by technology giants such as Facebook Inc and Apple Inc. Driving this shift is a smorgasbord of new energy sources that’s bringing unprecedented competition for capital. Consumer choices are set to drift farther from the hydrocarbons of the 20th century, with renewables potentially meeting about a quarter of demand by 2040, according to oil major BP Plc. It’s no surprise, then, that investors are increasingly questioning the wisdom of betting on oil. A divestment campaign started by activist group 350.org in 2012 has already persuaded funds holding \$8tn to back away from fossil fuels, according to its website. Scrutiny could intensify as AGM season approaches. Catherine Howarth, chief executive officer of ShareAction – a group that has targeted Royal Dutch Shell Plc in the past – said she expects a “ramp-up” of pressure at annual general meetings that start in the spring.

Venezuela told to pay Conoco \$8.75bn over oil seizures



ConocoPhillips was awarded \$8.75bn by the World Bank's arbitration tribunal in response to Venezuela's seizure of oil assets more than a decade ago. The Washington-based International Centre for Settlement of Investment Disputes published a report Friday upholding Conoco's claim that Venezuela unlawfully confiscated its Hamaca and Petrozuata heavy crude oil projects in the Orinoco River basin in 2007, and said the Houston-based company must be compensated accordingly. The award comes as the US tries to ratchet up pressure on the administration of President Nicolas Maduro after sanctioning state oil company Petroleos de Venezuela SA and recognising Juan Guaido as the nation's interim leader. Venezuela's economy has been in turmoil as oil exports con-

tinue to crash. Residents of Caracas and other cities on Friday endured a second day without power while Maduro blamed "US imperialism." "We welcome the ICSID tribunal's decision, which upholds the principle that governments cannot unlawfully expropriate private investments without paying compensation," Conoco General Counsel Kelly B Rose said in a statement. Venezuela's information ministry didn't immediately respond to requests for comment. Conoco was also awarded \$2bn last year by the International Chamber of Commerce over the seizure of assets. Following that decision, the company moved aggressively to take over PDVSA facilities in the Caribbean islands of Bonaire, Curacao, St Eustatius and Aruba. Vessels carrying Venezuelan crude were ordered to immediately pull away from Caribbean ports, creating a backlog of ships and hindering the nation's oil exports. In August, Conoco reached a settlement with PDVSA under which the company agreed to pay the \$2bn back in quarterly instalments over four-and-a-half years. Conoco said in January it had received about a quarter of what's owed. Some of the payment had been made in crude. Conoco also said at the time it expected to get another payment in February, despite US sanctions. "Given the size of the award and current adverse situation in Venezuela, receiving full payment in a timely manner remains to be determined," Scott Hanold, an analyst at RBC Capital Markets LLC, wrote in a note.

Oil's big reset: Energy majors learn to thrive after

price crash



Bloomberg/London

When Opec started an oil-price war in late 2014, most people believed US shale was doomed. In reality, the giant oil majors suffered most – burdened by expensive mega-projects, Chevron Corp, BP Plc and the rest struggled to adapt to the fall in energy prices.

Slowly, those companies figured out how to survive in the lower-for-longer price era. They cut costs and, more importantly, learned how to stop them from rising again. In an industry that favoured tailored solutions for every project, companies started to talk about standardisation. At closed-door sessions in Davos, Switzerland, Big Oil bosses didn't waste time on self-important talk, but instead discussed how to share the design of anything from underwater valves to pumps.

Nearly five years after the crash, the cultural change is starting to work. The world's major energy companies have managed to press the reset button, allowing them to make profits today similar to what they did in a world of \$100-plus a barrel oil prices.

“Big Oil has been able to re-emerge from this downturn stronger and lower on the cost curve,” said Michele Della Vigna, the top oil industry analyst at Goldman Sachs Group Inc, who had been a critic of the majors.

The level of spending at the world’s eight largest integrated oil and gas companies fell last year to \$118bn, down 45% from a pre-crisis peak of \$215bn in 2013, according to data compiled by Bloomberg News.

But their business model has changed a lot in the process. The reliance on multibillion dollar projects in far-flung corners of the world has been reduced and the majors are pouring billion into Texas’s Permian Basin, once dominated by independent exploration and production companies. Other strategies include trying to build new projects closer to existing ones and reusing old infrastructure to reduce costs. They’ve also re-discovered the joys of integration, investing in refineries and petrochemical plants that make money even when prices are low.

To the surprise of many in the industry, lower costs haven’t translated into slower development. In fact, projects have often come ahead of expectations.

The industry got a lot of help from its suppliers. According to Exxon Mobil Corp, the cost of 3D seismic technology, used to find underground reservoirs, and the deep-water rigs needed to exploit them has fallen more than 50% from the 2013 level.

The new era means combining projects that pay back quickly, whether in US shale or elsewhere, with some traditional larger projects. In the oil industry, it’s a model called short-and-long oil cycle, because some projects pay back in as little to two-to-three years, compared to as long as 10 years for conventional projects.

“Big Oil now wants a diversified portfolio with short-and-long cycle oil,” said Daniel Yergin, the oil historian that this week hosts the annual CERAWEEK energy conference in Houston. “Before the oil crisis in 2014-15, the mere concept of short-cycle oil didn’t exist in Big Oil.”

Short-cycle oil has a one big advantage over mega-projects:

companies can dial them up and down quickly to respond to changes in oil and gas prices.

The other significant change is natural gas. Big Oil had already embraced gas before the crisis, with companies like Exxon investing in massive projects in Qatar. But today some executives suggest gas is gaining the upper hand. "Gas is the fastest growing hydrocarbon," said Bernard Looney, chief executive for upstream at BP. "It's the future."

Despite the significant reduction in spending and much lower energy prices, returns haven't suffered, according to data compiled by Bloomberg. The biggest oil companies posted return-on-capital-employed – a traditional yardstick used by investors – of about 8.7% last year, higher than the 8.4% of 2014.

LNG Canada CEO sees no scenario that would stop its project



Bloomberg/Vancouver

The head of LNG Canada said he does “not see a single scenario” that would stop the nation’s largest infrastructure project from getting built, dispelling concerns that the \$30bn gas export facility is at risk of mounting opposition from pipeline foes.

The liquefied natural gas project in northern British Columbia was approved by Royal Dutch Shell Plc and four Asian partners in October after obtaining the support of the province and 20 First Nation groups. But it continues to face a legal challenge disputing the constitutionality of the project’s approval, as well as protests by a group of indigenous holdouts.

“I do not see a single scenario that would cause the construction of this pipeline to be stopped,” Andy Calitz, LNG Canada’s chief executive officer, said in an interview in Vancouver.

TransCanada Corp is planning to build the pipeline that will carry the gas from western Canada’s prolific Montney shale formation to the coastal export facility in Kitimat. The whole project – including the gas fields, pipeline and liquefaction terminal – fall within British Columbia and was authorised by

the provincial regulator.

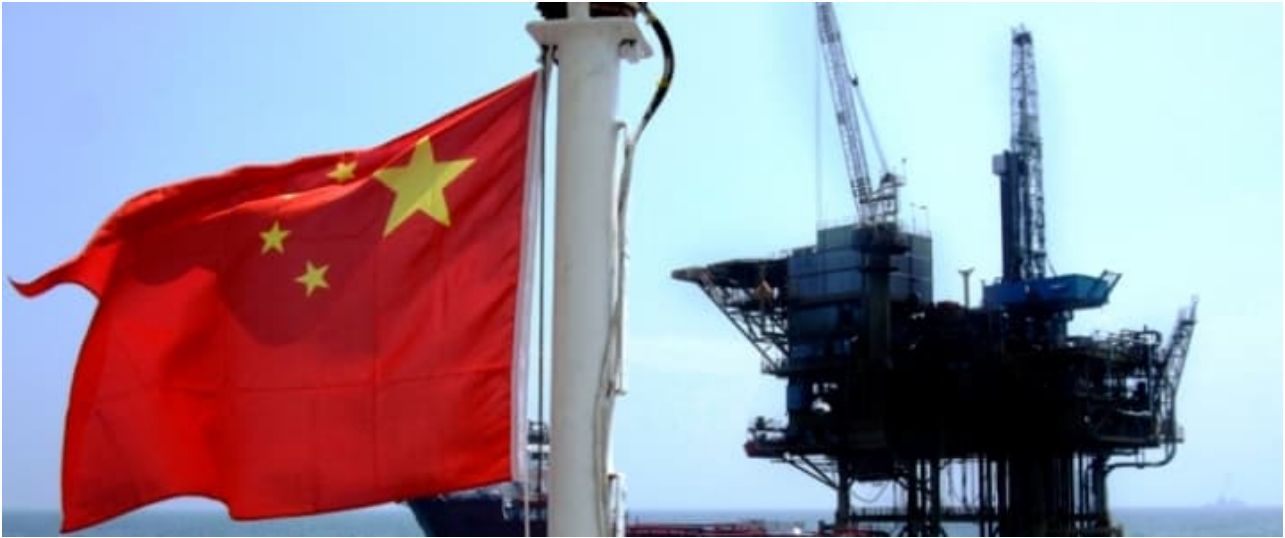
But a private citizen in Smithers, Michael Sawyer, mounted a legal challenge saying the pipeline is a federal undertaking and should have sought approval from the National Energy Board. The federal regulator agreed in December to consider the jurisdictional challenge and has requested evidence from the parties involved with final oral arguments set for March.

“It’s a complex world – the paths are not clear,” Calitz said. Any decision by the federal regulator could later be appealed in the courts. “But what I am clear about is that this pipeline, by the time that happens, will be in advanced construction.”

Separately, TransCanada is seeking to sell a stake in the pipeline project. That move was long contemplated and doesn’t indicate that there are growing concerns about the project’s risks, Calitz said.

“It has always been a part of the financing strategy for the project,” Calitz said. “It has no impact on either the construction or the capacity or any other aspect of the project.”

China oil use seen peaking in 2025 as EVs and rail take over



SINGAPORE (Bloomberg) – The country that’s driven global oil demand since the turn of the century may hit the brakes sooner than expected as travelers shift toward electric cars or even forgo the open road in favor of trains.

China’s oil consumption will peak in 2025, five to eight years earlier than market consensus, according to Morgan Stanley analysts including Andy Meng. The reversal will be driven by a transportation model unique to China: While most countries moving up the economic ladder show continued growth in oil demand from increased driving, mass-adoption of electric vehicles and high-speed rail in China will drastically reduce gasoline use, the bank said.

If the theory plays out, it could signal a huge shift for the oil market, which has relied on China for more than a third of global demand growth since 1999. An expanding body of research is painting a bleak future for oil, as rapid adoption of electric vehicles could mean global demand peaks by the 2030s, according to Bank of America and Royal Dutch Shell, a prospect that’s likely to worry energy executives and investors.

“China will no longer be the growth driver of global crude demand,” Meng said in a March 5 report. “We believe the refiners and petroleum stations are the largest potential losers, while the battery companies are likely to become the key winners.”

To be sure, some of the industry's top prognosticators expect the country's oil demand to keep growing for years, albeit at a slower pace. The International Energy Agency sees China crude consumption expanding through 2040, while the nation's largest energy producer China National Petroleum has forecast that gasoline use will peak five years before oil demand does in 2030.

Disruptive Force

China's electric vehicle penetration will reach 6.4% by the end of the decade and keep rising to 80% by 2040, according to Morgan Stanley, adding that an aggressive push by local battery companies into technology innovation may speed up that timeline.

Meanwhile the country is seeing solid growth in high-speed rail ridership, driven by a well-developed network and severe traffic congestion. Highways' share of passenger turnover fell to 27% last year from 55% in 2012. In the U.S., the figure was 87% last year, according to Morgan Stanley.

Electric vehicles and high-speed rail are "a disruptive force on China oil demand," the analysts said. "This pattern has been ignored by most investors in developed markets as there is no such experience from any precedent."

'China plans to sustain solar growth with its new policy'



Bloomberg/Beijing

China's plans to loosen its solar subsidy policy will keep growth of the world's largest market intact, according to the head of JinkoSolar Holding Co, which is increasing production capacity by as much as 20% this year.

Installations will probably maintain at about 40 gigawatts, close to the levels last year, Chen Kangping, chief executive officer of the world's largest panel maker, said in an interview in Beijing. China's main industry group said last month the country is planning more supportive policies, which include resuming quotas for some utility-scale projects.

The views from Chen suggest a brighter outlook for global solar companies reeling from Beijing's abrupt decision in the middle of 2018 to halt approvals for some projects and reduce subsidies as part of efforts to curb overcapacity.

The move caused China's solar additions to tumble last year from a record 53 gigawatts in 2017 and spurred predictions in January installations may fall a second year.

"The changes would reflect a maturing of China's solar policy as regulators take more factors into consideration," Chen said Wednesday on the sidelines of the nation's annual parliamentary meeting. "It will help to stabilise the industry

and market development.”

With the new plan, China Photovoltaic Industry Association said installations could climb in 2019 from 44 gigawatts last year. Citigroup Inc forecast capacity additions of 42 gigawatts, with a potential for a rise to 50 gigawatts.

JinkoSolar will raise panel capacity by 10% to 20% this year from 10.8 gigawatts last year.

Expansion will be in products with more advanced technology and command higher prices, according to Chen.

The supplier will be “cautious” with the rampups, weighing that against sales growth, with output already fully booked for the first half of the year, he said.