SAF GROUP

Energy Tidbits

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Supplemental Documents

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Committed to reducing global CO_2 emissions

On March 18, 2021, NextDecade announced the formation of NEXT Carbon Solutions

NEXT Carbon Solutions is:

- **Developing one of the largest carbon capture and storage (CCS) projects in North America to reduce CO_2 emissions at Rio Grande LNG**
- **Advancing proprietary processes to lower the cost of utilizing CCS technology**
- **Helping other energy companies reduce their CO_2 emissions associated with the production, transportation, and use of natural gas**
- **Generating high-quality, verifiable carbon offsets to support companies in their efforts to achieve net-zero emissions**

Key advantages for CCS project at Rio Grande LNG

Proprietary processes	**Lowering the cost of utilizing CCS technology**
Greenfield	**Simultaneous development of the CCS project and Rio Grande LNG**
Scale	**Lower unit costs due to the size of the CCS project at Rio Grande LNG (more than 5 million metric tonnes of CO2 per year)**

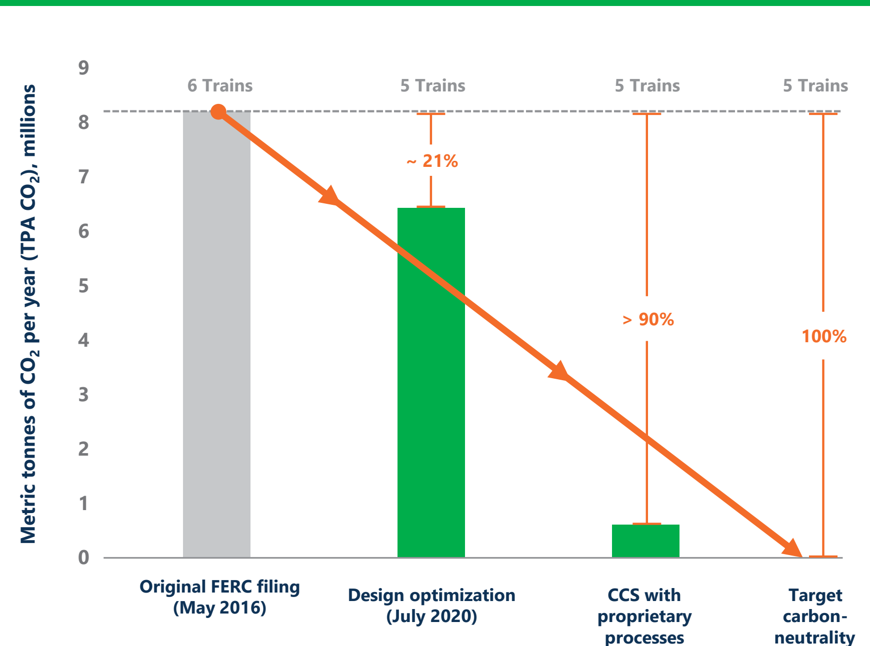
Proprietary processes

CCS feasibility confirmed with significant emissions reduction

The CCS project at Rio Grande LNG is expected to capture and store more than 5 million metric tonnes of CO_2 per year

- While other LNG-related CCS projects have focused only on CO_2 emissions from gas pre-treatment processes, NEXT Carbon Solutions considered all expected CO_2 emissions from Rio Grande LNG
- The gas turbines at Rio Grande LNG are responsible for the majority of the LNG project's total expected CO_2 emissions
- NEXT Carbon Solutions evaluated multiple options to reduce total CO_2 emissions at Rio Grande LNG, including incorporating CCS technology, using hydrogen as a fuel, and installing electric drives
- NEXT Carbon Solutions determined that CCS technology, used in conjunction with our proprietary processes, is the superior solution
  - Greater than 90 percent reduction of permitted CO_2 emissions
  - Does not require major design changes to Rio Grande LNG
- NEXT Carbon Solutions determined that hydrogen and electric drives are not currently viable
  - Hydrogen via steam methane reforming would require more natural gas and produce more CO_2 that would need to be captured and stored
  - Hydrogen via electrolysis would require the State of Texas to increase installed wind and solar capacity by nearly 50 percent[1] and require nearly 1.5 billion gallons of fresh water annually
  - Electric drives would require the State of Texas to increase installed wind and solar capacity by approximately 12 percent[1]

Rio Grande LNG (27 mtpa) CO_2 emissions reduction[2]



[1] Based on average wind and solar capacity factor of 30 percent, installed wind and solar capacity in Texas in 2019. | [2] The original FERC filing for Rio Grande LNG (May 2016) was for a 6-train project capable of producing 27 mtpa of LNG for export. In July 2020, NextDecade announced a series of optimizations that will result in an LNG project capable of producing 27 mtpa with five LNG trains. Emissions profiles are presented on the basis of a 5-train project and are presented for comparison with the originally filed 6-train project. Subject to applicable federal and state regulations.

Substantial capex savings from greenfield co-development

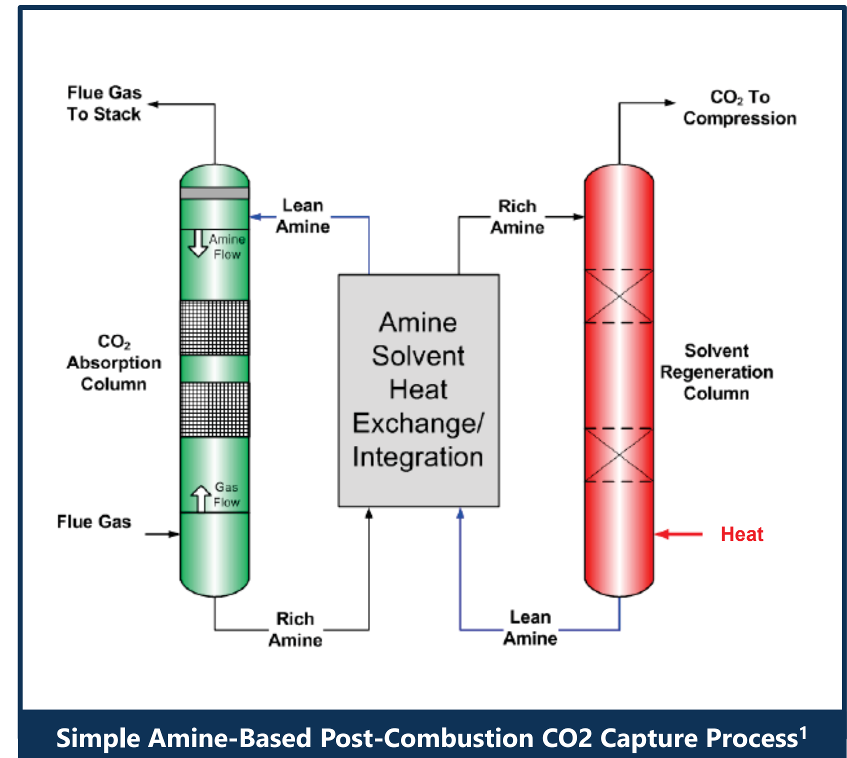
NextDecade believes that installing CCS as part of a greenfield project is 60-80 percent less capital intensive than retrofitting an operating facility

Greenfield

- Less ducting, piping, electrical, and steel supports
- EPC contractor already mobilized to site
- Enhanced design synergy with simultaneous development

Retrofitting

- Hot work and permitting considerations cause extended shutdown periods with same amount of resources
- Utilities including water and electricity must be retroactively expanded

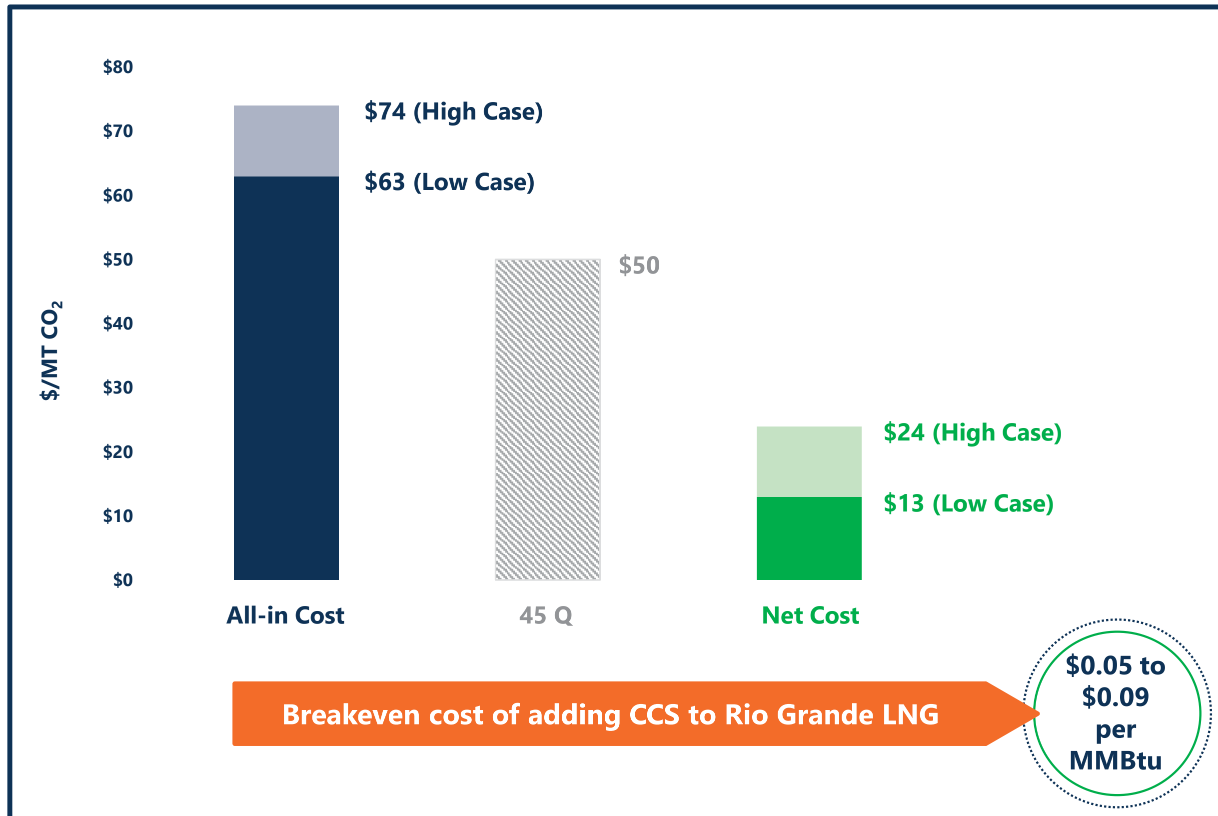


Simple Amine-Based Post-Combustion CO2 Capture Process[1]

[1] Source: U.S. Department of Energy (DOE), National Energy Technology Laboratory (NETL)

Scale

All-in cost estimate of CCS project at Rio Grande LNG[1]



- All-in costs of the CCS project are expected to be:
  - $63 to $74 per MT CO_2 prior to Section 45Q tax credits
  - $13 to $24 per MT CO_2 net of Section 45Q tax credits
- Cost expected to decrease through full development of Rio Grande LNG
- Breakeven cost of adding CCS to Rio Grande LNG is expected to be $0.05 to $0.09 per MMBtu on an LNG basis

[1] All-in cost includes capital expense, contingency, fees and interest during construction, interest during operations, operations and maintenance expense, transportation, and permanent geologic storage. Assumptions: 12-year term for Section 45Q tax credit, 12-year debt amortization, 100% realization of Section 45Q tax credit (realization could be lower if NextDecade is not able to utilize full tax credit).

CO_2 transportation and permanent geologic storage

- NextDecade and Oxy Low Carbon Ventures (OLCV) executed a term sheet for the offtake and permanent geologic storage of CO_2 captured from NextDecade's Rio Grande LNG project
- OLCV is a subsidiary of Occidental (NYSE: OXY) and global leader in CO_2 management
- Pursuant to the term sheet, OLCV will offtake and transport CO_2 from Rio Grande LNG project and permanently sequester it in an underground geologic formation in the Rio Grande Valley, where there is vast CO_2 storage capacity
- The parties are negotiating definitive CO_2 Offtake and Sequestration and Monitoring Agreements

https://www.mzlng.total.com/en/press-releases/mozambique-lng-project-resumes-construction-activities

***24/03/2021* PRESS RELEASE**

MOZAMBIQUE LNG PROJECT RESUMES CONSTRUCTION ACTIVITIES

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The Government of Mozambique has declared the area within a 25 km perimeter surrounding the Mozambique LNG Project as a special security area. A comprehensive roadmap, including the reinforcement of the security infrastructure and the strengthening of the public security forces has been defined and implemented, allowing a gradual remobilization of the project workforce and the resumption of LNG plant construction activities as well as community development programs carried out by the project.

The control of the special security area around the Afungi site remains ensured exclusively by public security forces assigned by the Mozambican Ministries of Defense and Interior, under a Memorandum of Understanding signed in July 2020 between the Government of Mozambique and TEPMA1. The Government of Mozambique is committed that the personnel assigned to the protection of Mozambique LNG shall act according to the Voluntary Principles on Security and Human Rights (VPSHR) and international human rights standards. The Mozambique LNG Project, which is in charge of the security of the construction site itself, does not use the services of any armed private security providers.

Moreover, Total announces that Mozambique LNG has satisfied all the conditions precedent and complied with all relevant statutory requirements for the first debt drawdown of the project financing signed on 15th July 2020 with eight export credit agencies, 19 commercial banks and the African Development Bank. This first drawdown will take place at the beginning of April 2021.

Total also confirms its objective to deliver Mozambique LNG’s first cargoes in 2024.

Lire le communiqué de presse en français

Total E&P Mozambique Area 1 Limitada, a wholly owned subsidiary of Total SE, operates Mozambique LNG with a 26.5% participating interest alongside ENH Rovuma Área Um, S.A. (15%), Mitsui E&P Mozambique Area1 Limited (20%), ONGC Videsh Rovuma Limited (10%), Beas Rovuma Energy Mozambique Limited (10%), BPRL Ventures Mozambique B.V. (10%), and PTTEP Mozambique Area 1 Limited (8.5%).

Bloomberg @TheTerminal Northern Mozambique Town Attacked By Rebels for Third Day
2021-03-27 04:38:14.71 GMT

By ANDREW MELDRUM and TOM BOWKER
Johannesburg (AP) -- The town of Palma in northern Mozambique remained under attack from insurgents for a third day Friday, with residents trying to flee to safety and most communications cut off.
International companies were only able to contact their staff in Palma by satellite phone, according to various company representatives. People are hiding in Palma's Hotel Amarula and at an area outside the town where there is a large liquified natural gas project by the France-based firm, Total, according to multiple sources.
Hundreds have sought refuge in Quitunda, a village near the Total project, and have called for the provincial government to evacuate them, according to a message sent by a man who identified himself as Reginaldo Americo Chirindzane. He said he had gone to the area on the Afungi peninsula, in order to access the WiFi signal at the Total project.
Palma, in Cabo Delgado province, was attacked "in three directions" by "terrorists," according to an official with Mozambique's defense ministry.
The coordinated attacks began Wednesday just hours after Total announced that it would resume work on its multi-billion-dollar liquified natural gas project just a few kilometers outside Palma, which is near Mozambique's border with Tanzania.
Mozambique's defense and security forces are "working tirelessly to re-establish security and order as fast as possible" and will "do everything to guarantee the security" of the local population and of the nearby "economic projects," Ministry of Defense spokesman Col. Omar Saranga said at a news press conference Thursday in the capital, Maputo. The government has not issued new information since then.
Palma had been largely cut off from the rest of Cabo Delgado province for several weeks, as the rebels made road access unsafe, leaving the airport and the seaport as the only routes in and out of the town.
The rebels already hold the port town of Mocimboa da Praia, which they captured in August. Since then, the insurgents have seized nearby villages. The rebels have beheaded scores of people, causing more than 670,000 residents to flee their homes, creating a humanitarian crisis in northern Mozambique.

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Bowker reported from Uzes, France.
-0- Mar/27/2021 04:38 GMT

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/QQM27P3V2807

https://www.reuters.com/article/us-mozambique-insurgency-total/total-says-mozambique-gas-project-work-suspended-after-fighting-idUSKBN2BJ0OA

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Total says Mozambique gas project work suspended after fighting

By Reuters Staff
1 MIN READ
The logo of French oil and gas company Total is seen in Rueil-Malmaison, near Paris, France, March 2, 2021. REUTERS/Benoit Tessier

PARIS (Reuters) - Total said on Saturday that it had postponed the restart of work at a liquified natural gas (LNG) project in Mozambique following an attack on a nearby town this week.

The French energy group said none of the project staff were among the victims of the fighting, linked to an Islamist insurgency in northern Mozambique.

Reporting by Sarah White, writing by Gus Trompiz; Editing by Kevin Liffey
Our Standards: The Thomson Reuters Trust Principles.

Back

Qatar Petroleum signs a long-term SPA to supply 2 MTPA of LNG to China's Sinopec

Qatar Petroleum today entered into a 10-year LNG Sale and Purchase Agreement (SPA) with China Petroleum & Chemical Corporation (Sinopec) for the supply of 2 million tons per annum (MTPA) of LNG to the People's Republic of China.

The SPA was signed by His Excellency Mr. Saad Sherida Al-Kaabi, the Minister of State for Energy Affairs, the President and CEO of Qatar Petroleum, and Mr. Zhang Yuzhuo, the Chairman of Sinopec Group, during a virtual ceremony attended by senior officials from both sides.

Under the agreement, LNG deliveries will commence in January 2022, and will be delivered to Sinopec's LNG terminals in China. This SPA further demonstrates the State of Qatar's continued commitment to meeting the growing energy demand of its customers globally in the form of reliable long term LNG supplies.

Commenting on this occasion, His Excellency Mr. Saad Sherida Al-Kaabi, the Minister of State for Energy Affairs, the President and CEO of Qatar Petroleum, said, "In a step that will further solidify the excellent bilateral relations between the People's Republic of China and the State of Qatar, we are delighted to enter into this historic long term LNG SPA. We are also proud of the fact that this agreement will be Sinopec's first long term LNG SPA from Qatar, and we are hopeful that it will mark the start of a long and fruitful partnership with Sinopec. Our LNG relationship with China dates back to 2009, when we started supplying LNG through a host of LNG SPAs with a number of our valued Chinese partners. This SPA will further supplement Qatar's contribution in meeting China's growing energy needs and we look forward to commencing deliveries under the agreement."

H.E. Minister Al-Kaabi concluded his remarks by saying, "This SPA also illustrates our position in the market as a reliable and trust-worthy LNG supplier, and we are grateful to all our customers around the world who select us as their LNG supplier of choice."

Mr. Zhang Yuzhuo, Chairman of Sinopec Group, said, "Sinopec has been a strong advocate for cleaner and greener development. The signing of the long term LNG SPA with Qatar Petroleum is a further step by Sinopec to deliver its commitment to sustainability while meeting the growing needs of the Chinese market. We believe achieving carbon emission peak and carbon neutrality are responsibilities of the energy industry and call for transformation. We are proud to team up with Qatar Petroleum, one of the premier suppliers in the industry, to supply cleaner energy to China. We are also excited to begin a new journey of more comprehensive cooperation with Qatar Petroleum in the years to come."

Khalid bin Khalifa Al Thani, CEO of Qatargas, commented on the new SPA: "This landmark agreement comes as a boost to the existing relationship with our Chinese customers. As the World's Premier LNG Company, Qatargas is committed to meeting the clean energy needs of customers around the globe who depend on reliable LNG deliveries."

Since the first LNG delivery in September 2009 to date, Qatar has supplied China with more than 62 million tons of LNG. China is a key and strategic energy partner for the State of Qatar throughout the entire energy value chain. It is also a main driver of the growth in the global LNG market as the government adopts increasingly progressive environmental policies.

https://tass.ru/ekonomika/11001383

MAR 26, 01:58Updated by Mar 26, 03:13

Gazprom said that Nord Stream 2 will be completed this year

According to the chairman of the board of directors of the company Viktor Zubkov, the work is done by 90-92%

© Nord Stream 2 / Axel Schmidt

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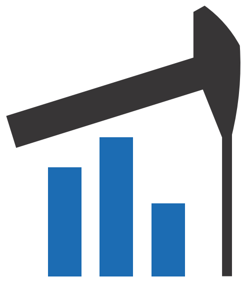
BERLIN, March 26. / TASS /. The construction of the Nord Stream 2 gas pipeline will be completed this year, Viktor Zubkov, chairman of the board of directors of Gazprom, chairman of the Russian coordinating committee of the Petersburg Dialogue forum, told reporters on Friday.

“The work is actively going on, there is very little left,” he said. “Of course, this year it will be finished, definitely. It's a pity for the lost time, but it happened.” According to him, the work has been completed at "90-92%".

Commenting on the reports of the German press that Berlin in negotiations with Washington allegedly raised the issue of strengthening the energy sector of Ukraine, Zubkov objected: "Legally, all contracts have been concluded with Ukraine and with other companies."

"The main thing is to finish Nord Stream 2 and continue [supply] the volumes envisaged in the contracts, supply through Ukraine, and no one is addressing these issues," he added. Answering the question whether it is planned to revise contracts with Ukraine, he said: "No, I think not."

The Nord Stream 2 project involves the construction of two lines of a gas pipeline with a total capacity of 55 billion cubic meters. m per year from the coast of Russia through the Baltic Sea to Germany. Work was suspended in December 2019 after Swiss Allseas abandoned pipe-laying due to possible US sanctions. But in December 2020, construction resumed. The gas pipeline is currently being laid in the territorial waters of Denmark.



Dallas Fed Energy Survey

First Quarter | March 24, 2021

Oil and Gas Activity Expands Strongly; Outlook Improves Dramatically

What's New This Quarter

Special questions this quarter include an annual update on breakeven prices by basin, expected changes in employee head counts for 2021, expectations for changes in service pricing this year and the impact of changing federal regulation on profitability.

Activity in the oil and gas sector expanded strongly in first quarter 2021, according to oil and gas executives responding to the Dallas Fed Energy Survey. The business activity index—the survey's broadest measure of conditions facing Eleventh District energy firms—soared from 18.5 in the fourth quarter to 53.6 in first quarter 2021, reaching its highest reading in the survey's five-year history. Exploration and production (E&P) and oilfield services firms both experienced a strong expansion in activity.

Oil and gas production increased, according to E&P executives. The oil production index rose from 1.0 in the fourth quarter to 16.3 in the first quarter. Likewise, the natural gas production index turned positive and increased 18 points to 15.9.

The index for capital expenditures increased from 12.5 to 31.0, indicating an acceleration in capital spending among E&P firms. Additionally, the index for the expected level of capital expenditures next year came in at 49.5, signaling firms have increased their capital spending plans for 2022.

Oilfield services firms reported improvement in all indicators. The equipment utilization index surged, jumping 57 points to 63.2 in the first quarter. Operating margins improved, with the index moving into positive territory—increasing from -31.9 to 14.0. The index of prices received for services also turned positive, jumping from -29.7 to 20.0. However, the index for input costs also rose notably—from -4.3 to 36.0—suggesting mounting cost pressures.

After seven consecutive negative readings that indicated contracting payrolls, the aggregate employment index turned positive, rising from -11.7 to 8.4. Employment growth was driven primarily by oilfield services firms. The employment index was 23.5 for services firms versus 1.0 for E&P firms. The employee hours index moved into positive territory, rising from -6.9 to 22.8. The aggregate wages and benefits index also turned positive—from -12.4 to 14.8.

Six-month outlooks improved notably, with the index rising from 21.6 last quarter to 70.6—the highest reading in the survey's five-year history. Additionally, firms noted less uncertainty around their outlook this quarter than last; the aggregate uncertainty index fell eight points to -22.2. This is the lowest reading for the uncertainty index since its inception in first quarter 2017.

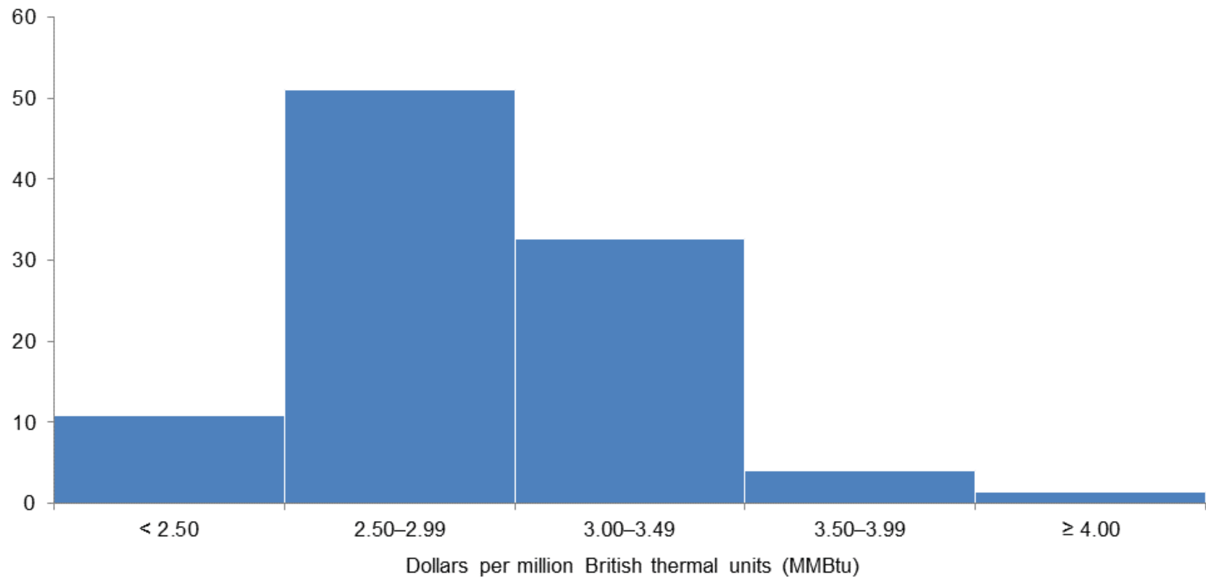
On average, respondents expect a West Texas Intermediate (WTI) oil price of $61 per barrel by year-end 2021; responses ranged from $45 to $85 per barrel. Survey participants expect Henry Hub natural gas prices of $2.80 per million British thermal units (MMBtu) at year-end. For reference, WTI spot prices averaged $64 per barrel during the survey collection period, and Henry Hub spot prices averaged $2.59 per MMBtu.

Next release: June 23, 2021

Data were collected March 10–18, and 155 energy firms responded. Of the respondents, 104 were exploration and production firms and 51 were oilfield services firms.

The Dallas Fed conducts the Dallas Fed Energy Survey quarterly to obtain a timely assessment of energy activity among oil and gas firms located or headquartered in the Eleventh District. Firms are asked whether business activity, employment, capital expenditures and other indicators increased, decreased or remained unchanged compared with the prior quarter and with the same quarter a year ago. Survey responses are used to calculate an index for each indicator. Each index is calculated by subtracting the percentage of respondents reporting a decrease from the percentage reporting an increase. When the share of firms reporting an increase exceeds the share reporting a decrease, the index will be greater than zero, suggesting the indicator has increased over the previous quarter. If the share of firms reporting a decrease exceeds the share reporting an increase, the index will be below zero, suggesting the indicator has decreased over the previous quarter.

Henry Hub Natural Gas



NOTES: Executives from 147 oil and gas firms answered this question during the survey collection period, March 10–18, 2021. For reference, Henry Hub spot prices averaged $2.59 per MMBtu during the period.
SOURCES: Federal Reserve Bank of Dallas; *Wall Street Journal* (reference price).

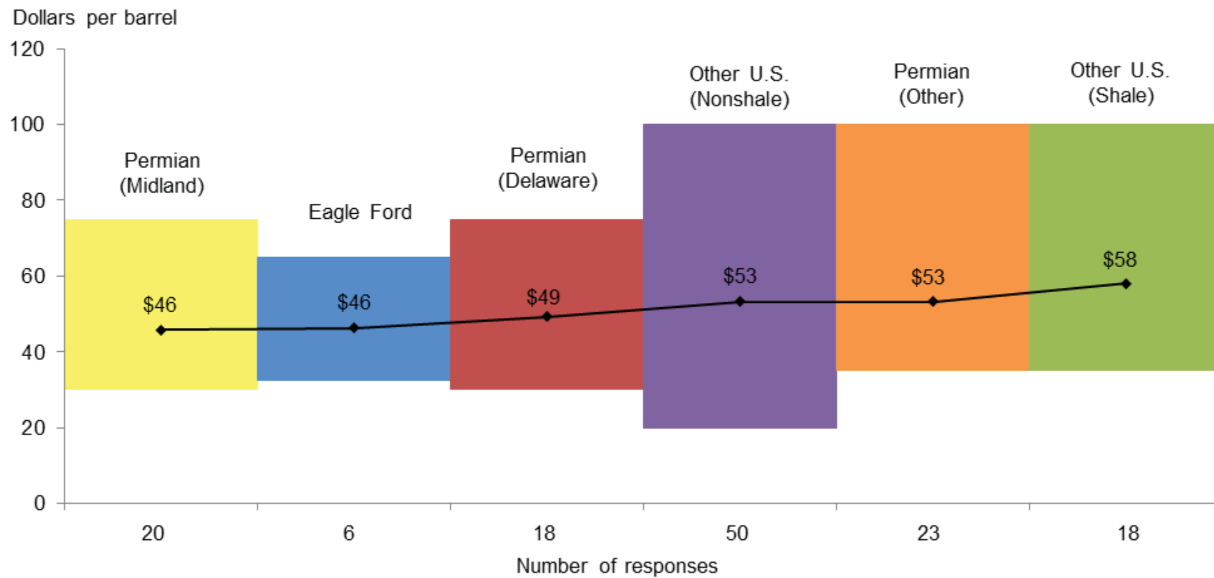
Henry Hub natural gas price (dollars per MMBtu), year-end 2021

Indicator	Survey Average	Low Forecast	High Forecast	Price During Survey
Current quarter	$2.80	$2.00	$4.00	$2.59
Prior quarter	$2.76	$1.75	$4.70	$2.60

NOTE: Price during survey is an average of daily spot prices during the survey collection period.
SOURCES: Federal Reserve Bank of Dallas; *Wall Street Journal*.

In the top two areas in which your firm is active: What WTI oil price does your firm need to profitably drill a new well?

For the entire sample, firms need $52 per barrel on average to profitably drill—higher than the $49-per-barrel price when this question was asked last year. Across regions, average breakeven prices to profitably drill a new well range from $46 to $58 per barrel. Breakeven prices in the Permian Basin average $50 per barrel—$1 higher than last year. For the past five years, Permian (Midland) has been the lowest-cost region. With the recent recovery in oil prices, the majority of firms in the survey can profitably drill a new well at current prices; 80 percent of responses were at or below the March 19 WTI spot price ($61 per barrel).



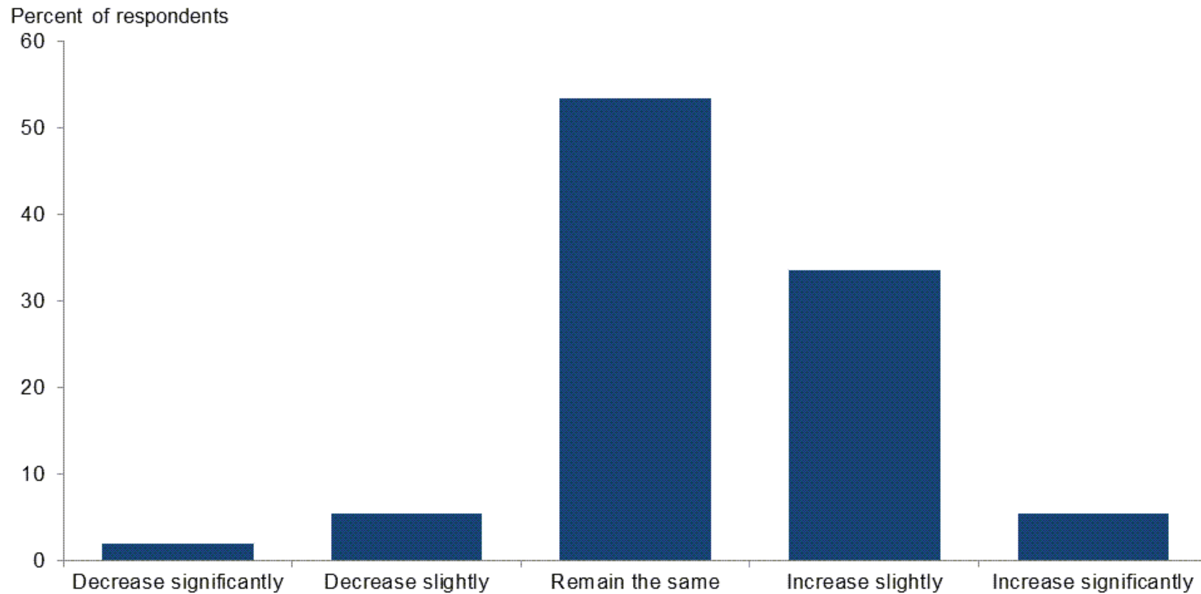
NOTES: Lines show the mean, and bars show the range of responses. Executives from 92 exploration and production firms answered this question during the survey collection period, March 10–18, 2021.
SOURCE: Federal Reserve Bank of Dallas.

All Firms

How do you expect the number of employees at your company to change from December 2020 to December 2021?

Slightly over half—53 percent—of executives expect their head count to remain unchanged from December 2020 to December 2021. Thirty-nine percent of executives expect the number of employees to increase, of which 5 percent expect a significant increase and 34 percent expect a slight increase. Only 7 percent expect the number of employees to decrease over the period.

Fifty-three percent of support services firms expect to increase the number of employees in 2021 versus 32 percent for E&P firms. (See table for more detail.)



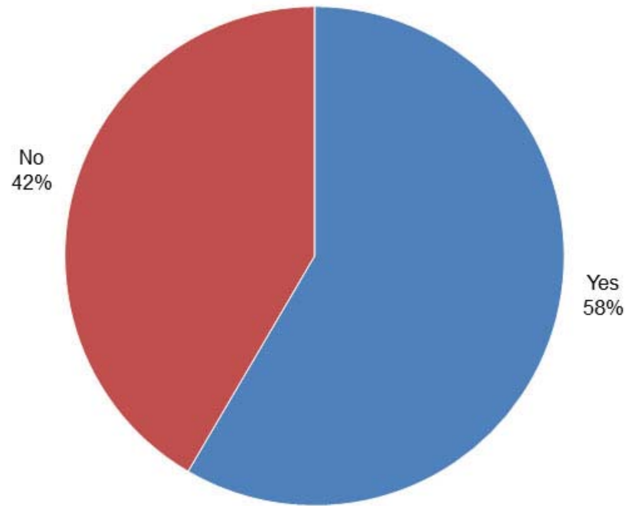
NOTE: Executives from 146 oil and gas firms answered this question during the survey collection period, March 10–18, 2021.
SOURCE: Federal Reserve Bank of Dallas.

Response	Percent of respondents		
	All firms	E&P	Services
Decrease significantly	2	3	0
Decrease slightly	5	6	4
Remain the same	53	59	43
Increase slightly	34	28	45
Increase significantly	5	4	8

NOTES: Executives from 97 exploration and production firms and 49 oil and gas support services firms answered this question during the survey collection period, March 10-18, 2021. The "All Firms" column reports the percentage out of the total 146 responses. Percentages may not sum to 100 due to rounding.
SOURCE: Federal Reserve Bank of Dallas.

Are you concerned that increased federal regulation will make your business unprofitable?

Fifty-eight percent of executives said they are concerned that increased federal regulation will make their business unprofitable. The remaining 42 percent aren't concerned.



NOTES: Executives from 142 oil and gas firms answered this question during the survey collection period, March 10–18, 2021.
SOURCE: Federal Reserve Bank of Dallas.

Special Questions Comments

Exploration and Production (E&P) Firms

- The current federal regulations are very concerning. We have a strong New Mexico presence, and that is being jeopardized significantly by the new administration.
- The decidedly oil and gas unfriendly Biden administration has us in the crosshairs. I believe that it is their goal to effectively shut down our industry, and they will pursue that end with great energy. I am happy that my career is nearly over and am worried about the future of our industry.
- The oil and gas industry does not need government intervention and additional political risk right now. If there is a need to make changes, it should be done with transparency and incrementally over time with industry input. Rash and disruptive decisions do not help an industry that is already very volatile.
- Various political stances are attempting to villainize the entire industry, which is counterproductive to the stated desires of "getting green." Natural gas is a critical transition energy source and needs to be spurred by incentives to capture and sequester rather than having obstacles, bureaucratic "red flags" and knee-jerk policy pronouncements that are simply serving as shortsighted political postures.
- The loss of suppliers and other services this past year will cause problems in being able to get work accomplished in a timely manner. The infrastructure has deteriorated and will get worse with offshore and federal land regulations as well as with what the Environmental Protection Agency may come up with.
- We do not operate on federal lands, and our emissions compliance is up to standards set during the Obama administration and restored by the current administration. We have added over 150 contract employees working directly for the company or for our contractors or subcontractors by returning to drilling and completing wells.
- It is very frustrating to see the progressive "left" exert pressure on the new administration, pushing them not to appoint or hire anyone who has any experience with oil and gas production. This will cause America to relinquish its positive trade balance in oil and regain the posture as the world's biggest importer of oil in just a few years.
- Restrictions will increase the price of oil.
- E&P demand for oilfield services has increased in the last six months, but an oversupply is still creating a buyer's market in 2021.
- We do not drill on federal leases so increasing federal regulations will have no adverse effect on our business.
- COVID-19 is going to be over before we know it, and demand recovery will be stronger than expected. Despite attempts to force electrification, consumer preferences will remain for sport utility vehicles over smaller vehicles and air travel over staying at home. There is a bright future ahead for oil.
- The current regulatory environment is dangerous for the country.
- Any regulation or restriction on leases, drilling or producing only serves to raise oil prices, making existing reserves more valuable. However, as a deal taker, it makes it much more difficult to find reasonably priced deals.
- Regulatory uncertainty creates a clear challenge to continued investment in energy development of our assets.
- The answer regarding whether we are concerned that increased federal regulations will make our business unprofitable could go from "No" to "Yes" in the long run if federal regulations become more targeted at decreasing supply. Companies will adapt by focusing on nonfederal U.S. areas.
- We have federal leases. Therefore, additional federal regulation will have a substantial negative effect.

Oil and Gas Support Services Firms

- Time will tell, but closing loopholes on flaring could actually stimulate some areas of our business. The bigger E&P firms are already moving in that direction.

- We are fortunate, as our primary operations are not directly impacted by the Biden administration's moratorium on federal leasing and permitting. We don't do much work offshore and, with the exception of the New Mexico portion of the Permian Basin, are not impacted by the onshore moratorium. We do expect this change will force relocation of companies from those areas and cause a further oversupply of service equipment in the areas of state and private land drilling. This change is likely a positive for states like Texas, Oklahoma, Kansas, West Virginia, Ohio and Pennsylvania, as more E&P companies will shift budgets to those states not impacted by the federal moratorium.
- The global oil supply has been impaired based on actions taken over the last 12 months, especially in the lower 48 states.
- Our company is looking to diversify our operations so that we have other revenue streams that aren't impacted by increased federal regulations. Our business, along with many others, is directly impacted by these regulations.
- Increased federal regulations will likely impact our costs to build and operate pipelines. State regulation, particularly in New Mexico, could have a large impact as well.
- As to the question about federal regulations making our business unprofitable, I think that regulations that restrict access to drillable locations will make other drillable areas more attractive and will lead to improved commodity prices. The use of hydrocarbons is not going away anytime soon, and should the economy rebound to need 100 million barrels a day again, oil and gas prices will improve to make delivering those 100 million barrels profitable. Restrictive federal regulations will only exacerbate the potential price spike.
- As usual, the price of oil is so unpredictable. I never would have guessed it would hit $65 per barrel in March of 2021.

Historical data are available from first quarter 2016 to the most current release quarter.

Business Indicators: Quarter/Quarter

Business Indicators: All Firms
Current Quarter (versus previous quarter)

Indicator	Current Index	Previous Index	% Reporting Increase	% Reporting No Change	% Reporting Decrease
Level of Business Activity	53.6	18.5	59.4	34.8	5.8
Capital Expenditures	30.0	6.3	43.1	43.8	13.1
Supplier Delivery Time	7.8	–0.7	19.6	68.6	11.8
Employment	8.4	–11.7	16.2	76.0	7.8
Employee Hours	22.8	–6.9	28.6	65.6	5.8
Wages and Benefits	14.8	–12.4	20.6	73.5	5.8

Indicator	Current Index	Previous Index	% Reporting Improved	% Reporting No Change	% Reporting Worsened
Company Outlook	70.6	21.6	75.3	20.0	4.7

Indicator	Current Index	Previous Index	% Reporting Increase	% Reporting No Change	% Reporting Decrease
Uncertainty	–22.2	–13.8	20.9	35.9	43.1

Business Indicators: E&P Firms
Current Quarter (versus previous quarter)

Indicator	Current Index	Previous Index	% Reporting Increase	% Reporting No Change	% Reporting Decrease
Level of Business Activity	47.1	16.5	53.8	39.4	6.7
Oil Production	16.3	1.0	34.6	47.1	18.3
Natural Gas Wellhead Production	15.9	–2.1	32.7	50.5	16.8
Capital Expenditures	31.0	12.5	45.6	39.8	14.6
Expected Level of Capital Expenditures Next Year	49.5	24.0	56.3	36.9	6.8
Supplier Delivery Time	4.8	–2.1	17.3	70.2	12.5
Employment	1.0	–13.4	9.7	81.6	8.7
Employee Hours	11.6	–8.2	18.4	74.8	6.8
Wages and Benefits	7.7	–14.4	15.4	76.9	7.7
Finding and Development Costs	3.9	–21.9	12.7	78.4	8.8
Lease Operating Expenses	–5.9	–12.5	10.8	72.5	16.7

Indicator	Current Index	Previous Index	% Reporting Improved	% Reporting No Change	% Reporting Worsened
Company Outlook	69.6	25.3	74.7	20.2	5.1

Indicator	Current Index	Previous Index	% Reporting Increase	% Reporting No Change	% Reporting Decrease
Uncertainty	–21.4	–22.9	22.3	34.0	43.7

Business Indicators: O&G Support Services Firms
Current Quarter (versus previous quarter)

Indicator	Current Index	Previous Index	% Reporting Increase	% Reporting No Change	% Reporting Decrease
Level of Business Activity	66.7	22.4	70.6	25.5	3.9
Utilization of Equipment	63.2	6.4	67.3	28.6	4.1
Capital Expenditures	28.0	−6.2	38.0	52.0	10.0
Supplier Delivery Time	14.3	2.1	24.5	65.3	10.2
Lag Time in Delivery of Firm's Services	18.8	−4.3	18.8	81.3	0.0
Employment	23.5	−8.3	29.4	64.7	5.9
Employee Hours	45.1	−4.1	49.0	47.1	3.9
Wages and Benefits	29.4	−8.4	31.4	66.7	2.0
Input Costs	36.0	−4.3	38.0	60.0	2.0
Prices Received for Services	20.0	−29.7	26.0	68.0	6.0
Operating Margin	14.0	−31.9	28.0	58.0	14.0

Indicator	Current Index	Previous Index	% Reporting Improved	% Reporting No Change	% Reporting Worsened
Company Outlook	72.6	14.6	76.5	19.6	3.9

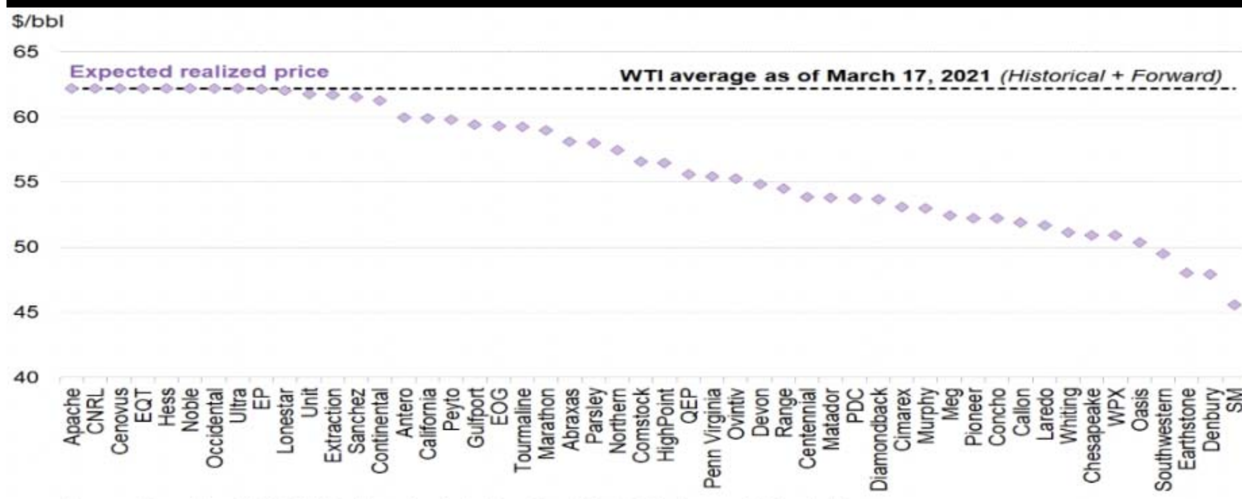
Indicator	Current Index	Previous Index	% Reporting Increase	% Reporting No Change	% Reporting Decrease
Uncertainty	−24.0	4.1	18.0	40.0	42.0

Excerpt Bloomberg @TheTerminal TOPLive blog on EIA's Weekly Petroleum Status Report, March 24, 2021

Despite oil price's rally, production is holding stubbornly at 10.9 million barrels per day. Not only are producers focused on debt reduction over growth, but also many of them are not actually recouping these higher prices due to their hedging positions.

Of the 50 producers tracked by BNEF, combined hedge losses have reached $8 billion, and only 14 firms are expected to realize prices above $60 on their 2021 production as a result.

BNEF offers detailed hedge position data and tools to analyze the effect of these hedges on financial positions for 50 U.S. and Canadian producers. For more details, see our newly published Hedging Tools Guide.



Source: BloombergNEF Oil Hedging Analysis LiveSheet (2.0); Pricing as of March 17.

BNEF Analyst: Anastacia Dialynas

President Joe Biden holds a press conference, sked FINAL
2021-03-25 20:00:11.482 GMT

TRANSCRIPT

March 25, 2021

NEWS CONFERENCE

PRESIDENT JOSEPH R. BIDEN JR.

PRESIDENT JOE BIDEN HOLDS A PRESS CONFERENCE

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PRESIDENT JOE BIDEN HOLDS A PRESS CONFERENCE

MARCH 25, 2021

SPEAKERS:
PRESIDENT JOSEPH R. BIDEN JR.

(CORRECTED COPY)

BIDEN: Please, please sit down. Thank you. Thank you.

Good afternoon. Before I take questions, I want to make -- give
a progress report to the nation on -- on where we stand 65 days into
office here on vaccinations and a few other top priorities for the
American people.

enormous consequence. Will there be middle class? How will people adjust to these significant changes in science and technology and the environment? How will they do that?

And our democracy is equipped because all the people get to speak to compete. It is clear -- absolutely clear, and most of the scholars I've dealt with at Penn agree with me around the country that this is a battle between the utility of democracies in the 21st century and autocracies.

If you notice, you don't have Russia talking about Communism anymore, it's about an autocracy. Demand decisions made by a leaders of a country. That's what's at stake here. We got to prove democracy works.

QUESTION: Mr. President, I'm sorry, I know you haven't had a chance to address the tragedies in Georgia and Colorado. You had said to stay tuned for actions that you might take upon gun control. Wondering if you've made a decision either about sending the manufacturer liability bill that you had promised on day one to Capitol Hill or executive actions like going after ghost guns or giving money to cities and states to battle gun control.

BIDEN: All the above. It's a matter of timing.

As you've all observed, successful presidents better than me have been successful in large part because they know how to time what they're doing. Order, deciding priorities, what needs to be done.

BIDEN: The next major initiative is -- and I'll be announcing it Friday in Pittsburgh in detail -- is to rebuild the infrastructure both physical and technological infrastructure of this country so that we can compete and create significant numbers of really good-paying jobs, really good-paying jobs. And some of you have been around long enough to know -- that used to be a great Republican goal and initiative. I still think the majority of the American people don't like the fact that we are now ranked, what, 85th in the world in infrastructure.

I mean, look, the future rests on whether or not we have the best airports, and that can accommodate air travel, ports that you can get in and out quickly so businesses decide. Some of you, when you're -- if you were ever local reporters and you found your governor or mayor trying to attract business to your community, what's the first thing the businesses ask? What's the closest access -- access to an interstate highway? How far am I from a -- a freight rail? Is the water -- is the water available? Is enough water available for me to conduct my business? All the things that are related to infrastructure.

We have somewhere -- I -- I -- I asked the staff to write it
down for me and they did -- not for this, but for a -- a longer
discussion. We have somewhere, in terms of infrastructure, we have
-- we rank 13th globally in infrastructure. China's investing three
times more in infrastructure than the United States is. Bridges --
more than one third of our bridges, 231,000 of them need repairs.
Some are physical safety risks or preservation work. One in five
miles of our highways and major roads are in poor condition. That's
186,000 miles of highway. Aviation -- 20 percent of all flights --
20 percent of all flights weren't on time, resulting in 1.5 million
hours lost in production. Six- to 10 million homes in America still
have lead pipes servicing their water lines. We have over 100,000
wellheads that are not capped, leaking methane. What are we doing?

And by the way, we can put as many pipefitters and miners
(inaudible) to work capping those wells at the same price that they
would charged to dig those wells. So I -- I -- I just find it
frustrating -- frustrating, talking about...

Last point I'll make on the infrastructure, and I apologize for
spending more time on it, but -- is that if you think about it, it's
the place where we will be able to significantly increase American
productivity, at the same time providing really good jobs for
people. But we can't build back to what they used to be. We have to
build -- the environments are -- global warming's already done
significant damage. The roads that used to be above the water level
-- didn't have to worry about where the drainage ditch was. Now,
you've got to rebuild them three feet higher, because it's not going
to go back to what it was before -- only get worse unless we stop
it.

(CORRECTED COPY)

BIDEN: There's so much we can do. Look at all the schools in
America. Most of you live in the Washington area now, but in your
hometowns -- I don't know where you're all from -- how many schools
where the kids can't drink the water out of the fountain? How many
schools are still in the position where there's asbestos? How many
schools in America we're sending our kids to don't have adequate
ventilation? How many schools, buildings, office complexes are
wasting billions of barrels of oil over time because they can't hold
in the heat or the air conditioning, cause that's -- leaks through
the windows that are so porous in the connections (ph)? It's
amazing.

So there's so much we can do that's good stuff, makes people
healthier and creates good jobs. And I think that I've got one more
question here, and Janet (ph) from Univision?

QUESTION: Thank you, Mr. President. We, too, have been
reporting at the border and just like Cecilia (ph), we've run into a

https://www.local488.ca/system/files/pdf/news/cnrl_update_march_25.pdf

All,

We have had a number of positive cases here at CNRL Horizon and we are working with AHS and all of our companies along with our onsite EMS teams on keeping everyone safe and healthy. A lot of you have been affected with a number of people that have been put into close contact isolation and this can be rather frustrating for the individuals. We ask that you all have conversations with your crews to work with the contact tracers and the medical staff with respect and patience. We will get through this troublesome time together.

We are going forward with the TA as scheduled and our first plants will be coming off line on Sunday March 28th. We are continuing with the rapid testing and the testing at the medical center. Please make sure that you pass along this most important message to you crews and people.

Wearing the proper masks and wearing them properly helps. Hand sanitization is also very important and should be done at every chance – touching high contact services including door handles, tables, desks, work spaces, work equipment, handrails, luggage racks, etc.

If you are not feeling well or have even minor symptoms stay in your room or do not board a plane !

In an effort to mitigate some of the close contacts during traveling we are implementing the following actions:

Shift Schedules will be 6-1, 12-2, 18-3, 24-4
As you know if you have worked on our site before we typically do not endorse the 18/3 , 24/4 but we are making an exception this year due to the circumstances. It is very important that we do not run people over the 24 days of continuous work and this needs to be managed very efficiently by your site management teams.

CNRL is also allowing the personal vehicles to be driven to site and paying applicable travel amounts referenced in the applicable agreements.

The pre-jobs have been completed and signed off with some different information but this is an official approval of this change.

Let's work together to make sure we all have a safe and prosperous Turnaround Event in 2021.

Thank You
Jeff White
U2 TA Manager

COMMODITIES

MARCH 24, 20213:18 PMUPDATED 2 DAYS AGO

Venezuela's PDVSA cuts light crude output after gas pipeline burst

By Reuters Staff
2 MIN READ

CARACAS (Reuters) - Venezuelan state oil company PDVSA has slashed output of light crude by at least 30,000 barrels per day (bpd) after a pipeline used to transport associated natural gas burst, two people familiar with the matter said on Wednesday.

The suspension of wells producing light, sweet Santa Barbara crude in the northern part of eastern Monagas state could also threaten production of Venezuela’s main crude export blend, Merey 16. PDVSA has been using Santa Barbara to dilute the extra heavy crude from the Orinoco belt further south, the main component of Merey.

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The interruption of output comes after a 36-inch pipeline providing natural gas to the Pigap II re-injection plant exploded on Saturday, in an incident the oil minister blamed on an attack but that Venezuela’s political opposition said was the result of years of underinvestment and lack of maintenance.

PDVSA has in recent months sought to boost crude production, which last year fell to its lowest levels in decades below 400,000 bpd, according to figures Venezuela provided to OPEC. Output had rebounded to 538,000 bpd by February, OPEC data show, and authorities had pledged to boost output to 1.5 million bpd this year.

ADVERTISEMENT

Neither PDVSA nor Venezuela’s oil ministry immediately responded to requests for comment.

PDVSA halted production at 85 wells due to the explosion, said one of the people, who spoke on the condition of anonymity. Another source said some key projects

had inventory of Santa Barbara to use as diluent, but it was not clear how long supplies would last.

U.S. sanctions on PDVSA enacted in 2019 as part of an effort to oust Venezuelan President Nicolas Maduro barred oil companies from sending diluents such as heavy naphtha to the South American country, forcing the state firm to switch to alternatives including Santa Barbara crude and condensates.

Reporting by Luc Cohen in New York and Deisy Buitrago in Caracas; Editing by Sonya Hepinstall

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MORE FROM REUTERS

Bloomberg @TheTerminal
Saudis Seek U.S. Help to Thwart Rising Attacks on Oil Sites (1)
2021-03-23 18:04:28.415 GMT

By Matthew Martin and Salma El Wardany
(Bloomberg) -- Saudi Arabia is seeking more help from the U.S. to defend its oil facilities, underscoring the kingdom's concern about recent missile and drone strikes that it has linked to arch-rival Iran.
The requests were put to President Joe Biden's administration since January, according to a Saudi official, who asked not to be named as the discussions are private. Saudi Arabia is also asking other allies for support to thwart almost-daily attacks on cities and towns, the official said.
On Sunday, the Saudi navy began drills in the Persian Gulf to enhance the security of "vital installations" and oil fields, and secure freedom of navigation in the region's waters, the official Saudi Press Agency said. Saudi Aramco, the state oil company, will take part, according to SPA.
The military exercises follow three attacks on Aramco sites this month alone. On Friday, Yemen's Houthi rebels, who are backed by Iran, said they were responsible for drones and missiles that targeted a 120,000-barrel-a-day refinery in Riyadh, the Saudi capital. They also claimed strikes on the world's biggest oil-export terminal of Ras Tanura and on a fuel depot in Jeddah.

Intercepted

Saudi officials said their air-defense systems and fighter jets intercepted the projectiles used in all the attacks, preventing them from causing substantial damage. Amin Nasser, Aramco's chief executive officer, said the incidents haven't impacted the company and that it will continue to supply petroleum to customers around the world "under any scenario."
Still, oil analysts have said the risk of a major crisis in the Gulf is rising.
"We are one incident away from a major conflagration," said Helima Croft, head of commodity strategy at RBC Capital Markets.
"If one of these drone or ballistic-missile attacks results in significant civilian casualties, it could potentially lead to a more direct confrontation between the Saudis and the Iranians."
Read more: Aramco's $75 Billion Dividend Survives Oil and Earnings Rout
A Saudi-led coalition has been fighting a grinding war against the Houthis since 2015 in an effort to restore Yemen's United Nations-recognized government. The conflict's created what the United Nations has called the world's worst humanitarian disaster and pushed the Yemeni population to the brink of famine.

Peace Efforts

Since coming to power, Biden has rescinded a decision by
his predecessor, Donald Trump, to designate the Houthis as a
terrorist organization, and stepped up efforts to secure a
cease-fire. He's also halted the sale of offensive weapons to
the coalition, though his administration has pledged to continue
providing Saudi Arabia with equipment to defend its territory.
"As President Biden has made clear, we remain committed to
helping Saudi Arabia defend itself from the numerous cross-
border air attacks it is facing from the Houthis," said
Commander Jessica L. McNulty, a Pentagon spokesperson. "The
Department of Defense has a range of efforts we are considering
in order to implement the president's guidance. The United
States is continuing to work together with our Saudi partners to
help the Kingdom defend itself from external threats, while at
the same time revitalizing diplomacy to end the Yemen conflict."
Saudi Arabia has welcomed the prospect of peace talks,
despite the increase in Houthi attacks that analysts and
diplomats say are intended to increase the group's leverage. The
danger, they say, is that a successful strike on Saudi oil
installations could force the kingdom into an escalation it
doesn't want.
Coalition planes pounded Houthi bases over the weekend in
retaliation for the refinery attack.
The Saudi government on Monday proposed a series of steps
to end the war in Yemen, though the Houthis appeared to reject
the plan.
Read more: Saudi Arabia Proposes Yemen Cease-fire After Oil
Attacks
Riyadh says the missiles and drones used to target its
infrastructure are Iranian-manufactured or supplied, a view
shared by the UN. That's led to claims that Iran is using the
Houthis to pressure the U.S. over how to revive nuclear
diplomacy and remove American sanctions on the Islamic Republic.

Abqaiq Attacks

The most prominent attack claimed by the Houthis came in
September 2019, when explosive-laden drones swarmed Aramco's
Abqaiq oil-processing plant and Khurais field. That temporarily
knocked out about half of Saudi Arabia's production capacity and
caused crude prices to spike.
Oil markets have taken comfort from the recent attacks not
being anywhere near as damaging, according to Bob McNally,
president of consultant Rapidan Energy Group and a former White
House official. Moreover, unlike in 2019, there's plenty of
spare capacity around the world due to deep supply cuts that the
Organization of Petroleum Exporting Countries and allies such as
Russia started last year.
While Brent crude prices have risen 24% this year to about
$64 a barrel, they have dropped this month, mostly due to
concerns about a third coronavirus wave.
Still, "the increase in the frequency of airborne attacks

and the focus on energy infrastructure will mean some risk premium remains in oil prices," said Bill Farren-Price, a director at research firm Enverus. "The situation demands a diplomatic push to reduce tensions."

--With assistance from Vivian Nereim, Lin Noueihed, Abbas Al Lawati, Sylvia Westall and Peter Martin.

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- 25 Mar 2021 | 04:39 UTC

Interview: Stellar rise in US crude inflows a sign India is spoilt for choice: Pradhan

- Author **Sambit Mohanty**

HIGHLIGHTS

Dramatic surge in crude flows from US a sign of sourcing flexibility

Refining expansion far from over, to have a big petrochemical focus

Hydrogen, aluminum air batteries figure in energy transition dream

Singapore — The stellar rise of the US from supplying its maiden crude cargo to India to becoming the second-largest supplier in three years is a sign that New Delhi has an aggressive diversification strategy in place that provides flexibility in sourcing cargoes from a world awash with oil, Petroleum Minister Dharmendra Pradhan told S&P Global Platts.

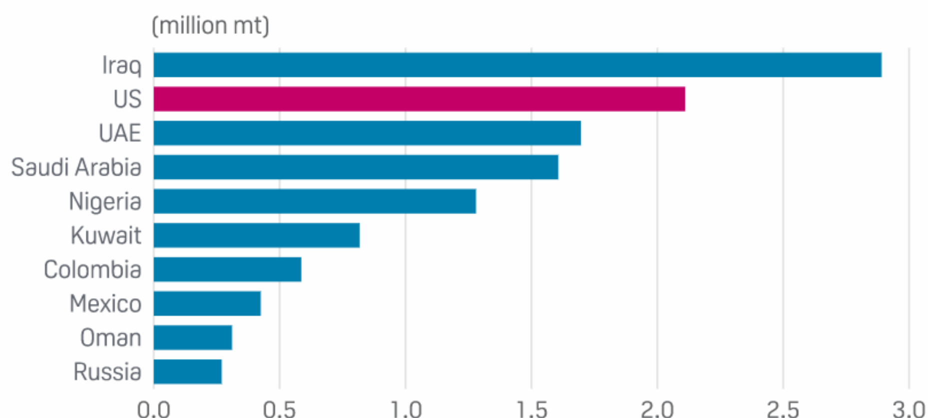
Pradhan, who is India's longest-serving petroleum minister, said that in addition to oil, the rising availability of alternative forms of energy means buyers are now spoilt for choice when it comes to sourcing energy supplies, reducing the need to solely lean on only a handful of suppliers.

"The United States of America is neither in OPEC nor in OPEC+. With the US moving to the position of the second-largest supplier of India, it is an indication of free and competitive markets today," Pradhan said in an exclusive interview.

"OPEC countries are dependable suppliers to India and are our good friends. But OPEC should realize the present scenario. We expect producing countries to realize that at one point of time there were no options. But now we have plenty of options," Pradhan added.

India imported 12.69 million mt of US crude in 2020, up nearly 29% from a year earlier, as the country moved from the sixth-largest crude supplier the year before to the fifth-largest last year, data from GAC Shipping (India) Private Ltd. showed.

But in February, crude flows from the US totaled 2.11 million mt, about 31% higher than the 1.61 million mt from Saudi Arabia, putting the **US as the No. 2 importer** during the month, trailing only top importer Iraq, who shipped 2.89 million mt of crude.



While the surprise twist in February buying patterns stemmed partly from an evolving demand trend, analysts said it also signals New Delhi's objection to the **OPEC+ production cuts**, which have prompted India to diversify imports. After the production cuts, oil prices rebounded to pre-pandemic levels of around $70 a barrel.

"The recent prices are pinching us a bit but we have to sail through the tide," Pradhan said. "Oil producers should realize that we as leading consumers are guarantors of their domestic production. If you push a consuming country to the wall, it will move to alternative sources."

Pradhan has been serving as the petroleum minister since 2014 and has spearheaded a series of energy policy reforms -- from accelerating the use of LPG as a cooking fuel to aligning domestic oil prices with the global market, while introducing a new hydrocarbons exploration and licensing policy. He is also India's steel minister.

Refining growth, petrochemicals

Pradhan said that New Delhi was keeping an eye on geopolitical developments in the Middle East following recent attacks on oil infrastructure in Saudi Arabia, as well as developments on US-Iran relations.

He added that while oil and gas would continue to play a key role in the coming decades, New Delhi would be looking to formulate policies and incentives to ensure that incremental demand is met through relatively cleaner forms of energy.

Pradhan added that with India's oil demand expected to double by 2040, it was imperative for the county to pursue both greenfield and brownfield refinery expansions, which would take the country's refining capacity from the current 250 million mt/year to 450 million mt/year by 2030.

"A lot of the expansion will be done keeping the prospect of the petrochemicals industry in mind. Petrochemicals is a sunrise industry for us and our consumption is much below the global average. We see huge prospects in areas such as polymers and textiles," Pradhan added.

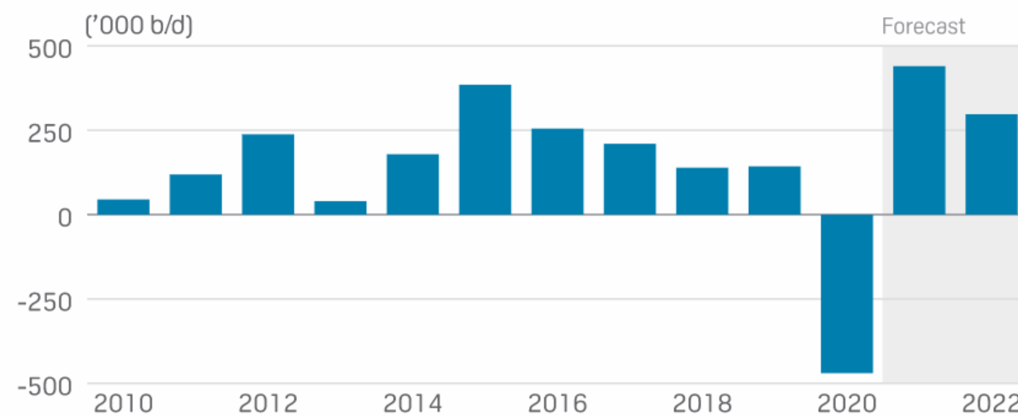
He said that consumption of gasoline and gasoil had rebounded to pre-pandemic levels, while the LPG distribution initiative had helped the product to witness robust growth even during the peak **COVID-19** spread last year. "In some regions, demand for transport fuels is even above pre-pandemic levels."

Energy transition path

Commenting on the government's vision to achieve the target to raise the share of gas in the energy mix to 15% by 2030 from the current 6.2%, Pradhan said New Delhi was pushing different pathways, such as coal gasification and biogas.

In the recent federal budget, India unveiled a national **hydrogen** mission to accelerate plans on the carbon-free fuel.

"We have a vision to become a key player in hydrogen as we have now become in solar energy. We have drastically reduced production costs for solar power and we want to do the same for hydrogen. For that we need new technologies for which we are working with various stakeholders and experts," Pradhan added.



Indian Oil Corp. and Greenstat Norway have recently agreed to set up of Centre of Excellence on Hydrogen, which would facilitate transfer and sharing of technology, know-how and experience through the green hydrogen value chain and other relevant technologies including hydrogen storage and fuel cells.

"We are also aiming for aluminum air batteries, which will be made from domestically available aluminum," Pradhan said.

The aluminum–air battery is considered to be an alternative power source for electric vehicles (EVs) because of its high energy density. They produce electricity from the reaction of oxygen in the air with aluminum.

Indian Oil has also recently entered into a collaboration with Phinergy of Israel to manufacture aluminum-air systems in India, as well as develop fuel cells and indigenous hydrogen storage solutions.

Crude Oil in Floating Storage Falls 6.8% in Past Week: Vortexa
2021-03-22 08:00:05.858 GMT

By Bloomberg Automation
(Bloomberg) -- The amount of crude oil held around the world on tankers that have been stationary for at least 7 days fell to 96.46m bbl as of March 19, Vortexa data show.
* That's down 6.8% from 103.51m bbl on March 12
* Asia Pacific up 1.9% w/w to 67.74m bbl
* Middle East down 11% w/w to 8.94m bbl
* Europe down 6.8% w/w to 8.67m bbl
* North Sea up 20% w/w to 3.81m bbl
* U.S. Gulf Coast down 40% w/w to 3.22m bbl
* West Africa down 61% w/w to 806.00k bbl

* Company Exposure:
** Asia: Cosco Shipping Energy Transportation Co., HMM Co. Ltd., Mitsui O.S.K. Lines Ltd., Nippon Yusen KK
** Europe: Euronav NV, Frontline, Vopak
** U.S.: DHT Holdings, International Seaways, Nordic American Tankers, Teekay Tankers, Tsakos Energy Navigation
* NOTE:
** Vortexa data exclude FPSO units, oil products and Iranian condensate
** Crude oil transferred by STS isn't included until that volume has been stationary on receiving vessel for 7 days
** Data don't include vessels booked for floating storage until they are actually stationary for the minimum period
** See VTXA or DATA FLOAT for more data, which is subject to revisions, and see NI TANTRA for all tanker-tracking stories
** See SPOT FREIGHT for freight rate assessments using shipbroker data

To contact Bloomberg News for this story:
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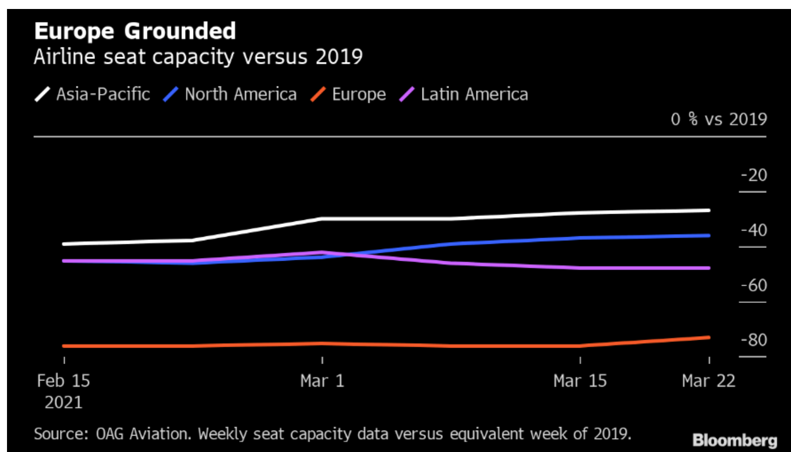
OIL DEMAND MONITOR: Europe Lagging as Passengers Return to Skies
2021-03-23 16:05:08.899 GMT

By Stephen Voss
(Bloomberg) -- Air travel is climbing steadily and is more than half way back to normal in most parts of the world, boosting jet fuel demand – apart from Europe, where activity remains stubbornly low.
China, with its large domestic market, has shown the fastest recovery, with seat capacity nudging above 2019 levels in the middle of this month, according to OAG Aviation. More recent data for March 22 shows capacity for the whole of the Asia-Pacific region was 27% below 2019 and North America was down 36%.
By contrast, Europe lagged all other continental regions with a massive 73% deficit to the year before Covid struck.



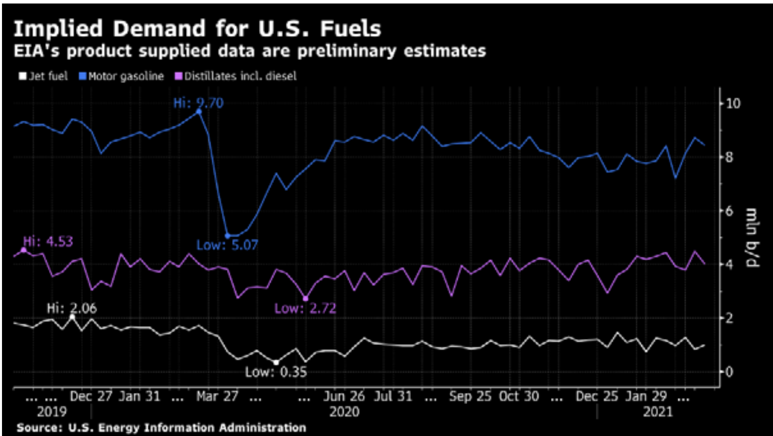
Long-distance travel is still heavily impeded in Europe by movement restrictions and a surge in infections in many countries. Delivery delays and temporary suspensions of the Oxford-Astrazeneca Covid-19 vaccine haven't helped.
The region's airline seat capacity currently doesn't exceed the combined total for Latin America and the Middle East, whereas two years ago it was close to double.
Germany will impose a five-day hard lockdown over Easter. Some regions of France, including Paris, started a new lockdown on Saturday that may last as long as four weeks. Even the U.K., which has had a rapid rollout of vaccinations, won't allow international holiday travel until May 17 at the earliest.
The recovery in air travel within China is no doubt helping boost the Asia-Pacific region's overall tally while many other countries, including Malaysia and Thailand, are still hampered by movement restrictions and a lack of tourists.
READ: Tourism Lull From Thailand to Singapore Damping Oil Demand

Busy London Roads

Road traffic data is showing differences between the U.K. and some other parts of Europe. London, Shanghai and Beijing were the only places out of 13 cities regularly studied in this weekly monitor that show congestion above 2019 levels, with Tokyo not far behind.
A road journey in London at 8 a.m. on Monday that would take an hour on empty roads had 40 extra minutes of congestion, unchanged from a week earlier and 5% more than typical 2019 levels, according to location technology company TomTom NV. Traffic delays in Paris, however, slipped from 40 minutes to 26 minutes within a week, meaning congestion was about 42% less than in 2019, the same percentage as New York.
The Bloomberg weekly oil-demand monitor uses a range of high-frequency data series to help identify trends that may become clearer later in more comprehensive monthly figures.
China began localized Covid-19 lockdowns in late January 2020, while most places in Europe and North America waited until mid-March last year and by the end of that month, virtually all nations were under strict lockdown, according to government responsetracking by Oxford University. Consequently, comparisons versus 2019 are more useful than straight year-over-year calculations.
Following are the latest indicators, in the four tables below. The first two show fuel demand and mobility, the next shows air travel globally and the last is refinery activity:

Measure	Location	% y/y	% vs 2019	% m/m	Freq.	Latest as of Date	Latest Value	Source
Gasoline demand	U.S.	-13	-10	+0.4	w	March 12	8.44m b/d	EIA
Distillates demand	U.S.	+0.4	-14	-10	w	March 12	4.03m b/d	EIA
Jet fuel demand	U.S.	-42	-44	-14	w	March 12	1.01m b/d	EIA
Total oil products demand	U.S.	-12	-12	-8.4	w	March 12	18.93m b/d	EIA
All vehicles miles traveled	U.S.		-8		w	March 14	14.3b miles	DoT
Passenger car VMT	U.S.		-10		w	March 14	n/a	DoT
Truck VMT	U.S.		+9		w	March 14	n/a	DoT
All motor vehicle use index	U.K.	-19		+15	d	March 15	78	DfT
Car use	U.K.	-23		+18	d	March 15	72	DfT
Heavy goods vehicle use	U.K.	-6		+5	d	March 15	105	DfT
Gasoline (petrol) avg sales per filling station	U.K.	-32		+30	w	March 14	5,032 liters/d	BEIS
Diesel avg sales per station	U.K.	-19		+18	w	March 14	8,461 liters/d	BEIS
Total road fuels sales per station	U.K.	-24		+22	w	March 14	13,493 liters/d	BEIS
Light vehicle traffic	France	-19	-12		m	February	n/a	Vinci
Heavy vehicle traffic	France	-2.8	+1.5		m	February	n/a	Vinci
Gasoline	India	+5.3		+1	2/m	March 1-15	1.05m tons	Bberg
Diesel	India	+7.4		unch	2/m	March 1-15	2.84m tons	Bberg
Jet fuel	India	-37		-2.6	2/m	March 1-15	204k tons	Bberg
Passenger car traffic	Poland	+59	-12	-2	w	March 21	18,482	GDDKiA
Heavy goods traffic	Poland	+13	+11	+7.5	w	March 21	4,788	GDDKiA
Road fuels	Spain	-24		-20	m	January	1.7m tons	CORES
Gasoline (road)	Spain	-30		-24	m	January	293k tons	CORES
Diesel (road)	Spain	-23		-19	m	January	1.4m tons	CORES
Jet fuel	Spain	-73		-20	m	January	128k tons	CORES
All vehicles traffic	Italy	-18		+27	m	February	n/a	Anas
Heavy vehicle traffic	Italy	-2		+18	m	February	n/a	Anas
Gasoline	Portugal	-40	-37	-17	m	February	48k tons	ENSE
Diesel	Portugal	-23	-23	-7.5	m	February	292k tons	ENSE
Jet fuel	Portugal	-83	-80	-49	m	February	18k tons	ENSE
Gasoline	Colombia	-7.4		+8	m	February	5.2m gal/d	Ministry
Diesel	Colombia	-1.5		+16	m	February	4.7m gal/d	Ministry
Jet fuel	Colombia	-43		-15	m	February	700k gal/d	Ministry

The frequency column shows d for data updated daily, w for weekly, 2/m for twice a month and m for monthly. * BEIS comparison is now y/y, not versus pre-lockdown as in some previous monitors.

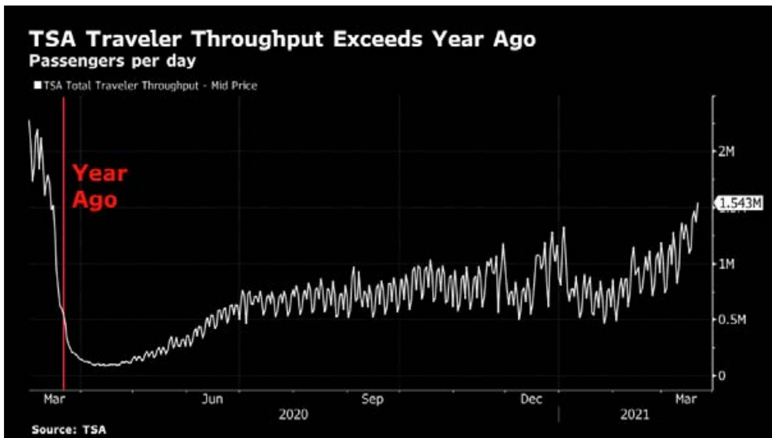


Measure	Location	% chg vs 2019	% chg m/m	Mar. 22	Mar. 15	Mar. 8	Mar. 1	Feb. 22	Feb. 15	Feb. 8	Feb. 1	Jan. 25
		for Mar. 22		(minutes of congestion at 8am local time)								
Congestion	Shanghai	+18	+41	47	47	44	50	34	0	17	37	28
Congestion	Beijing	+11	+76	47	49	43	51	27	0	20	29	26
Congestion	Tokyo	-13	-2	32	34	37	31	33	29	31	32	31
Congestion	Mumbai	-82	-15	7	6	7	8	8	9	8	9	9
Congestion	New York	-42	+15	18	17	16	19	16	4	17	25	10
Congestion	Los Angeles	-54	-4	16	19	15	16	17	5	11	11	8
Congestion	London	+5	+106	40	40	32	20	19	23	22	19	19
Congestion	Rome	-60	-40	19	13	53	38	32	36	34	33	37
Congestion	Madrid	-44	+136	20	22	19	19	8	16	18	15	19
Congestion	Paris	-42	+23	26	40	34	32	21	25	32	34	35
Congestion	Berlin	-30	+15	23	23	4	22	20	18	23	19	18
Congestion	Mexico City	-59	+17	20	1	19	19	17	14	14	0	13
Congestion	Sao Paulo	-65	-40	15	14	17	23	25	11	20	18	5

Source: TomTom. Click here for a PDF with more information on sources, methods. Note: M/m comparison is March 22 vs Feb. 22

Air Travel:

Measure	Location	% chg y/y	% chg vs 2019	% chg m/m	Freq.	Latest as of Date	Latest Value	Source
Airline passenger throughput	U.S.	+182		+38	d	March 21	1.54m people	TSA
Commercial flights	Worldwide	-7.2	-32	+19	d	March 21	74,661	FlightRadar24
Air traffic (flights)	Europe		-64	+9.7	d	March 22	10,374	Eurocontrol
Scheduled flights	Worldwide	-17			w	March 22	417,000	OAG
Seat capacity	Worldwide	-14			w	March 22	59.8m	OAG
Seat cap.	Asia-Pac	+12	-27		w	March 22	29.59m	OAG
Seat cap.	North America	-30	-36		w	March 22	15.47m	OAG
Seat cap.	Europe	-33	-73		w	March 22	6.51m	OAG
Seat cap.	Latin America	-31	-48		w	March 22	4.50m	OAG
Seat cap.	Middle East	-15	-55		w	March 22	2.2m	OAG
Seat cap.	Africa	-12	-49		w	March 22	1.56m	OAG
Seat cap.	China	+81	+8		w	March 15	16.29m	OAG
Seat cap.	U.S.	-33	-32		w	March 15	15.04m	OAG



Refineries:

Measure	Location	y/y chg	m/m chg	Latest as of Date	Latest Value	Source
Crude intake	U.S.	-15%	-9.4%	March 12	13.4m b/d	EIA
Utilization	U.S.	-10 ppt	-7 ppt	March 12	76.1 %	EIA
Utilization	Gulf Coast U.S.	-21 ppt	-16 ppt	March 12	70.7 %	EIA
Utilization	East Coast U.S.	+19 ppt	+8.5 ppt	March 12	76.3 %	EIA
Utilization	Midwest U.S.	+0.2 ppt	+0.3 ppt	March 12	85.7 %	EIA
Apparent Oil Demand	China	+17%		Jan.-Feb. 2021	13.33m b/d	NBS
Independent refs run rate	Shandong province, China	+20 ppt	+0.2 ppt	March 19	72.5 %	SCI99
State refs run rate	East China	+21 ppt	-3 ppt	March 16	76.1 %	SCI99
State refs run rate	South China	+23 ppt	-13 ppt	March 16	74.7 %	SCI99

NOTE: All of the refinery data is weekly, except for SCI99 state ---refineries, which is twice per month, and the NBS apparent demand, which is usually monthly.

--With assistance from Julian Lee.

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https://www.trucking.org/news-insights/ata-truck-tonnage-index-decreased-45-february

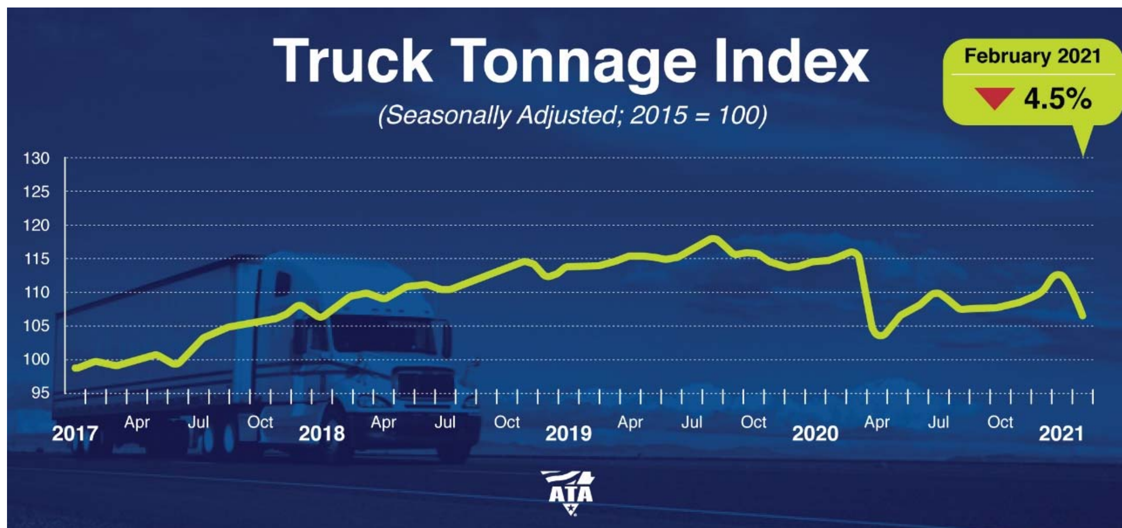
ATA Truck Tonnage Index Decreased 4.5% in February

March 23

Media Contact Sean McNally

Index 5.9% Below February 2020

Arlington, Virginia — American Trucking Associations' advanced seasonally adjusted (SA) For-Hire Truck Tonnage Index decreased 4.5% in February after rising 1.8% in January. In February, the index equaled 110 (2015=100) compared with 115.2 in January.



"February's drop was exacerbated, perhaps completely caused, by the severe winter weather that impacted much of the country during the month," said **ATA Chief Economist Bob Costello**. "Many other economic indicators were also soft in February due to the bad storms, but I continue to expect a nice climb up for the economy and truck freight as economic stimulus checks are spent and more people are vaccinated."

January's gain was revised up slightly to 1.8% from our February 23 press release.

Compared with February 2020, the SA index fell 5.9%, which was preceded by a 1.6% year-over-year decline in January. In 2020, the index was 4% below the 2019 average.

The not seasonally adjusted index, which represents the change in tonnage actually hauled by the fleets before any seasonal adjustment, equaled 99.4 in February, 7.9% below the January level (107.9). In calculating the index, 100 represents 2015. ATA's For-Hire Truck Tonnage Index is dominated by contract freight as opposed to spot market freight.

Trucking serves as a barometer of the U.S. economy, representing 72.5% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.84 billion tons of freight in 2019. Motor carriers collected $791.7 billion, or 80.4% of total revenue earned by all transport modes.

ATA calculates the tonnage index based on surveys from its membership and has been doing so since the 1970s. This is a preliminary figure and subject to change in the final report issued around the 5th day of each month. The report includes month-to-month and year-over-year results, relevant economic comparisons, and key financial indicators.

https://www.eia.gov/todayinenergy/detail.php?id=40152

JULY 23, 2019

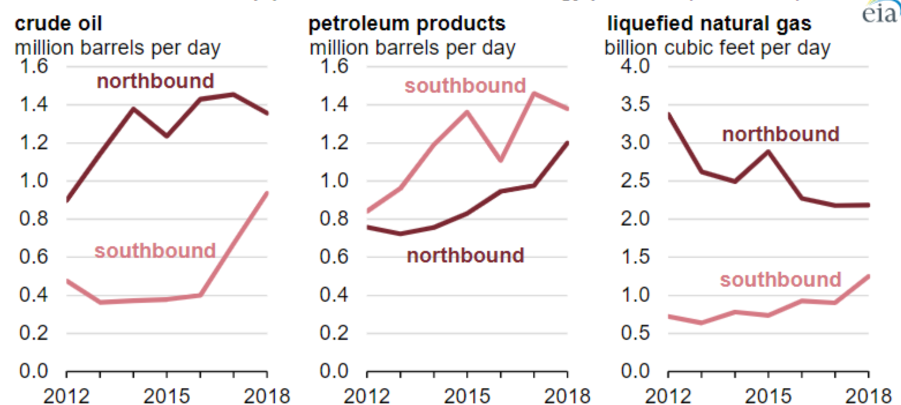
The Suez Canal and SUMED Pipeline are critical chokepoints for oil and natural gas trade

Source: U.S. Energy Information Administration

The Suez Canal and the SUMED Pipeline are strategic routes for Persian Gulf crude oil, petroleum products, and liquefied natural gas (LNG) shipments to Europe and North America. Located in Egypt, the Suez Canal connects the Red Sea with the Mediterranean Sea, and it is a critical chokepoint because of the large volumes of energy commodities that flow through it.

Chokepoints are narrow channels along widely used global sea routes that are critical to global energy security. Total oil flows through the Suez Canal and the SUMED pipeline accounted for about 9% of total seaborne traded petroleum (crude oil and refined petroleum products) in 2017, and LNG flows through the Suez Canal and the SUMED pipeline accounted for about 8% of global LNG trade.

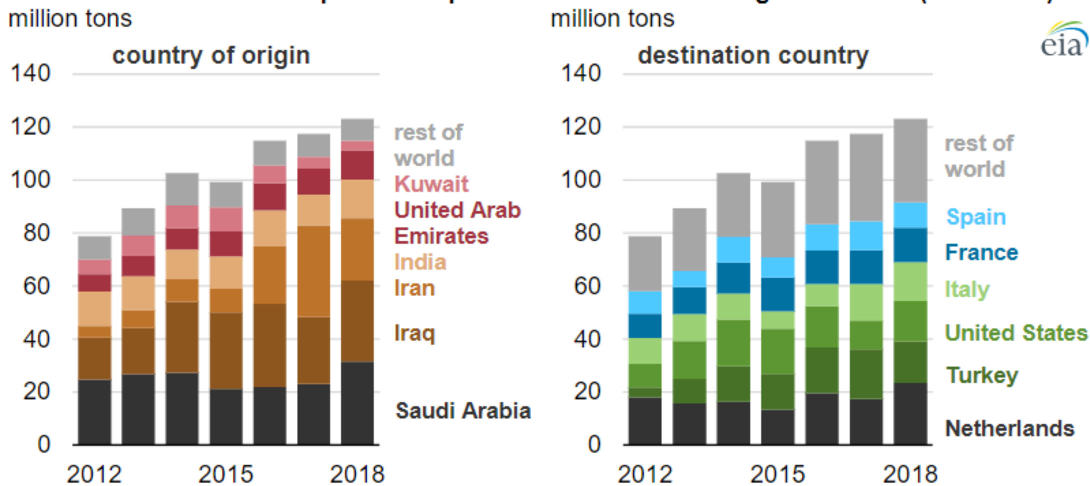
Since 2016, growth in northbound total petroleum flows through the Suez Canal and the SUMED pipeline has slowed, and southbound flows through the canal have risen substantially. In particular, the Suez Canal is gaining importance as a southbound route for U.S. and Russian crude oil and petroleum products to destinations in Asia and the Middle East.



Source: U.S. Energy Information Administration, based on Lloyd's List Intelligence, Clipper Data, and Suez Canal Authority (with EIA conversions)

Slightly more than half of total petroleum transiting the Suez Canal in 2018 was sent northbound to destinations in Europe and North America. Petroleum exports from Persian Gulf countries, such as Saudi Arabia, Iraq, and Iran, accounted for 85% of Suez Canal

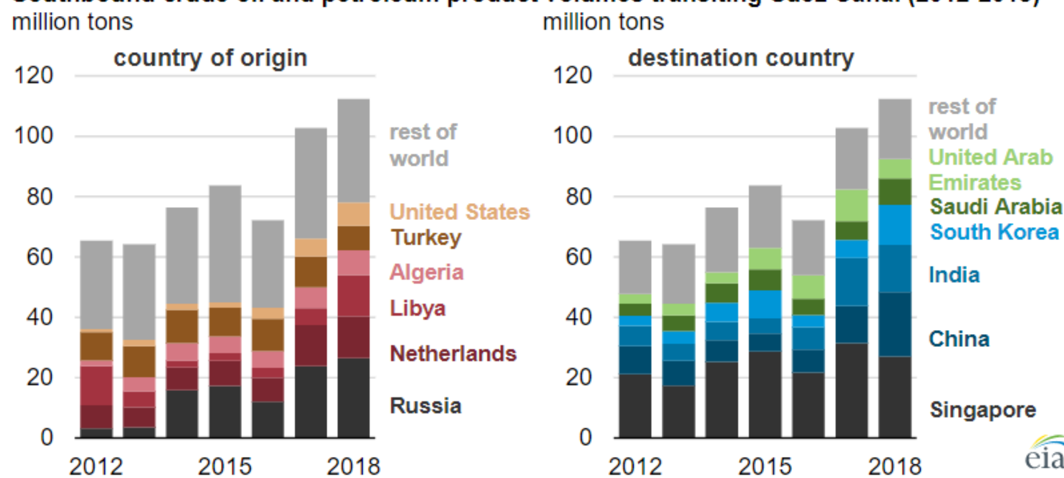
northbound traffic. Northbound flows of petroleum products have risen in recent years, particularly as more ultra-low sulfur diesel fuel has been shipped from Saudi Arabia to European countries.



Northbound crude oil flows decreased in 2018 for several reasons:

- Higher U.S. crude oil exports displaced Persian Gulf crude oil that had been historically sent to Europe.
- Key Middle East producers, mainly Saudi Arabia and Iraq, have been increasing crude oil exports to China and other growing Asian oil markets using eastbound routes rather than the Suez Canal.
- Renewed U.S. oil sanctions on Iran, imposed in late 2018, contributed to a decrease in Iran's crude oil exports to Europe.

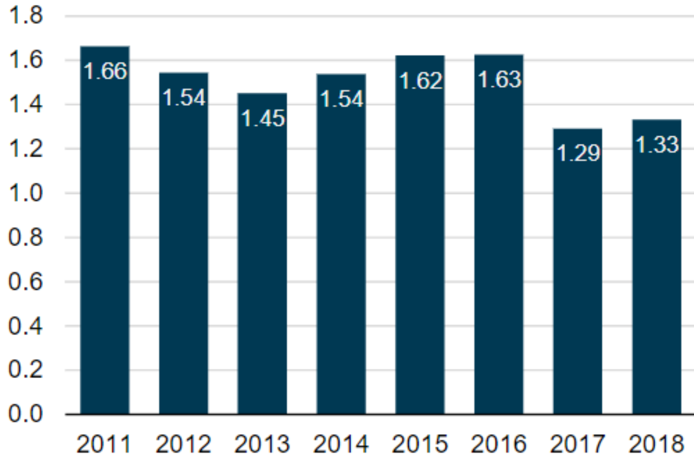
Southbound crude oil shipments, mainly to Asian markets such as Singapore, China, and India, have more than doubled in the past two years. Petroleum exports from Russia accounted for the largest share (24%) of Suez southbound petroleum traffic. Increases in Libya's crude oil production and exports in 2018 also contributed to a rise in southbound shipments. In the past two years, increased production and exports of U.S. crude oil and petroleum products—especially liquefied petroleum gas—have also increased southbound traffic through the canal.



Overall LNG flows through the Suez Canal have declined in recent years. Nearly all (98%) of the northbound LNG transit is from Qatar and mainly destined for European markets. Although Qatar remains a key exporter of LNG through the canal, it has been diverting more cargoes to Asia in recent years.

Changes in LNG traffic through the Suez Canal also reflect the growth in U.S. shale gas production and LNG exports, falling LNG demand in some European countries, and competition for LNG in the global market, especially in Asia.

The 200-mile long SUMED Pipeline transports crude oil northbound through Egypt from the Red Sea to the Mediterranean Sea. Crude oil flows through two parallel pipelines that have a total maximum flow capacity of 2.8 million barrels per day. The SUMED Pipeline is the only alternative route to transport crude oil from the Red Sea to the Mediterranean Sea if ships cannot navigate through the Suez Canal. Crude oil flows through the SUMED Pipeline have declined since 2016 as a result of the shifting oil trade patterns and a widening of the Suez Canal.



Principal contributors: Candace Dunn, Natalie Kempkey

https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/22/readout-of-the-white-houses-meeting-with-oil-and-gas-company-leadership/

Readout of the White House's Meeting with Oil and Gas Company Leadership

MARCH 22, 2021 • STATEMENTS AND RELEASES

Today, National Climate Advisor Gina McCarthy convened a meeting with leadership from oil and gas companies to discuss shared priorities around addressing the climate crisis, protecting and creating good-paying, union jobs across the country, and ensuring America leads the world in a clean energy revolution that powers the future.

During the virtual meeting, National Climate Advisor McCarthy emphasized President Biden's commitment to bringing the voices and perspectives of all stakeholders to the table when tackling climate change. She asked participants to share information about their commitments and ideas for addressing the climate crisis and reducing emissions while supporting local economies and job creation.

National Climate Advisor McCarthy underscored how President Biden's plans to tackle the climate crisis are centered around propelling our equitable economic recovery, positioning America to win the 21st century, and creating millions of good-paying, union jobs directly in American communities. She made clear that the Administration is not fighting the oil and gas sector, but fighting to create union jobs, deploy emission reduction technologies, strengthen American manufacturing, and fuel the American economy.

The Department of the Interior was also represented in the meeting to discuss President Biden's pause on leasing on federal public lands and the ongoing outreach efforts to engage critical perspectives from the public, including workers, Native communities, businesses, and more, as it conducts a comprehensive review of the program to ensure the Administration can advance shared goals around addressing climate change and supporting economic growth.

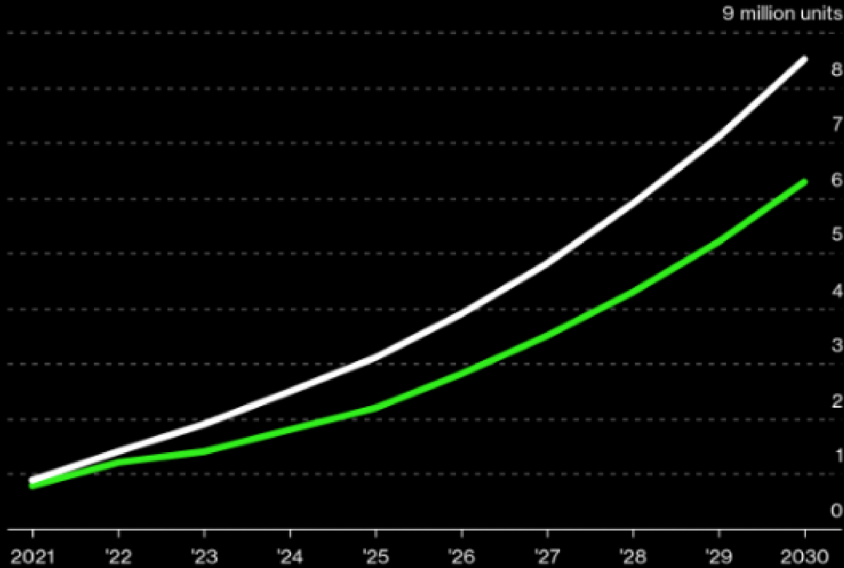
Germany’s Climate Obstacle: Its Love Affair With Combustion Cars
2021-03-26 04:01:05.384 GMT

By William Wilkes and Jess Shankleman
(Bloomberg) -- Sign up for our Hyperdrive newsletter for expert insight into EVs, batteries and autonomous driving
Germany’s transport and energy ministries sit just 450 feet apart, separated by a Berlin Wall monument, in the city’s government quarter. Civil servants and tourists regularly amble across the park between the two buildings. Yet the divide between the departments’ progress on cutting planet-warming emissions threatens to torpedo Chancellor Angela Merkel’s climate goals.
To neutralize greenhouse gas emissions by mid-century, Merkel wants to have as many as 10 million electric vehicles on the road by 2030—twenty times the number today—and a beefed-up energy grid to support them. Getting there will require her transport and energy ministers to work together, along with the environment ministry. But all three come from separate political parties with different agendas.

Politicians like Transport Minister Andreas Scheuer, a member of the Christian Social Union party, are worried about a too-rapid shift to EVs, fearing Germany will face the same deindustrialization that's ravaged Detroit and former industrial cities in the U.K. They’re also reluctant to end a century-old love affair with the internal combustion engine, a German invention that played a leading role in its post-war economic recovery.
Meanwhile Energy Minister Peter Altmaier, from Merkel’s Christian Democratic Union party, has successfully cut emissions in Germany’s energy sector, but struggled to speed up the grid improvements needed to support the EV target. Construction of powerlines to transport electricity from wind farms in the North Sea to Germany’s energy-intensive south has foundered, with projects mired in legal challenges. The country isn’t building enough grid-scale batteries.
Until the two ministries cooperate on policies to boost adoption of EVs, Germany has little hope of meeting its emissions targets. The level of greenhouse gas emissions from transport has hardly budged since the end of the Cold War and now accounts for a fifth of Germany's total. The nation is the starkest example of a decarbonization problem repeated across Europe. While wind turbines and solar panels are rapidly stripping the electricity supply of pollution, vehicles continue to spew emissions.
“It is a big problem,” says Ferdinand Dudenhoeffer, a professor at the Center for Automotive Research in Duisburg. “German politicians want to go in the future, but they also want to save the past.”
From France, home to violent yellow-vest protests against hikes in car fuel taxes, to Italy, where consumers struggle to

afford big-ticket car purchases amid an economic slump that predates the pandemic, policy makers are finding that electrifying transport is one of the most challenging parts of getting to net zero.
Germany’s automakers dragged their feet for years on EVs, in part because consumers didn’t seem all that interested in them. Its powerful lobby has also been able to steer government policy to support combustion engine models. Just 1.2% of the 48 million cars on German roads today are electric, according to the Federal Motor Transport Authority. It doesn’t help that electricity prices are the highest in Europe, but taxes on diesel and gasoline fuels remain below European Union averages.
There are signs things are changing as the global auto industry pivots more sharply to electrification. National champions Volkswagen AG, Daimler AG and BMW AG in recent months have announced targets to sell millions of EVs by 2030.
Volkswagen plans to build six battery factories as part of its efforts to supplant Tesla Inc. Elections this year could also accelerate the shift. The German Greens, which are calling for a 2030 ban on the internal combustion engine, have already seen strong results in two regional elections this month.

Still, the German auto giants have said they'll continue to build combustion engine cars for as long as customers want to buy them—and they have a huge global footprint. Their cars are responsible for heat-trapping gases produced all over the world, from country roads in Russia to traffic in downtown Beijing.
Volkswagen in 2019 said its vehicles were responsible for around 2% of global carbon dioxide emissions.
Following the flurry of automaker announcements and a move by the government to extend subsidies for electric cars, analysts at Deloitte updated their forecasts for EV adoption.
Even with the new push, they still think Germany will only have around 8.5 million alternative drive cars—which includes hybrid models—by 2030. To do its part to meet the EU’s goal of cutting emissions by at least 55% from 1990 levels by 2030, Germany would need about 14 million battery-powered cars, according to Berlin-based think tank Agora Energiewende.



The industry is a huge source of pride for Germany, and a big driver of employment—making its lobby extremely influential. The German Association of the Automotive Industry has consistently pushed back against efforts to cut CO_2 emissions from car transport and has said targets for a 37.5% greenhouse gas reduction by 2030 are "not possible to implement." It also rejects calls for an electric-only future, insisting that efficient combustion engines and synthetic fuels are other ways to hit climate targets.

A revolving door between automakers and government makes it difficult for more progressive thinking to break through. Eckart von Klaeden, a one-time official in Merkel's Chancellery, is now head of external affairs at Daimler. Volkswagen is partially state-owned and the Quandt family dynasty that own around 45% of BMW's stock has contributed hundreds of thousands of euros in donations to Merkel's CDU.

There's also little public pressure as the well-known car brands enjoy deeply embedded support. German consumers are the most sustainably minded in the world, according to market researchers GfK, but they're also loyal to their nation's automakers. "The car is always a different topic in Germany," says Petra Sueptitz, director of consumer insights at GfK, noting that the country has the smallest share of people in the world who don't own a vehicle. "Germans are addicted to their car brands. They are also addicted to cars in general."

Consumers balk at the high initial cost of EVs, and manufacturers won't produce cheaper models until battery prices

are low enough that they can turn enough of a profit on compact cars. It’s unlikely the batteries for smaller family-sized cars that are popular in Germany will meet cost parity with combustion engines until 2028, according to James Frith, an analyst at clean energy reasearch group BloombergNEF.
Potential buyers also fret over the lack of charging infrastructure. In order to support 10 million electric vehicles, Germany would need 1 million charging stations by 2030, according to the government. It currently has just over 40,000. That means it needs to build 2,000 per week, Germany's automaker association says, compared with the 200 that are currently being installed each week.
“We’ll see a huge scarcity of charging points, and a lot of noise about this in the coming months,” says Henrik Thiele, co-founder of Munich-based charging firm Quello GmbH, even as the number of EVs per charging station in Germany has doubled since 2017 to nearly 17 vehicles.
It’s still possible for Germany to hit its 10 million target, especially if the Greens enter government. The country is the top filer of patents for transport technology, according to the World Intellectual Property Organization’s 2020, a sign the technical know-how exists to ramp up EV production. But a whole-of-government push will be needed to make sure “market barriers for EVs and advantages for conventional drives are removed,” says Claudia Kemfert, professor of energy economics at the DIW research institute in Berlin.

This article is part of Bloomberg Green’s Carbon Benchmarks series, which analyzes how countries plan to reach net-zero emissions. Click here to get e-mail alerts when new stories are published.

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https://www.ecopetrol.com.co/wps/portal/Home/en/?1dmy&page=detailNews&urile=wcm:path:/ecopetrol_wcm_library/as_en/news/noticias-2021/emissions-reduction

Ecopetrol Group announces its commitment and plan to achieve net zero carbon emissions by 2050

- **Ecopetrol is the first company in the Oil and Gas industry in Latin America to establish this ambitious goal, in line with its objectives on energy transition, TESG, and climate change mitigation.**
- **The company will reduce its emissions by 25% in 2030 compared a 2019 baseline.**
- **New targets contribute to the objectives of the Paris Agreement and Colombia´s target to reduce greenhouse gas emissions by year 2030.**
- **The Company presents a roadmap to achieve these goals, which includes: reduction of fugitive emissions and venting from routine gas flaring, energy efficiency in operations, incorporation of renewable energies, Natural Climate Solutions, hydrogen and carbon capture, use and storage.**
- **The new decarbonization goals will be incorporated in the TESG Strategy and in the long term Corporate Strategy to be updated in 2021.**
- **Ecopetrol reduced 8.4 million tons of CO2e in the last decade.**

In line with its commitment to mitigate climate change, further the energy transition and its TESG agenda**[1]**, Ecopetrol Group announces its goal of net zero emissions by 2050.

Under this new ambitious goal, the Company ratifies its responsibility with the Sustainable Development Goals (SDGs) and with the Paris Agreement's purpose of curtailing global warming.

The 2050 objective has intermediate goals and a short, medium and long-term portfolio, with some projects already implemented or in a research stage. By 2030, the Ecopetrol Group seeks to reduce its CO2e emissions by 25% (scopes 1 and 2) **[2]** compared to a 2019 baseline.

According to the estimated emissions projected by 2030, this reduction would represent between 5 and 6 million tons of CO2e reductions in this decade – equivalent to the restoration of an area of 500,000 has (ca.), i.e. more than 13 times the urban area of Bogota. In addition, this goal would contribute close to 50% of the reduction goal set by the Colombian energy/mining sector by the year 2030.

In addition, Ecopetrol seeks to reduce 50% of its total emissions by 2050 (scopes 1, 2 and 3).

Ecopetrol Group's goal contributes significantly to the commitment recently announced by Colombia to reduce 51% of greenhouse gas emissions by the year 2030.

The emission reduction goals for the three scopes (1, 2 and 3) will be measured in terms of absolute reductions, and will be periodically reviewed against the progress, maturity and competitiveness of emerging technologies, as well as the evolution of the business plan of the Company and its Corporate Strategy.

"These new goals demonstrate Ecopetrol Group's commitment to face the world's great environmental challenges, and to an orderly and ambitious energy transition. Our objective is to become a comprehensive energy company strengthening our traditional business, positioned at the forefront in the fight against climate change and the application of knowledge, innovation and technology to lead decarbonization efforts in Colombia and Latin America. This goal is based on our TESG strategy – a concept we adopted in Ecopetrol that puts technology at the heart of sustainable management in the environmental, social and governance perspectives", said Ecopetrol CEO, Felipe Bayón.

The development of the goals proposed is part of Ecopetrol Group's Corporate Strategy, its TESG agenda and the roadmap to promote energy transition, under a detailed decarbonization plan to ensure its competitiveness and resilience, and seeking portfolio diversification towards low emission business options.

Decarbonization plan

Ecopetrol is implementing a decarbonization plan that includes the permanent update of the greenhouse gas emissions inventory, the implementation of an emission reduction portfolio, the definition of the roadmap to achieve a net zero emissions goal, and the design and execution of a an offset portfolio of Natural Climate Solutions.

The latter includes avoided deforestation projects, restoration and reforestation in agroforestry projects, among others. It may also represent numerous social benefits to the territories where this strategy is implemented. In addition, these projects have the potential to effectively reduce net CO_2 emissions and contribute to the country's Nationally Determined Contribution (NDC), considering that the main sources of emissions in Colombia are associated with deforestation and land use changes.

The implementation of this plan has already yielded positive results. Ecopetrol achieved a cumulative reduction of 8.4 million tons of CO_2e in the 2010 - 2020 period, of which 1.7 million have been verified by a third party.

The result of the last decade was achieved through programs to reduce fugitive emissions and venting, decrease gas flaring, efforts to achieve energy efficiency in operations and incorporating renewable energy projects focused mainly in solar parks.

In the short and medium term, the plan will be complemented by a more robust portfolio of natural climate solutions, as well as biomass initiatives and the development of solar, wind and geothermal energy projects.

In the long term, Ecopetrol Group plans to develop initiatives related to hydrogen, carbon capture, use and sequestration and energy storage through batteries, once the competitiveness and effectiveness of these alternatives is achieved. In this sense, the company has already started research to determine the potential to produce green hydrogen.

Greater competitiveness and resilience

The objectives set are part of Ecopetrol Group's climate change strategy, which seeks to achieve the following:

- Reduce Greenhouse Gas (GHG) emissions in operations and in the value chain.
- Reduce vulnerability of the operation to the effects of climate change.
- Adequately manage risks and identify opportunities associated with climate change and the energy transition.

This strategy takes into account Colombia's climate change policies and plans, in alignment with the main international standards on the matter such as the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Ecopetrol has initial estimates of costs and emission abatement potential for each of the alternatives proposed in the roadmap. Ecopetrol will integrate these inputs in its business plan in the medium and long term, in order to take the necessary measures to ensure the Company's value creation, cash protection and competitiveness. The use of new sources of capital for green investments will be sought as part of this strategy.

Roadmap

Mature technologies that are currently available – as well as emerging technologies with good prospects – were considered to define the actions that support Ecopetrol Group's new goals. Emission reducing potential and its cost-effectiveness in the short term (2025), medium term (2030) and long term (2050) have been evaluated for each technology mentioned in the zero emissions roadmap.

Net zero emissions roadmap proposed:

2020- 2025:

1. Permanently update the inventory of emissions from direct operations, subsidiaries and non-operated assets, including those associated with scope 3.
2. Implementation of initiatives identified for energy efficiency, reduction of fugitive emissions, venting and flaring, and renewable energies – solar, wind and geothermal.
3. Identifying additional initiatives for efficiency, reduction of flaring and biomass.
4. Developing the portfolio of Natural Climate Solutions.
5. Green hydrogen pilot.

2025-2030:

1. Implementing additional technological options in energy efficiency, reduction of fugitive emissions, venting and flaring, fuel substitution, and renewable energies – solar, wind and geothermal.
2. Further developing the portfolio of Natural Climate Solutions.
3. Gradually escalating green hydrogen and carbon capture, use and sequestration pilots – if the technologies are competitive.

2030-2050:

1. Capitalizing on the technological advancement of competitive initiatives in green hydrogen, carbon sequestration and renewable energy with storage through batteries.
2. Further developing the portfolio of Natural Climate Solutions.

In addition to the projects and initiatives to reduce emissions associated with Scopes 1 and 2, Ecopetrol Group will carry out a comprehensive analysis of the following options regarding Scope 3 emissions:

1. Increase the share of gas in the Group's portfolio.
2. Redirection of refining streams towards petrochemicals according to value addition.
3. Renewable hydrogen to replace gasoline and diesel.
4. Low carbon fuels.
5. Emissions management throughout the supply chain.

Bogota, D.C., March the 25th, 2021

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[1] Model of contribution and generation of value to society. Through innovative and technological solutions, the TESG strategy aims to harmonize economic, social and environmental development under a framework of trustworthy, transparent and ethical government.

[2] Scope 1 and 2 emissions correspond to direct emissions and emissions associated with the purchase of energy. Scope 3 emissions represent emissions in the Company's value chain – mainly those associated with the use of the products sold.

Biden To Put US On "Irreversible Path to Achieve Net-Zero Emissions, Economy-Wide" Is a Major Negative To US Natural Gas in 2020s

Posted Tuesday July 28, 2020. 11:15am MT

Oil and natural gas followers should know that Biden's new clean energy plan is a major negative, in particular, to US natural gas in the 2020s. We know there is still 97 days to the US elections and a lot can change but, with Biden's big polling lead nationally and even in some key battleground states, it's the right time to start to look at what he means to oil and natural gas. Our concern is that Biden states he plans to put the US on an irreversible path to achieve net-zero emissions economy-wide by 2050 and, to do so, he will need to move quickly and strongly on new pro-climate change policies. This not an item that doesn't impact for 30 years and shows up in 2050, rather, the impacts will be in 2020s. Biden's new clean energy plan has multiple game changers to oil and natural gas. This blog focuses on one that will have a major impact on US natural gas in the 2020s – he plans to only have "*carbon-pollution free*" electricity by 2035. Not zero net emissions, "*carbon pollution-free*" ie. no fossil fuels. We don't think this is attainable as fossil fuels provide 60% of US electricity. But if he puts the US on an irreversible path to this goal, even if he is only 25% or 50% successful, it would be a massive hit to future US natural gas consumption. Electricity currently represents ~40% or ~33.5 bcf/d of total US natural gas consumption. If Biden is 50% successful, it will knock of 16.8 bcf/d or 20% of total US natural gas consumption. If he is 25% successful, it will knock of 8.4 bcf/d or 10% of total US natural gas consumption. If markets see Biden is serious about making this happen, it will very quickly impact the long term value of US natural gas and that some investors will soon look to avoid US natural gas ie. not consider it investible for the mid/long term.. Its why we believe Biden's carbon-pollution free electricity plan will be a major negative to US natural gas in the 2020s

<u>Biden's plan to put the US on "an *irreversible path to achieve net-zero emissions, economy-wide, by no later than 2050*", but the impacts on oil and gas will be hitting right away</u>. We know a lot can happen in the 97 days to the election but, given Biden's current wide lead, the time is right to get energy investors on how he plans to turn the US energy mix upside down. The reason why this is part 1 of our blogs on Biden is that his clean energy plan (and his other potential policies) has multiple potential game changers to today's energy mix. And there is too much in it to include in one blog. Two weeks ago, Biden released "*The Biden Plan to Build a Modern, Sustainable Infrastructure and an Equitable Clean Energy Future*". [LINK] We believe the most important takeaway for energy markets to understand is that Biden wants to put the US on "*an irreversible path to achieve net-zero emissions, economy-wide, by no later than 2050*". Our worry is that, to put the US on an "*irreversible path*", he will have to move fast and big in his first four years. Biden's plan, if implemented, will dramatically change the US energy mix to hugely reduce fossil fuels.

<u>There will be an immediate impact on oil and natural gas as climate change will be a Day 1 priority and much more than recommitting to Paris</u>. We have highlighted in the title Biden's target for 2050, but his clean energy plan has many mid term targets that provide clear indicators for materially reduced oil and natural gas demand. Climate change is a Day 1 priority for Biden. Biden's platform has made it clear that climate change is a priority and, not just for his first 100 days, rather his first day. Biden's plan says the US "*Re-enter the Paris Agreement on day one of the Biden Administration and lead a major diplomatic push to raise the ambitions of countries' climate targets*". And it says "*He will not only recommit the United States to the Paris Agreement on climate change – he will go much further than that. He will lead an effort to get every major country to ramp up the ambition of their domestic climate targets. He will make sure those commitments are transparent and enforceable, and stop countries from cheating by using America's economic leverage and power of example. He will fully integrate climate change into our foreign policy and national security strategies, as well as our approach to trade. Biden will rejoin the Paris Agreement, but simply rejoining is not enough. Biden will use every tool of American foreign policy to push the rest of the world to raise their ambitions alongside the United States".* Biden has clearly listened to the Sanders/Warren side and has stepped up his ambitions on climate change. He wants to go beyond the Paris Agreement.

<u>United Nations' COP26 gives the perfect global forum for the world to join Biden's push for the world to raise their climate change ambitions</u>. We continue to believe one of the major global energy themes for 2021 will be the world is behind its targets to meet its climate change targets/ambitions. The IEA has just completed a series of reports that provide data on being behind target, which we included in our June 11, 2020 blog "Will The Demise Of Oil Take Longer, Just Like Coal? IEA and Shell Highlight Delays/Gaps To A Smooth Clean Energy Transition." [LINK] There will be a global spotlight on

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climate change in 2021 with COP26 (the UN Climate Change Conference UNFCCC CO26) being held Nov 1-12 in Glasgow, Scotland. The Paris Agreement on climate change was signed on April 22, 2016 in the last year of the Obama administration. Given Trump pulled the US out of the Paris Agreement, it provides Biden a global stage for the US to re-engage with the world and step back into a global leadership role on climate change. On June 1, 2017, Trump announced the US would cease all participation in the Paris Agreement and gave formal notice to withdraw on Nov 4, 2019. The withdraw takes 12 months to take effect ie. on Nov 4, 2020, which is one day after the Nov 3 presidential election. We don't expect Trump to change the US position whether he loses or wins the election. But as we have seen in all other UN climate change forums, there will be a focus on climate change in the months leading up to Glasgow as countries try to find a consensus position. Biden says he wants to push the rest of the world to raise their ambitions. Biden doesn't say it specifically, but his plan to push the world is consistent with the fact that the world is behind in meeting their climate goals. On July 11, we tweeted [LINK] "*Key 2021 energy theme: #CleanEnergy transition is not on track. UN Guterres 22:10 min "nations must commit to net zero emissions by 2050 and submit more ambitious national climate plans before COP26 next year". Can't make up for lost COVID19 time"*. UN Secretary General Guterres spoke at this week's IEA Clean Energy transitions summit and he reminded of why markets should see a great global focus on the clean energy transition and that is not on track to meet its timing. At the 22:10 min mark [LINK] Guterres said "*nations must commit to net zero emissions by 2050 and submit more ambitious national climate plans before COP26 next year*". The world being behind its clean energy transition targets, Biden's climate change priority and COP26 provide the perfect scenario for Biden's return to US global leadership.

<u>Biden's clean energy plan will dramatically change the future US energy mix away from fossil fuels.</u> Our first blog in this Biden series is focused on Biden's target to "*achieve carbon-pollution free energy in electricity generation by 2035*" because we see this as an item that will impact US natural gas right away. This is a huge target and it means that Biden plans to turn the US energy mix upside down. The other big headline is to push EVs by doing things like federal fleets, mandating all transit and other buses must be EV by 2030, etc. One item that seems to be mostly overlooked so far is one that can have a material impact on oil and natural gas – his focus on improving energy efficiency. Biden says he will "*Reform and extend the tax incentives we know generate energy efficiency and clean energy jobs".* We have always viewed efficiency standards as low hanging fruit that can have a material impact. Its not just car fuel efficiency, but also commercial and residential buildings. Our concern is that efficiency gains end up taking away demand from coal, oil and natural gas as opposed to solar, wind, etc. We expect one of our likely follow on Biden blogs will be on efficiency. There are many other items in the Biden plan. One noticeable omission is no discussion on carbon tax or carbon price.

<u>Biden looks like he is trying to skip over natural gas as the transition fuel to the clean energy world.</u> Natural gas has been universally viewed as the key transition fuel to a world of clean energy. Biden doesn't specifically say so, but it seems like Biden's plan is trying to skip over, or dramatically lower, natural gas role as a transition fuel to a world of clean energy (in this case electricity) and in being the primary fuel source for a new hydrogen world. We will more on hydrogen in the future, but Bide also wants to skip over natural gas as the primary hydrogen source by "u*sing renewables to produce carbon-free hydrogen at a lower cost than hydrogen from shale gas through innovation in technologies like next generation electrolyzers".* Today's blog focuses on the impact of Biden's "carbon pollution-free" electricity target by 2035, but he is trying to eliminate or ensure there are carbon offsets for all fossil fuels in the US energy mix by 2050.

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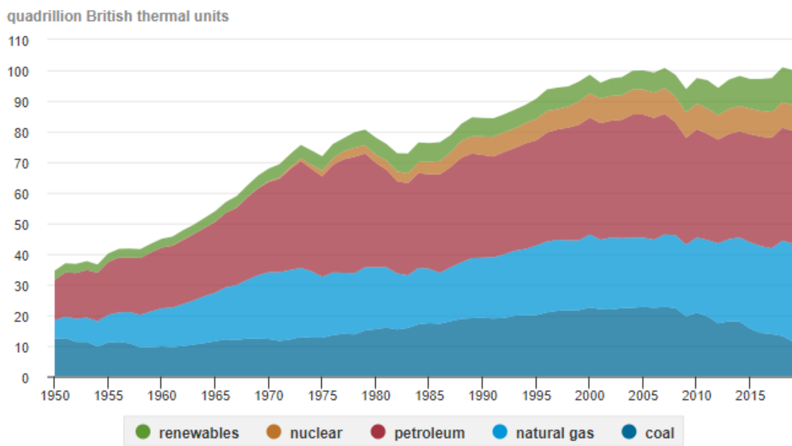
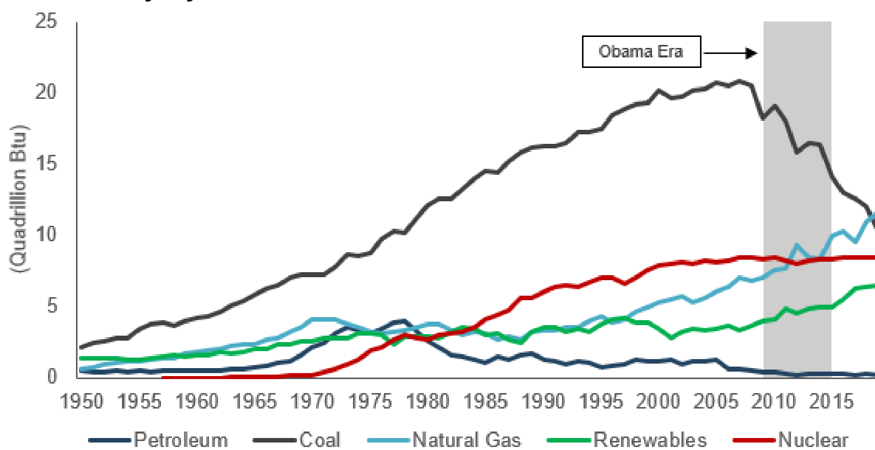
US Energy Mix



Source: EIA

Biden plans means he has to replace 60% of today's fuel for electricity by "*carbon pollution-free"* electricity by 2035. Biden power sector plan is to "*move ambitiously to generate clean, American-made electricity to achieve a carbon pollution-free power sector by 2035. This will enable us to meet the existential threat of climate change while creating millions of jobs with a choice to join a union*." We are a little surprised that we haven't seen a huge market focus on this point. Biden says "*carbon pollution-free*" electricity. Biden doesn't say its "net zero emissions" for electricity but "*carbon pollution free*", which means no fossil fuels. We think this is impossible as it means that in less than 15 years, they will replace ~60% of fuel sources for US 2019 electric power and, perhaps even more difficult, have an integrated power system originally set up for fossil fuels to be able to deliver reliable 24/7 electricity. Its not just the fuel but having the integrated electricity grid to support all clean electricity. In 2019, carbon fuels (oil, natural gas, and coal) provided 60% of fuel for US electric power. But whether it is impossible or not isn't the point. Rather if Biden tends to put the US on an irreversible course, then he will be moving in the first four years to set in place programs, taxes, incentives, etc. And if they start moving to that 2035 target and make any significant progress, it should materially reduce US natural gas consumption over the 2020s.

US Electricity By Fuel Source



Source: EIA

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If Biden is successful in generating only "*carbon pollution-free*" electricity, he could eliminate ~40% (33.5 bcf/d) of current US natural gas consumption. We chose this for our first blog because we see it having a material impact on US natural gas consumption in the 2020s. The EIA estimates 37% (31.0 bcf/d) of US natural gas consumption is for the power sector. In addition, the EIA estimates 27% (23.0 bcf/d) is for industrial consumers, wherein the EIA includes natural gas used for generating power in the industrial consumption. The EIA doesn't split out the % used for electric power, but we have just included 3% to round up natural gas for electric power to 40% or ~33.5 bcf/d of total US natural gas consumption. Note our US natural gas consumption excludes natural gas exports via pipeline or LNG.

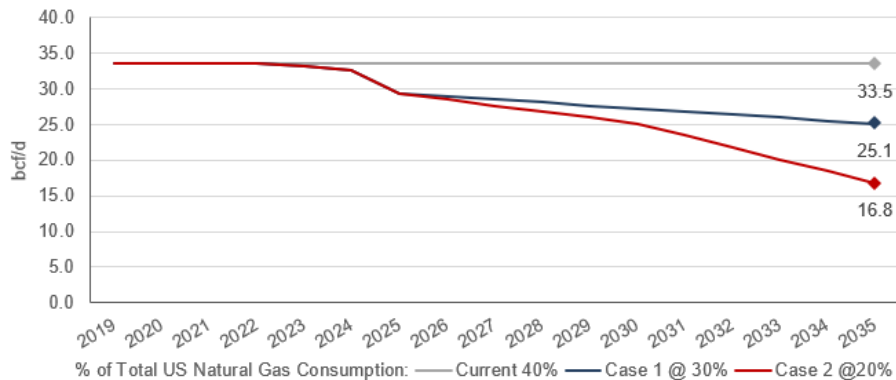
US 2019 Natural Gas Consumption by Sector/Grouping

bcf/d	Residential Consumers	Commercial Consumers	Industrial Consumers	Electric Power Consumers	Other	Total
2019	13.7	9.6	23.0	31.0	7.7	85.0
% of Total Consumption	16%	11%	27%	37%	9%	100%

Source: EIA

Even if Biden is only 25% successful by 2035, it will materially reduce US natural gas consumption. We just don't see how Biden can replace all carbon sources for electricity and have an integrated power system based solely on clean energy by 2035. Regardless, if he puts the US irreversibly on this course in the first four years and is only 25% successful, it is a material reduction to US natural gas consumption. We ran two cases with both assuming no change to the natural gas supplied to electricity for 2021 and 2022, and then any new policies start to impact natural gas for electricity in 2023, consistently decrease until 2030 and then decrease faster to 2035. We ran two cases: natural gas consumption for electricity is reduced by 25% and 50% in 2035, which, by 2030 reduce natural gas consumption by 6.3 bcf/d and 8.4 bcf/d, and by 2035 by 8.4 bcf/d and 16.8 bcf/d. Note we have not included any increasing electricity consumption as we assume Biden's move on efficiency are able to at least offset any estimated small annual growth ie. +0.5% or more.

Natural Gas Lost Consumption If Biden Is 25% or 50% Successful



Source: SAF Group

Once Biden shows he is serious about carbon pollution free electricity, it will inevitably impact the view of long term value of US natural gas. Our concern gets back to the title of our blog that Biden says he wants to put the US on an irreversible path and, to do so, this means he plans to take early actions on climate change. Once it becomes clear that he is taking action to move the US to carbon pollution free electricity by 2035 and that this will happen over the 2020's, there will be the realization that it will materially reduce US natural gas consumption (even if only 25% successful) and this should reduce the long term value of US natural gas.

Moving to a hydrogen economy will not save US natural gas as Biden wants to produce "carbon-free" hydrogen. One of the big global energy themes for the 2020s is moving to a hydrogen world. Right now, the primary (and cheapest) fuel to generate hydrogen is natural gas. Normally, most would expect to that natural gas would be the big winner in the move to a hydrogen economy. And no question if Biden wants to move to hydrogen quickly, natural gas would be the proven (and cheapest) source. However, Biden's clean energy plan notes his priority to produce "carbon-free" hydrogen. Biden wants to be "*using renewables to produce carbon-free hydrogen at a lower cost than hydrogen from shale gas through*

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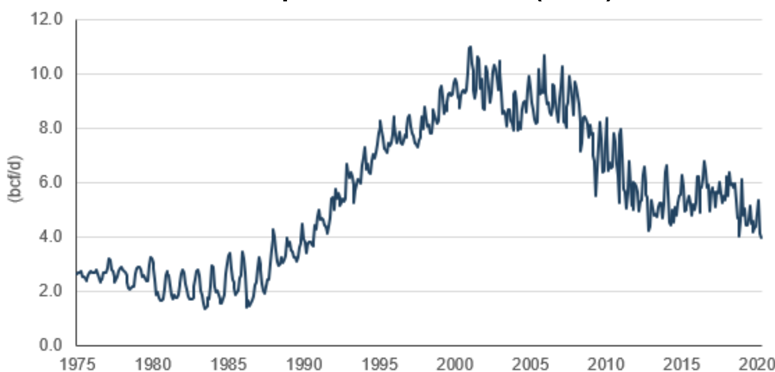
innovation in technologies like next generation electrolyzers;" If Biden wants to add hydrogen quickly, we believe producing "carbon-free" hydrogen at a reasonable price will be another area where there will be a gap between the aspiration and reality.

It's a good thing Canada has LNG Canada and TMX under construction. If Biden moves quickly on the "carbon pollution-free" electricity and US natural gas demand drops, the reality is that it will cause a natural US gas supply correction. There will be less capital provided to a sector that will be viewed to be in decline. But it will also force more US natural gas to look for more export markets. It will also reduce, but not eliminate, US natural gas imports from Canada, which have been on the decline, down to 4.7 bcf/d in 2019 vs 5.4 bcf/d in 2018 and less than half the 10.2 bcf/d in 2007. In a declining US natural gas consumption market, we would not expect to see any capital provided for either new or increasing capacity in US natural gas pipelines to markets to currently served by imports of Cdn natural gas. We expect Cdn natural gas to do better than US natural gas with LNG Canada Phase 1 adding add 1.8 bcf/d of new demand around 2025 and LNG Canada Phase 2, if approved, would add another 1.8 bcf/d of demand. Any potential reduction in US natural gas demand is a reminder of the strategic importance of access to new export markets for Canada's oil and natural gas via under construction LNG Canada and TMX.

US Net Natural Gas Imports From Canada (bcf/d)



Source: EIA

Stay tuned for futures blogs on the impact of a Biden win on oil and natural gas.

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https://www.energy.gov/articles/doe-announces-goal-cut-solar-costs-more-half-2030

DOE Announces Goal to Cut Solar Costs by More than Half by 2030

MARCH 25, 2021

1. Home
2. DOE Announces Goal to Cut Solar Costs by More than Half by 2030

$128 Million in Additional New Solar Energy Initiatives Will Reduce Costs, Improve Performance, and Speed Deployment of New Solar Technologies

WASHINGTON, D.C. — The U.S. Department of Energy (DOE) today announced an ambitious new target to cut the cost of solar energy by 60% within the next ten years, in addition to nearly $128 million in funding to lower costs, improve performance, and speed the deployment of solar energy technologies. These investments support the Biden-Harris Administration's climate goals and will pave the way for affordable decarbonization of the energy system and a robust clean energy economy.

"In many parts of the country, solar is already cheaper than coal and other fossil fuels, and with more innovation we can cut the cost again by more than half within the decade," said **Secretary of Energy Jennifer M. Granholm**. "This first burst of funding will help us add even more affordable clean energy to the grid, jobs to communities across the country, and will put us on the fast track toward President Biden's goal of 100% clean electricity by 2035."

Lowering the cost of solar energy is essential to accelerating deployment and achieving President Biden's goal of a 100% clean electricity grid by 2035. To reach that goal in the next 15 years, hundreds of gigawatts of solar energy need to be installed as much as five times faster than it is now. To that end, DOE is accelerating its utility-scale solar 2030 cost target by five years – setting a new goal of driving down the current cost of 4.6 cents per kilowatt-hour (kWh) to 3 cents/kWh by 2025 and 2 cents/kWh by 2030.

"To meet our bold zero emissions goals by 2035, we need to unleash major investment in solar energy and technologies," said **Senator Edward J. Markey**. "I am excited to see the Biden-Harris Administration and the Department of Energy grant the Massachusetts Institute of Technology (MIT) this research and development funding today to help the Commonwealth scale up our clean energy deployment and innovation. This funding will be a bright spot for the Massachusetts clean energy economy and will help us lower costs, create jobs, and deploy more gigawatts of solar than ever before."

"To combat climate change, America must put clean energy within the reach of every household. Today's grant awards support research and development projects that will make solar panels more affordable and effective," said **U.S. Senator Ben Ray Luján**. "I

applaud the Department of Energy for making this strong investment in our energy future."

"As Chairwoman of the House Science, Space, and Technology Committee, it is thrilling to see my constituents selected to advance technologies that will play a critical role in reducing greenhouse gas emissions from the electricity sector. Not only will these awards help the United States achieve the deep decarbonization needed to mitigate the growing impacts of climate change, but they will put many Americans in my district and around the country back to work in the midst of the COVID-19 pandemic," said **U.S. Representative Eddie Bernice Johnson, Chairwoman of the House Science, Space, and Technology Committee**.

Traditional solar panels convert sunlight into electrical energy using photovoltaic (PV) solar technologies, which by 2035 could represent between 30% and 50% of electricity supply in a decarbonized electricity sector. Funding announced today through DOE's Solar Energy Technologies Office (SETO) will support advancing two materials used to make solar cells: perovskites and cadmium telluride (CdTe) thin films.

- **$40 million for perovskite R&D**: Perovskites are a family of emerging solar materials that have potential to make highly efficient thin-film solar cells with very low production costs. DOE is awarding $40 million to 22 projects that will advance perovskite PV device and manufacturing research and development—as well as performance through the formation of a new $14 million testing center to provide neutral, independent validation of the performance of new perovskite devices.
- **$3 million Perovskite Startup Prize**: This new prize competition will speed entrepreneurs' path to commercializing perovskite technologies by providing seed capital for their newly formed companies.
- **$20 million for CdTe thin films**: The National Renewable Energy Laboratory will set up a consortium to advance cheaper CdTe thin-film solar technologies, which were developed in the United States and make up 20% of the modules installed in this country. This consortium will advance low-cost manufacturing techniques and domestic research capabilities to increase opportunities for U.S. workers and entrepreneurs to capture a larger portion of the $60 billion global solar manufacturing sector.

In addition, DOE announced $7 million as part of a new funding opportunity for projects to increase the lifetime of silicon-based PV systems from about 30 years to 50 years to lower the cost of energy and reduce waste. The aim is to improve PV system components, such as inverters, connectors, cables, racks, and trackers.

Today's announcement also supports several concentrating solar-thermal power (CSP) projects. Unlike PV technologies that directly convert sunlight into electricity, CSP captures heat from sunlight and uses that thermal energy to spin a turbine or power an engine that then generates electricity.

- **$33 million for CSP advances**: The new funding opportunity also includes funding for improvements to the reliability and performance of CSP plants, which can dispatch solar energy whenever it is needed; identifies new solar applications for industrial processes, which contribute 20% of U.S. carbon dioxide emissions;

and advances long-duration thermal-energy storage devices. Long-duration energy storage is critical to decarbonizing the electricity sector and couples well with CSP plants, but the cost must fall by a factor of two to unlock deployment.
- **$25 million to demonstrate a next-generation CSP power plant**: Sandia National Laboratories will receive funding to build a facility where researchers, developers, and manufacturers can test next-generation CSP components and systems and advance toward DOE's 2030 cost target of 5 cents/kWh for CSP plants.

Consistent with DOE's commitment to ensuring the benefits of federal funding reach diverse communities, applicants to the Perovskite Startup Prize and the PV/CSP funding opportunity must submit a Diversity and Inclusion Plan and propose measurable actions to increase the participation of underrepresented groups on their teams, in their research, and in the broader community.

Learn more about SETO and its research priorities in PV and CSP, and attend upcoming webinars on the open opportunities:

- SETO FY2021 PV/CSP Funding Opportunity Webinar – April 12, 2 p.m. ET
- Perovskite Startup Prize Webinar – April 13, 1 p.m. ET

CdTe Consortium – Sign up to receive email notifications

https://www.spa.gov.sa/viewfullstory.php?lang=en&newsid=2208375#2208375

HRH Crown Prince Announces: “The Saudi Green Initiative and The Middle East Green Initiative”

Saturday 1442/8/14 - 2021/03/27

Riyadh, March 27, 2021, SPA -- “The Saudi Green Initiative and The Middle East Green Initiative:“, the two initiatives that are to be launched soon, aim to chart a path for the Kingdom of Saudi Arabia and the region in protecting the planet, by clearly defining an ambitious road map that rallies the region and significantly contributes to achieving global targets in confronting climate change.

HRH the Crown Prince noted, as a leading global oil producer, the Kingdom fully recognizes its share of responsibility in advancing the fight against the climate crisis. Just as the Kingdom underpinned energy markets during the oil and gas era, it is going to become a global leader in forging a greener world.

HRH the Crown Prince added, The Kingdom and the region face significant climate challenges, such as desertification, an immediate economic risk to the Kingdom and the region (USD 13Bn is currently lost due to dust storms in the region every year), Air pollution from greenhouse gases also is estimated to have shortened average Saudi life expectancy by 1.5 years. We will work through The Saudi Green Initiative to raise vegetation cover, reduce carbon emissions, combat pollution & land degradation, and preserve marine life, this initiative will include a number of ambitious initiatives; most notably the planting of (10 billion) trees within the Kingdom in the upcoming decades, the equivalent to rehabilitating roughly (40 million) hectares of degraded lands, translating to a 12-fold increase from current tree covers, this represents the Kingdom‘s contribution of more than (4%) in achieving the goals of the global initiative to limit the degradation of lands and fungal habitats, and (1%) of the global target to plant (1 trillion) trees.

The Kingdom will also work to raise the percentage of protected areas to more than (30%) of its total land area, representing roughly (600,000) square kilometers, exceeding the current global target of (17%), in addition to launching a number of ambitious initiatives to protect Marine and Coastal Environments.

HRH the Crown Prince further added, the Saudi Green Initiative will also work to reduce carbon emissions by more than (4%) of global contributions, through an ambitious renewable energy program that will generate (50%) of the Kingdom’s energy from renewables by 2030, and several other projects in the fields of clean hydrocarbon technologies, estimated to eliminate more than (130 MT) of carbon emissions, alongside raising the rate of waste diversion from landfills to reach 94% in the Kingdom.

HRH Crown Prince Mohammed bin Salman further announced, whilst there is still a lot more to be

done, the Kingdom is determined to make a lasting global impact, we will start working on The Middle East Green Initiative in coordination with neighboring and sister countries of the Gulf Cooperation Council (GCC) states and Middle Eastern countries to plant an additional (40 billion) trees in the Middle East, This overall regional (50 billion) tree planting program is the largest reforestation program in the world, twice the size of the Great Green Wall in the Sahel (the second largest such regional initiative). This project, will restore an area equivalent to (200 million) hectares of degraded land, representing (5%) of the global target of planting (1 Trillion) trees and reducing (2.5%) of global carbon levels.

HRH further added, today the share of clean energy production in the Middle East doesn't exceed 7%, and technologies used in hydrocarbon production in the region are not efficient, therefore the Kingdom will work with regional partners to transfer our knowledge and share our experiences, which will contribute to reducing carbon emissions resulting from hydrocarbon production in the region by more than (60%), adding that these joint efforts and various other initiatives, will achieve a reduction in carbon emissions by more than (10%) of global contributions.

HRH the Crown Prince further highlighted that these two initiatives are a continuation of the environmental efforts in the Kingdom over the past few years in line with our Vision 2030, these two initiatives are a testimony of the Kingdom's serious desire to address the environmental challenges it has faced, from increase in temperatures and dust waves to low levels of rain and desertification, in this regard the Kingdom has carried out a comprehensive restructuring of the environmental sector, established The Environmental Special Forces in 2019, raised the percentage of natural reserves from (4%) to more than (14%) and increased vegetation cover by (40%) in the past 4 years, the kingdom was also able to achieve the most efficient levels of carbon emission of hydrocarbon producing countries, alongside other initiatives that have already started on the ground and resulted in tangible positive results for the environment. This is all part of the Kingdom's efforts to promote public health and raise quality of life for its citizens and residents.

HRH the Crown Prince noted, at a global level, these initiatives emanate from the Kingdom's leadership role towards common international issues, and a continuation of Kingdom's efforts to protect the planet during its presidency of the G20 summit last year, in which a dedicated environmental declaration was issued, concept of Circular Carbon Economy were adopted, and the first environmental taskforce was established, alongside the launching of two global initiatives to reduce land degradation and protection of coral reefs.

HRH Crown Prince Mohammed Bin Salman concluded his statement by saying: "I am proud to announce the Saudi and Middle East Green Initiatives, but this is only a start.

The Kingdom, the region and the world needs to go much further and faster in combatting climate change. Given our starting point, beginning this journey to a greener future has not been easy.

But in line with our overall modernization philosophy, we are not avoiding tough choices.

We reject the false choice between preserving the economy and protecting the environment.

Climate action will enhance competitiveness, spark innovation, and create millions of high-quality jobs. Young people, both in the Kingdom and the world, are demanding a cleaner, greener and more inclusive future, and we owe it to them to deliver on this.

And the Kingdom will work with all international partners to further develop these two initiatives and the various programs and timelines entailed in them.", noting that details of the Saudi Green Initiative are going to be announced in following next few months, and a global forum with international partners for the Middle East Green Initiative will be launched and held in the second quarter of next year.

--SPA

21:03 LOCAL TIME 18:03 GMT

https://www.scc-csc.ca/case-dossier/cb/2021/38663-38781-39116-eng.aspx

Reference re *Greenhouse Gas Pollution Pricing Act*

- Decision
- **Date**: March 25, 2021
- **Neutral Citation**: 2021 SCC 11
- **Breakdown of the decision**:
  - **Majority**: Chief Justice Richard Wagner found the Act constitutional (Justices Abella, Moldaver, Karakatsanis, Martin and Kasirer agreed)
  - **Dissenting in part**: Justice Suzanne Côté agreed with the majority's analysis that the subject matter of the Act could be of national concern and within Parliament's authority, but found the Act as drafted to be unconstitutional
  - **Dissenting**: Justice Russell Brown found that Parliament didn't have the authority to pass the legislation and found it unconstitutional; he agreed with Justice Rowe's reasons
  - **Dissenting**: Justice Malcolm Rowe said the national concern doctrine refers to a residual power of last resort of Parliament and agreed with Justice Brown's reasons; he found the Act unconstitutional
- On appeal from the Court of Appeal for Saskatchewan, the Court of Appeal for Ontario and the Court of Appeal of Alberta
- Case information (38663, 38781, 39116)
- Webcast of hearing
- **Lower court rulings**:
  - **38663 (Saskatchewan)**
    - Reference (Court of Appeal for Saskatchewan)
  - **38781 (Ontario)**
    - Reference (Court of Appeal for Ontario)
  - **39116 (Alberta)**
    - Reference (Court of Appeal of Alberta)

- **Explore the Court**
  - Judges of the Court
  - Role of the Court
  - Visit the Court

The Supreme Court of Canada rules the federal carbon pricing law is constitutional.

Parliament passed the *Greenhouse Gas Pollution Pricing Act* in 2018, based on the consensus that greenhouse gas emissions contribute to global climate change. Countries around the world committed to drastically reduce their greenhouse gas emissions under the 2015 Paris Agreement. In Canada, the federal government passed the Act to implement its commitments.

Specifically, the law required provinces and territories to implement carbon gas pricing systems by January 1, 2019 or adopt one imposed by the federal government.

Why is the federal Act constitutional?

Chief Justice Richard Wagner wrote for the majority of the judges, which found the Act to be constitutional. They noted that global warming causes harm beyond provincial boundaries and that it is a matter of national concern under the *"peace, order and good government"* clause of the Constitution.

The majority noted the Act would only apply where provincial or territorial pricing systems are not strict enough to reduce global warming.

A rarely applied doctrine of Canadian constitutional law

The majority noted that national concern is a well-established but rarely applied doctrine of Canadian constitutional law. The application of this doctrine is strictly limited in order to maintain the autonomy of the provinces and respect the diversity of confederation. However, the federal government has the authority to act in appropriate cases, where there is a matter of genuine national concern and where the recognition of that matter is consistent with the division of powers.

Federalism

The Constitution divides federal and provincial powers. The majority of judges observed that Canada, which has a federal system of governance, requires a balance between federal and provincial powers. They recalled that this concept, known as federalism, is a foundational principle of Canada's Constitution.

Not a tax

The majority noted that the term "carbon tax" is often used to describe the pricing of carbon emissions. However, they said this has nothing to do with the concept of taxation, as understood in the constitutional context. As such, they also concluded that the fuel and excess emission charges imposed by the Act were constitutionally valid regulatory charges and not taxes.

How did the case get to the Supreme Court?

Three provinces – Saskatchewan, Ontario and Alberta – challenged the constitutionality of the Act by referring the legislation to their respective courts of appeal. The courts of appeal for Saskatchewan and Ontario found the Act constitutional, while the Alberta Court of Appeal found it unconstitutional.

The question for the Supreme Court was whether the federal government had the authority to pass such a law that puts a price on carbon.

What were the main arguments?

The provinces said they had their own climate policies, tailored to their own circumstances. They also argued that they have jurisdiction over natural resources.

For its part, the federal government argued that it has the authority to address issues that are national in scope. It also maintained that the law was a backstop (or safety net) to ensure minimum carbon pricing standards across the country.

Climate change is real

The Supreme Court also pointed out that all of the parties agree that global climate change is real. It's caused by greenhouse gas emissions resulting from human activities and it poses a grave threat to the future of humanity.

Cases in Brief are prepared by communications staff of the Supreme Court of Canada to help the public better understand Court decisions. They do not form part of the Court's reasons for judgment and are not for use in legal proceedings.

https://www.api.org/news-policy-and-issues/news/2021/03/24/climate-action-framework

API Outlines Path For Low-Carbon Future In New Climate Action Framework

202.682.8114 | press@api.org

Industry Endorses Carbon Pricing; Supports Policies To Unleash Technology And Innovation

WASHINGTON, March 25, 2021 – The American Petroleum Institute (API) today released a robust policy framework of industry and government actions to address the risks of climate change while meeting the world's long-term energy needs. Ahead of the 26th Conference of the Parties (COP26), API shared analysis, initiatives and policy solutions to build on the progress the U.S. has made in driving emissions to generational lows, including accelerating technology and innovation; further mitigating emissions from operations; endorsing a carbon price policy; advancing cleaner fuels and driving climate reporting.

"Confronting the challenge of climate change and building a lower-carbon future will require a combination of government policies, industry initiatives and continuous innovation," API President and CEO Mike Sommers said. "America has made significant progress in reducing emissions to generational lows, but there's more work to do, and there's nobody better equipped to drive further progress than the people who solve some of the world's toughest energy problems every day. As our industry accelerates efforts to advance groundbreaking technologies, reduce emissions and drive transparent and consistent climate reporting, we urge lawmakers to support market-based policies that foster innovation, including carbon pricing."

API and its members support climate actions in the following five areas:

Accelerate Technology and Innovation *to reduce emissions while meeting growing energy needs.*

- Fast-track the commercial deployment of carbon capture, utilization and storage (CCUS).
- Advance hydrogen technology, innovation and infrastructure.
- Advocate for the full appropriations of funds for research, development and deployment (RD&D) programs authorized in the bipartisan Energy Act of 2020.

Further Mitigate Emissions from Operations *to accelerate environmental progress.*

- Advance direct regulation of methane from new and existing sources.
- Develop a refinery carbon reduction program for API member companies.
- Deliver flaring reduction results as part of The Environmental Partnership's flare management program.

Endorse a Carbon Price Policy *to drive economy-wide, market-based solutions.*

- Advocate for sensible legislation that prices carbon across all economic sectors while avoiding regulatory duplication.

Advance Cleaner Fuels *to provide lower-carbon choices for consumers.*

- Develop markets for differentiated U.S. natural gas.
- Support policies to advance lower-carbon electricity.
- Reduce lifecycle emissions in the transportation sector.

Drive Climate Reporting *to provide consistency and transparency.*

- Expand ESG reporting guidance for the natural gas and oil industry.
- Develop a concise, minimum template of core greenhouse gas emissions indicators providing relevant information and enhancing consistency and comparability in reporting.
- Build on API compendium of GHG emissions methodologies for the natural gas and oil industry.

Read API's climate action framework here and a fact sheet here.

API represents all segments of America's natural gas and oil industry, which supports more than ten million U.S. jobs and is backed by a growing grassroots movement of millions of Americans. Our 600 members produce, process and distribute the majority of the nation's energy, and participate in ***API Energy Excellence***, which is accelerating environmental and safety progress by fostering new technologies and transparent reporting. API was formed in 1919 as a standards-setting organization and has developed more than 700 standards to enhance operational and environmental safety, efficiency and sustainability.

https://www.wsj.com/articles/oil-lobby-backs-climate-action-plan-11616688013

Oil Lobby Backs Climate Action Plan

‘Climate change is real,’ American Petroleum Institute head Mike Sommers says

The American Petroleum Institute’s plan supports a price on carbon dioxide that every emitter must pay.
PHOTO: KAREN FOCHT/ZUMA PRESS

By
Timothy Puko
March 25, 2021 12:00 pm ET

WASHINGTON—The oil industry’s top lobbying group will push Congress for legislation to price carbon emissions across the economy, in a sharp policy turnabout a decade after the industry helped kill a similar effort to address climate change.

The board of directors of the American Petroleum Institute, one of Washington’s most powerful trade associations, which for years worked to play down the impact of climate change, on Thursday approved a “climate action framework,” a wide-sweeping plan to lower the emissions blamed for global warming.

It backs increasing government and industry collaboration, seeking to preserve a role for oil companies to solve a problem it says requires “continuous innovation.”

The plan supports a price on carbon dioxide that every emitter must pay, but doesn’t back any specific type of plan such as a tax. It also supports more federal research funding, federal regulation on methane emissions and improved industry efforts to track and reduce emissions, among other measures.

The Wall Street Journal first reported this month that the group was poised to approve such a plan in the face of new Democratic leadership in Washington that has pledged to address climate change.
Big member companies at API—especially the Europe-based supermajors—also have been demanding the group do more to address climate change as they face their own pressure from political leaders, investors and environmental activists.

Mike Sommers, the group’s president and chief executive, said its decision to endorse carbon pricing reflects a change in circumstances. U.S. emissions have fallen since API’s past opposition

to carbon pricing, he said, and the U.S. now needs further market incentives to spur innovation to sustain that progress.

“As things have continued to evolve, we know that more needs to be done,” Mr. Sommers said. “We also know that climate change is real and we need to do more to address one of the marquee issues of our time.”

‘As things have continued to evolve, we know that more needs to be done,’ said API head Mike Sommers. PHOTO: API/ASSOCIATED PRESS

Putting a price on carbon—either by directly taxing emissions or through other rules—aims to discourage the emissions that come from burning fossil fuels for energy. It creates market incentives for everyone to be more efficient by raising the cost of polluting, costs that would get passed down to consumers though more-expensive gasoline and electricity, and potentially consumer goods.

But that effect on consumers has long made the idea politically unpopular in Washington, where API’s plan will now face high hurdles and deep skepticism. Even as the idea of taxing emissions has gained support among the business community in recent years, it has lost momentum among the environmentalists and Democrats who once supported it.

Many now question its efficacy and reach, noting that global emissions continued to rise even while some markets have deployed carbon-pricing schemes. Some liberals also say it disproportionately hurts poor and minority communities that are often home to heavy industry by giving de facto permission for polluters to keep polluting—as long as they pay for it.

House Democrats released a major climate bill earlier this month that omitted carbon-pricing rules in favor of a clean-energy standard, another type of market-based system with broad requirements for electricity from zero-emissions sources.

President Biden’s platform as a candidate said trillions of dollars in infrastructure spending and more stringent environmental regulations were the best strategy for lowering emissions.

Conversely, API’s plan seeks to cut regulations that might become duplicative, a common policy business groups and conservatives have often paired with carbon-tax proposals.

The API plan also pushes for more industry coordination to prove that U.S. natural gas produces fewer emissions than natural gas from other sources, and to increase exports of that gas abroad.

Many believe their advocacy in 2009 for creating a cap-and-trade system for emissions contributed to Democrats losing control of Congress in the next year's elections.

The API was one of the lead opponents, urging its member companies to help kill the landmark Waxman-Markey bill in the Senate. It orchestrated rallies with more than 3,000 oil-company employees wearing T-shirts with slogans like "Higher energy taxes wipe out American jobs." Mr. Sommers, who joined the organization in 2018, declined to say whether the group would deploy similar tactics now in support of carbon pricing. He said API's efforts would focus on engaging with lawmakers who want to solve climate change, including Mr. Biden and his staff. "What we're seeking to do here is build a middle ground for policy makers," Mr. Sommers said. "This is going to be a full-throated advocacy effort using all the tools at API's disposal."

Related Video

https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/26/president-biden-invites-40-world-leaders-to-leaders-summit-on-climate/

President Biden Invites 40 World Leaders to Leaders Summit on Climate

MARCH 26, 2021 • STATEMENTS AND RELEASES

Today, President Biden invited 40 world leaders to the Leaders Summit on Climate he will host on April 22 and 23. The virtual Leaders Summit will be live streamed for public viewing.

President Biden took action his first day in office to return the United States to the Paris Agreement. Days later, on January 27, he announced that he would soon convene a leaders summit to galvanize efforts by the major economies to tackle the climate crisis.

The Leaders Summit on Climate will underscore the urgency – and the economic benefits – of stronger climate action. It will be a key milestone on the road to the United Nations Climate Change Conference (COP26) this November in Glasgow.

In recent years, scientists have underscored the need to limit planetary warming to 1.5 degrees Celsius in order to stave off the worst impacts of climate change. A key goal of both the Leaders Summit and COP26 will be to catalyze efforts that keep that 1.5-degree goal within reach. The Summit will also highlight examples of how enhanced climate ambition will create good paying jobs, advance innovative technologies, and help vulnerable countries adapt to climate impacts.

By the time of the Summit, the United States will announce an ambitious 2030 emissions target as its new Nationally Determined Contribution under the Paris Agreement. In his invitation, the President urged leaders to use the Summit as an opportunity to outline how their countries also will contribute to stronger climate ambition.

The Summit will reconvene the U.S.-led Major Economies Forum on Energy and Climate, which brings together 17 countries responsible for approximately 80 percent of global emissions and global GDP. The President also invited the heads of other countries that are demonstrating strong climate leadership, are especially vulnerable to climate impacts, or are charting innovative pathways to a net-zero economy. A small number of business and civil society leaders will also participate in the Summit.

Key themes of the Summit will include:

- Galvanizing efforts by the world's major economies to reduce emissions during this critical decade to keep a limit to warming of 1.5 degree Celsius within reach.
- Mobilizing public and private sector finance to drive the net-zero transition and to help vulnerable countries cope with climate impacts.
- The economic benefits of climate action, with a strong emphasis on job creation, and the importance of ensuring all communities and workers benefit from the transition to a new clean energy economy.
- Spurring transformational technologies that can help reduce emissions and adapt to climate change, while also creating enormous new economic opportunities and building the industries of the future.
- Showcasing subnational and non-state actors that are committed to green recovery and an equitable vision for limiting warming to 1.5 degree Celsius, and are working closely with national governments to advance ambition and resilience.
- Discussing opportunities to strengthen capacity to protect lives and livelihoods from the impacts of climate change, address the global security challenges posed by climate change and the impact on readiness, and address the role of nature-based solutions in achieving net zero by 2050 goals.

Further details on the Summit agenda, additional participants, media access, and public viewing will be provided in the coming weeks.

The President invited the following leaders to participate in the Summit:

- Prime Minister Gaston Browne, Antigua and Barbuda
- President Alberto Fernandez, Argentina
- Prime Minister Scott Morrison, Australia
- Prime Minister Sheikh Hasina, Bangladesh

- Prime Minister Lotay Tshering, Bhutan
- President Jair Bolsonaro, Brazil
- Prime Minister Justin Trudeau, Canada
- President Sebastián Piñera, Chile
- President Xi Jinping, People's Republic of China
- President Iván Duque Márquez, Colombia
- President Félix Tshisekedi, Democratic Republic of the Congo
- Prime Minister Mette Frederiksen, Denmark
- President Ursula von der Leyen, European Commission
- President Charles Michel, European Council
- President Emmanuel Macron, France
- President Ali Bongo Ondimba, Gabon
- Chancellor Angela Merkel, Germany
- Prime Minister Narendra Modi, India
- President Joko Widodo, Indonesia
- Prime Minister Benjamin Netanyahu, Israel
- Prime Minister Mario Draghi, Italy
- Prime Minister Andrew Holness, Jamaica
- Prime Minister Yoshihide Suga, Japan
- President Uhuru Kenyatta, Kenya
- President David Kabua, Republic of the Marshall Islands
- President Andrés Manuel López Obrador, Mexico
- Prime Minister Jacinda Ardern, New Zealand
- President Muhammadu Buhari, Nigeria
- Prime Minister Erna Solberg, Norway
- President Andrzej Duda, Poland
- President Moon Jae-in, Republic of Korea
- President Vladimir Putin, The Russian Federation
- King Salman bin Abdulaziz Al Saud, Kingdom of Saudi Arabia
- Prime Minister Lee Hsien Loong, Singapore
- President Matamela Cyril Ramaphosa, South Africa
- Prime Minister Pedro Sánchez, Spain
- President Recep Tayyip Erdoğan, Turkey
- President Sheikh Khalifa bin Zayed Al Nahyan, United Arab Emirates
- Prime Minister Boris Johnson, United Kingdom
- President Nguyễn Phú Trọng, Vietnam

Bloomberg @TheTerminal
Russia Wants to Use a Forest Bigger Than India to Offset Carbon (2)
2021-03-25 09:33:49.725 GMT

By Dina Khrennikova, Laura Millan Lombrana and Ilya Arkhipov
(Bloomberg) -- Much of Russia's Far East is so vast and remote that it's mostly been left to the bears, wolves and rare breed of tiger that live there. Now the Kremlin wants to use it to convince the world that the country is doing its part to fight climate change.
Russia, the world's biggest energy exporter and one of its largest polluters, is creating a digital platform to collect satellite and drone data about the CO_2 absorption capacity of the region's forests. The aim ostensibly is to monetize an area nearly twice the size of India by turning it into a marketplace for companies to offset their carbon footprint.
The hope is that the plan will also deflect some of the criticism Moscow is getting over its unambitious climate efforts ahead of United Nations talks later this year. Russia has long argued that it should be granted more slack in climate talks for the sequestration potential of its forests, which hold an estimated 640 billion trees. But until now the huge taiga has been poorly managed, leading to record forest fires in the past two years as global warming has made summers hotter and dryer.
"Russia has 20% of global forests, so the international community must be fair in that respect," Alexey Chekunkov, minister for the development of the Russian Far East and Arctic said in an interview. "We have the potential to turn them into a massive carbon capture hub."

Under the system, companies would be able to lease sections of forest from the Russian government in order to invest in planting new trees and protecting what's already there. If the data confirms that the investment has improved CO_2 absorption, the company could then create a carbon credit, which would be traded on a digital platform.
Russia's managed forests are estimated to have absorbed nearly 620 million tons of CO_2 equivalent in 2018, according to the nation's latest data, enough to offset around 38% of national emissions. But carbon offsetting schemes have faced criticism from scientists who warn that, to avoid catastrophic global warming, greenhouse gas emissions need to be cut in half globally by the end of this decade, and to zero by 2050. Fern, a campaign group based in Brussels and the U.K., likened offsetting to "moving deckchairs while the Titanic sinks."

It took Russia four years to ratify the 2015 Paris Climate Agreement in which countries agreed to cut emissions to limit global warming to 1.5 degrees Celsius or below 2 degrees. It may be a particularly hard sell from Russia, which has the weakest climate target of any major economy and is planning a slight increase in emissions by 2030. Canada, which has the world's third-largest forest area and an economy largely based on fossil fuel extraction, is also setting up a marketplace to trade carbon credits, but the system will run

alongside efforts to achieve carbon neutrality by mid-century.
“The lion’s share of Russia’s plan to cut emissions should be renewable energy, new technology and energy efficiency,” said Alexey Kokorin, director of the Climate and Energy Program at WWF Russia. “Additionally, and with very strict criteria, would come forestry development.”
Russia’s climate goals, which are rated “critically insufficient” by Climate Action Tracker, mean it wouldn’t qualify to use carbon offsets as part of its Paris Agreement target, according to Anna Romanovskaya, director of the Moscow-based Yu. A. Izrael Institute of Global Climate and Ecology. But companies could in theory still sell credits internationally if they can prove they’ve added to the forest’s absorption capacity, she said.

State-controlled oil and gas giant Gazprom Neft PJSC, petrochemical producer Sibur Holding PAO, and machine manufacturer Sinara Group have expressed interest in investing in future pilot projects for measuring forest carbon absorption, Valery Falkov, minister for science and higher education, told President Vladimir Putin at a meeting earlier this month.
The Far East project may mitigate losses from a European Union plan to impose a levy on some emissions-intensive goods, according to Maxim Khudalov, head of sustainable development risk assessment at Moscow-based Acra Ratings. Exporters of Russian raw materials forecast annual additional costs of as much as $8 billion from the so-called Carbon Border Adjustment Mechanism, due to come into force in 2023.
Obtaining accurate data on carbon sequestration from forests is difficult, though, because trees are vulnerable to unpredictable events like forest fires and disease outbreaks. It also requires detailed inventory data, which on average hasn’t been updated in Russia in 25 years, Romanovskaya said. Offset programs based on planting trees have come under criticism after many were found to have no contribution to reducing the amount of CO_2 in the atmosphere.
“We will need to demonstrate to the international community that calculation of CO_2 absorption in our offset projects is precise, reliable and not a single unit is miscalculated,” Romanovskaya said. “One mistake, let alone an intentional falsification, and the credibility of our projects may be lost.”

--With assistance from Sharon Chen.

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IFIC Monthly Investment Fund Statistics – February 2021

Mutual Fund and Exchange-Traded Fund Assets and Sales

March 19, 2021 (Toronto) – The Investment Funds Institute of Canada (IFIC) today announced investment fund net sales and net assets for February 2021.

Mutual fund assets totalled $1.81 trillion at the end of February 2021. Assets increased by $34.8 billion or 2.0% compared to January 2021. Mutual funds recorded net sales of $17.5 billion in February 2021.

ETF assets totalled $269.2 billion at the end of February 2021. Assets increased by $9.4 billion or 3.6% compared to January 2021. ETFs recorded net sales of $5.8 billion in February 2021.

Mutual Fund Net Sales/Net Redemptions ($ Millions)*

Asset Class	Feb. 2021	Jan. 2021	Feb. 2020	YTD 2021	YTD 2020
Long-term Funds					
Balanced	8,745	4,980	3,519	13,726	6,015
Equity	6,490	4,218	318	10,707	750
Bond	2,482	3,096	2,873	5,578	5,651
Specialty	779	577	722	1,357	1,243
Total Long-term Funds	18,497	12,871	7,431	31,368	13,659
Total Money Market Funds	(957)	(1,485)	730	(2,442)	475
Total	17,540	11,386	8,161	28,926	14,134

Mutual Fund Net Assets ($ Billions)*

Asset Class	Feb. 2021	Jan. 2021	Feb. 2020	Dec. 2020
Long-term Funds				
Balanced	889.0	874.8	812.7	874.4
Equity	608.6	588.4	506.6	593.4
Bond	245.2	245.1	227.1	246.4
Specialty	35.8	34.5	27.8	35.0
Total Long-term Funds	1,778.5	1,742.8	1,574.2	1,749.3
Total Money Market Funds	31.4	32.4	32.1	34.4
Total	1,809.9	1,775.1	1,606.3	1,783.7

* Please see below for important information regarding this data.

ETF Net Sales/Net Redemptions ($ Millions)*

Asset Class	Feb. 2021	Jan. 2021	Feb. 2020	YTD 2021	YTD 2020
Long-term Funds					
Balanced	477	495	264	972	574
Equity	3,471	2,178	4,911	5,648	6,212
Bond	1,172	1,309	2,845	2,481	4,312
Specialty	876	58	43	934	196
Total Long-term Funds	5,996	4,040	8,063	10,035	11,295
Total Money Market Funds	(230)	(25)	443	(255)	900
Total	5,766	4,014	8,506	9,780	12,195

ETF Net Assets ($ Billions)*

Asset Class	Feb. 2021	Jan. 2021	Feb. 2020	Dec. 2020
Long-term Funds				
Balanced	8.3	7.7	5.3	7.2
Equity	167.7	159.5	124.6	158.4
Bond	80.2	80.1	71.2	79.3
Specialty	6.0	5.2	3.8	5.2
Total Long-term Funds	262.2	252.6	204.9	250.1
Total Money Market Funds	7.0	7.2	5.4	7.3
Total	269.2	259.8	210.3	257.3

* Please see below for important information regarding this data.

IFIC direct survey data (which accounts for approximately 91% of total mutual fund industry assets) is complemented by data from Investor Economics to provide comprehensive industry totals.

IFIC makes every effort to verify the accuracy, currency and completeness of the information; however, IFIC does not guarantee, warrant, represent or undertake that the information provided is correct, accurate or current.

*** Important Information Regarding Investment Fund Data:**

1. Mutual fund data is adjusted to remove double counting arising from mutual funds that invest in other mutual funds.
2. ETF data is not adjusted to remove double counting arising from ETFs that invest in other ETFs.
3. The Balanced Funds category includes funds that invest directly in a mix of stocks and bonds or obtain exposure through investing in other funds.
4. Mutual fund data reflects the investment activity of Canadian retail investors.
5. ETF data reflects the investment activity of Canadian retail and institutional investors.

About IFIC

The Investment Funds Institute of Canada is the voice of Canada’s investment funds industry. IFIC brings together 150 organizations, including fund managers, distributors and industry service organizations, to foster a strong, stable investment sector where investors can realize their financial goals. By connecting Canada’s savers to Canada’s economy, our industry contributes significantly to Canadian economic growth and job creation. To learn more about IFIC, please visit www.ific.ca.

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https://www.bnnbloomberg.ca/i-stubbornly-didn-t-die-canadian-tech-investor-john-ruffolo-s-recovery-from-near-fatal-cycling-ac-1.1579546
Mar 19, 2021

'I stubbornly didn't die': Canadian tech investor John Ruffolo's recovery from near-fatal accident

By **Jon Erlichman**

Now Showing

14:27

'Who cares that I can't walk': Canadian investor Ruffolo reflects...

Jon Erlichman
Anchor
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Six months ago, doctors were fearing for John Ruffolo's life after the famed Canadian tech investor was struck in a devastating cycling accident that nearly killed him. Now, after a remarkable recovery, he's launching a US$500-million growth-stage private equity fund that he hopes will nurture the next crop of world-beating upstarts in this country.

The fund's launch had already been delayed by the COVID-19 pandemic last year, when the 54-year old Ruffolo — an avid cyclist — was struck by a jackknifing transport truck while riding his bike in Markham, Ont. on Wednesday, September 2nd.

The accident left him paralyzed from the waist down.

"I was lucky to be alive," said Ruffolo, founder and managing partner of Maverix Private Equity, in an interview.

"I shattered my spine. I split my pelvis in half. I broke every rib in multiple places. I lost a kidney, a lung, and a lot of blood."

Because of the internal bleeding, Ruffolo needed a blood infusion measuring half of his entire blood count.

X-Ray of John Ruffolo's spine following the accident. (*Courtesy of John Ruffolo*)

"When I first arrived at Sunnybrook Hospital, they did not want to operate on me because there was a concern that surgery would kill me due to the massive trauma."

Ruffolo's situation was so grave that doctors waited a day and a half for his condition to improve before performing surgery.

"I was told that when I didn't pass away after 36 hours, they were required to perform surgery — and that there was a possibility I could die on the operating table."

It was more than a week before Ruffolo was lucid enough to review some of the 10,000 messages of condolences he received. It was only at that point he came to fully recognize his brush with death.

"I stubbornly didn't die," said Ruffolo, who is known in the business community for his passion and resilience. "I feel very blessed."

While his initial prognosis suggested he would not walk again, he made quick progress in his rehabilitation.

Within two weeks of the accident, he started to notice feeling returning to his legs. Today, Ruffolo says the sensory level in his legs has reached 80 per cent and he has 50 per cent mobility. “The parts of my legs that turned on are the cycling muscles,” he said.
In fact, Ruffolo credits his cycling regime prior to the accident for helping him survive.
“Because of the pandemic, I had time to take long bike rides every Wednesday. I was the fittest I had been in years. So in many respects, COVID saved my life.”
Ruffolo’s road to recovery has been intense. Each week brings 20 hours of grueling rehab.
By the end of October, Ruffolo was feeling well enough to begin re-connecting with Maverix’s potential investors while he continued with his recovery at Toronto Rehab’s Lyndhurst Centre, which treats people with spinal cord injuries.
“People were shocked by the strength of my voice on the phone. They said, ‘You sound so normal,’” Ruffolo said with a laugh. “Then they would ask me if I was calling them from my hospital bed. I said, ‘Yes, I’m on my back.’ Everyone said the same thing, ‘Get better and we will be here to fund you.’”

'30 YEARS GEARING UP FOR THIS MOMENT'

All of the money Maverix has raised for the fund has been from Canadian investors including leading institutions, pension funds and family offices -- largely based on Ruffolo’s investing track record. Those investors include CIBC, BMO, Mattamy Asset Management and several leading pension funds.
“We wanted to build this Team Canada concept, where we gather the greatest individuals in this country who will gather around us and help those next up-and-comers,” said Ruffolo. “I’ve spent 30 years gearing up for this moment.”

In 2011, he founded OMERS Ventures — the venture capital arm of the large Ontario pension fund. He led early investments in startup success stories such as Shopify Inc. before leaving in 2018. He has also championed Canada's technology industry as a co-founder of the Council of Canadian Innovators, along with former Research in Motion co-CEO Jim Balsillie.

"Shopify is a company that was built in Canada and largely funded by Canadian entities," said Ruffolo. "What we are missing as a nation is 10 or 20 Shopifys to really lead us. And you need the component pieces to support that."

Growth-stage private equity is an investment category that fits between early-stage venture capital and private equity buyouts of mature businesses.

> "Everyone said the same thing, 'Get better and we will be here to fund you.'"
>
> John Ruffolo

Maverix, whose leadership team also includes former Canaccord Genuity Group Inc. President Mark Maybank, is targeting companies that seek to remain private as they grow a worldwide footprint. Ruffolo noted that's an investment category that is sorely needed in Canada.

"Some in the financial community said, 'You're starting off too big; why not raise a bit of money and build first,'" he said. "My response was that the fund was predicated on the whole ecosystem we're trying to fill: companies that are seeking to become billion-dollar businesses."

Maverix has established an advisory board of top entrepreneurs who will also assist the fund's portfolio companies with scaling their businesses, including high-profile investor Arlene Dickinson, Toronto Raptors Founder John Bitove, Mattamy Homes Founder Peter Gilgan, Canada Goose CEO Dani Reiss and Balsillie.

"We are very ambitious on what we want to build. The only way to do that is to draw in people who have that like-minded ambition," said Ruffolo.

"They really believe we are filling a hole that doesn't exist in this country. And they are keen to provide the mentoring and coaching to help share the mistakes they've made."

Maverix will invest in companies disrupting sectors such as retail, healthcare, transportation and financial services.

In preparing for the fund's launch, Ruffolo received a helping hand from many supporters in his life, including members of his Toronto-based cycling club "Les Domestiques", who assisted with everything from insurance needs to food and household matters.

"It took a community to save me," Ruffolo said. "I would not be where I am today without the unbelievable number of folks that came to help in a variety of ways."

As Ruffolo continues with his recovery, he hopes to one day cycle again.

His wife, Carryn, even had the word "Specialized" — the bike brand he rides — placed on the side of his wheelchair.

"I think about riding every single day. That's my ultimate goal. I'm not going to let being run over change my life. I just refuse to."

Characteristics of businesses that closed during the COVID-19 pandemic in 2020

by Danny Leung

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Abstract

This article compares the characteristics of employer businesses that were closed by September 2020 and remained closed as of November 2020 with those of employer businesses that were active before the onset of the COVID-19 pandemic in February 2020. Characteristics related to the risk of closure are examined, such as business size, age, indebtedness, liquidity and profitability. Based on these characteristics, the risk of closure is estimated for each business. It is found that recently closed businesses are more likely to have a lower estimated risk of closure than those that closed earlier in the pandemic. This suggests that even larger businesses with stronger financial characteristics (based on pre-pandemic financial statements) could be at risk of closing as the pandemic continues.

Author

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Acknowledgements

The author would like to thank Mark Brown, Amélie Lafrance-Cooke, Ryan Kelly and Phillipe Marceau for their helpful comments.

Introduction

The COVID-19 pandemic has had a large impact on Canadian businesses. The Canadian Survey on Business Conditions conducted in September and October 2020 found that almost two-thirds of businesses had laid off half or more of their workforce since the beginning of the pandemic; roughly one-third did not know how much longer they could operate before more staff cuts or closure had to be considered if demand did not recover. This raises the question of what these firms are and whether they differ from those that closed early on in the pandemic.

A large number of businesses closed at the onset of the pandemic. New experimental estimates of monthly business openings and closures[1] show that in April 2020 alone, more than 100,000 employer businesses (13.6% of active employer businesses in February) closed. These business closures contributed to 30% of job losses that month.[2] Although many businesses have reopened and the pace of closures has slowed, there were still 5.2% fewer active employer businesses in the economy in September 2020 compared with February 2020.

Neither the Canadian Survey on Business Conditions nor the statistics on business openings and closures provide information on the characteristics of businesses that have closed. Using new data on closures linked to administrative data on the past financial positions of firms, this article compares the characteristics of businesses that were active in February 2020 with the subpopulation that were closed by September 2020 and remained closed as of November 2020.[3] It also examines how the pre-pandemic characteristics of closed businesses vary depending on when those firms were last active.

This paper complements the work of Fortier-Labonté (2021) that tracks the number of businesses filing for insolvency as well as their financial position before the pandemic. Only a fraction of businesses that close file for insolvency. While corporate insolvencies are measured in the hundreds per quarter, business closures are measured in the thousands per month.

Roughly 100,000 businesses that were active in February 2020 were closed by September and remained closed as of November. They tended to be younger and have fewer employees, less assets, more debt (measured by debt-to-asset ratio) and less liquidity (measured by current-asset-to-current-liabilities ratio), and were less profitable (measured by return on assets and profit margins) than all active businesses in February 2020. Given the many dimensions by which to measure a business's ability to weather the pandemic, the article develops a summary measure of the risk of closure. Businesses that closed at the onset of the pandemic were more likely to have a higher risk of closure than businesses that closed more recently, in September. This finding highlights the possibility that stronger businesses may close as the pandemic continues.

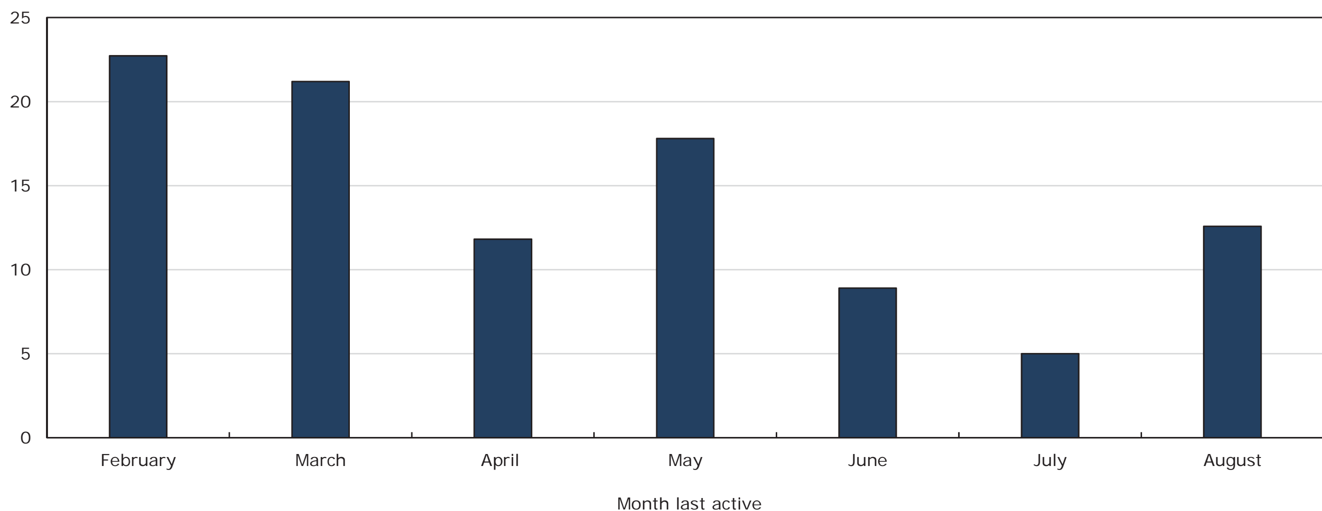
1. In the experimental estimates, openings are defined as businesses with employment in the current month and no employment in the previous month, while closures are defined as businesses that had employment in the previous month but no employment in the current month. See Lafrance-Cooke, Macdonald and Willox (2020) for more details.
2. See Lafrance-Cooke (2021).
3. At the time of writing, November 2020 data were the latest available.

Characteristics of closed businesses

According to the data that underlie the estimates of monthly openings and closures, roughly 12% of businesses that were active in February 2020 were closed by September 2020 and remained closed as of November 2020.[4] Many of these closures occurred in the first two months of the pandemic (Chart 1). Of the businesses that were active in February but closed by September and remained closed as of November, 22.7% were last active in February and another 21.2% were last active in March. The rate of closures diminished over the summer, as only 5.0% of businesses that were closed by September were last active in July. Heading into the fall, this share increased again, with 12.6% of businesses closed by September being last active in August.[5]

Compared with all active employer businesses in February 2020, those that were closed by September and remained closed as of November are different in many respects. Businesses that were closed by September were more likely to be recent entrants that started employing workers in 2019 or in the first two months of 2020 (Table 1). Of the businesses that were closed by September, 31.4% were recent entrants, compared with 11.4% for all businesses. Businesses that were closed by September were also much smaller in terms of number of employees, at 28.9% the employment size of all active businesses.

Chart 1
Distribution of closed businesses[1] by month last active



1. Active businesses in February 2020 that were closed by September 2020 and remained closed as of November 2020.
Source: Statistics Canada, author's calculations.

The financial characteristics of businesses can be compared by linking data on openings and closures to administrative data on business financials from 2018. Businesses that were closed by September 2020 were not only smaller in employment size than all active businesses in February 2020, they also had a smaller asset size. The median asset size of businesses that were closed by September was 38.0% of the median asset size of all active businesses in February. Regarding financial position, businesses that were closed by September were more indebted (higher median debt-to-asset ratio—0.78 compared with

4. The numbers in this article cannot be compared directly with the estimates of monthly business openings and closures because the article focuses on the cohort of businesses that were active in February 2020. See Data and methodology section for more details.
5. Seasonal businesses are identified and omitted from the calculation of these results. See Data and methodology section for more details.

0.59) and less profitable (lower return on assets[6]—0.05 compared with 0.10—as well as lower profit margin[7]—0.03 compared with 0.06) and had less liquidity (lower current ratio[8]—1.50 compared with 1.80).

The characteristics of businesses that were closed by September differed depending on when they were last active. Compared with businesses that were last active in August, businesses that closed in March 2020 and remained closed had lower average employment (3.7 versus 4.9), a smaller median asset size ($99,00 compared with $163,100), a higher debt-to-asset ratio (0.77 versus 0.66), a lower return on assets (0.06 versus 0.08) and a lower current ratio (1.49 versus 1.68).

Table 1
Characteristics[1] of all businesses that were active in February 2020 and those closed by September[2]

		Businesses closed by September		
	All	All	Last active in March	Last active in August
		percent		
Entrant	11.4	31.4	34.4	29.0
		employees per business		
Average employment	16.3	4.7	3.7	4.9
		ratio		
Median debt-to-asset ratio	0.594	0.779	0.773	0.662
Median return on assets	0.099	0.052	0.056	0.077
Median profit margin	0.056	0.031	0.037	0.046
Median current ratio	1.799	1.501	1.490	1.680
		dollars		
Median assets	346,000	132,000	99,000	163,000

1. Entrant status and employment size of businesses are calculated using information up to 2020, w hile the financial variables are from 2018.

2. Closed by September 2020 and remained closed as of November 2020.

Source: Statistics Canada, author's calculations.

Business characteristics and the probability of closure

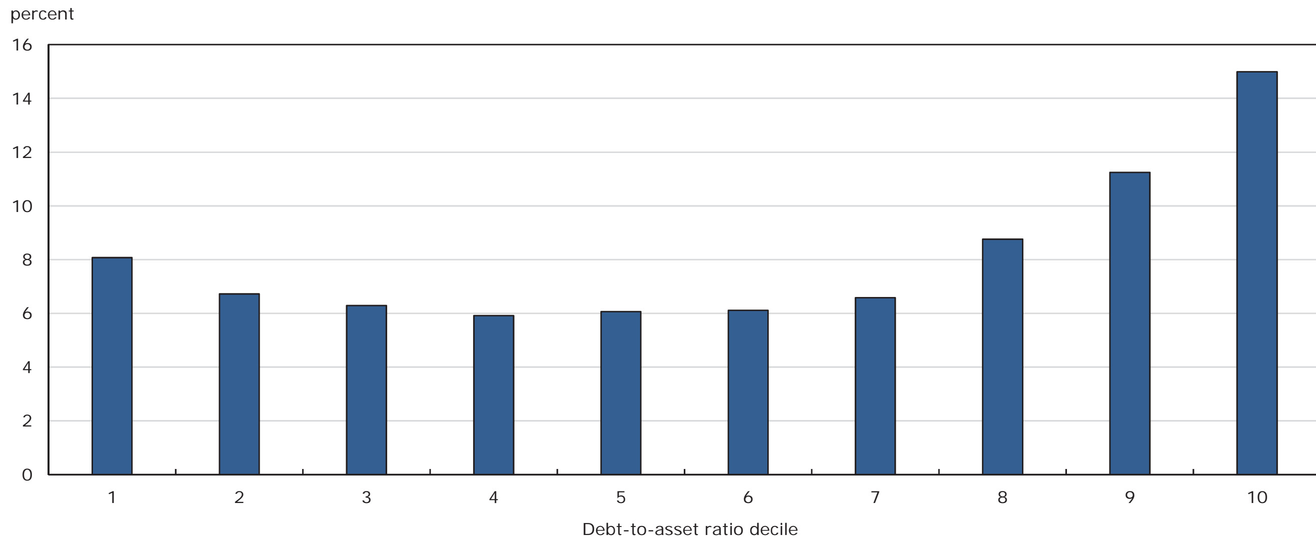
Businesses last active in August 2020 were not necessarily better placed at the beginning of the pandemic than those last active in February 2020. Measurement along a number of dimensions could determine how well-placed a business was. These dimensions could be related, and there may not be a straightforward relationship between them and the overall ability of a business to withstand the impacts of the pandemic. The connection between the debt-to-asset ratio and the probability of closure is an example of a complex relationship (Chart 2).

Chart 2 shows that 8.1% of active businesses in the lowest debt-to-asset ratio decile were closed by September 2020 and remained closed as of November 2020. The closure rate declines to 6.0% for the fourth decile and then subsequently rises to 15.0% for the last decile, which contains businesses with the highest debt-to-asset ratios. Higher closure rates for businesses in the first decile may be related to an

6. Net income before taxes over total assets.
7. Total revenues less total expenses all over total revenues.
8. Current assets over current liabilities.

inability to obtain debt financing and being unable to sustain itself over a period of lower demand. Closure rates decline initially, possibly because the subsequent deciles contain more firms with the ability to obtain debt financing. However, closure rates rise in subsequent deciles as higher debt-to-asset ratios become an indication of a lower ability to maintain debt payments when revenues decline. Businesses in the upper deciles may also be small firms that have high debt-to-asset ratios because of a low level of assets.

Chart 2
Closure rate of businesses[1] by debt-to-asset ratio decile



1. Active businesses in February 2020 that were closed by September 2020 and remained closed as of November 2020.
Source: Statistics Canada, author's calculations.

To overcome the issue of non-linearity, multidimensionality, and the fact that not all dimensions may move in the same direction all the time, a probability (risk) of closure was estimated for each business using dimensions[9] presented in Table 1 and controls for industry and province. Specifically, a probit regression model was estimated with an indicator for whether a business closed by September and remained closed as of November as the dependent variable, and the dimensions and controls mentioned above as explanatory variables. To account for non-linearity, a set of categorical variables was developed for each dimension.[10] More details on this approach are presented in the Data and methodology section of the article.

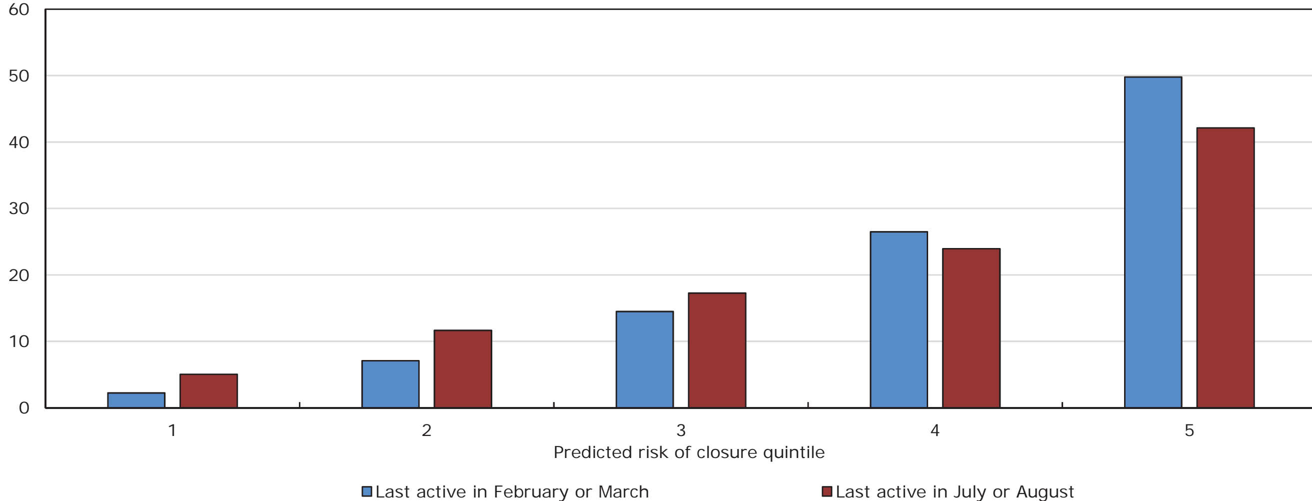
Changes in closed businesses over time

The estimated regression model coefficients were used to calculate a probability of closure for each business. Chart 3 shows how the estimated risk of closure for businesses, based on characteristics from before the onset of the pandemic, has evolved. In Chart 3, the estimated probability of business closure is ranked by quintile and divided between those that were last active early and late in the pandemic. At 49.8%, the share of businesses that closed early in the pandemic (last active in February or March) in the quintile with the highest risk of closure is distinctly higher than the 42.1% for businesses that were last active in July or August. By contrast, only 2.2% of businesses that were last active in February or March were in the quintile associated with the lowest risk of closure. This can be compared with 5.0% for

9. To avoid collinearity, only one measure of profitability (return on assets) was used in the probit regression.
10. Similar to the relationship between the closure rate and the debt-to-asset ratio, there are also non-linearities in the relationships between the closure rate and other financial variables.

businesses that were last active in July or August. These findings suggest that the businesses that closed earlier in the pandemic were more likely to have a higher estimated risk of closure; as the months passed, the share of businesses with a lower estimated risk of closure increased.

Chart 3
Distribution of closed businesses[1] by predicted risk of closure quintile and period last active



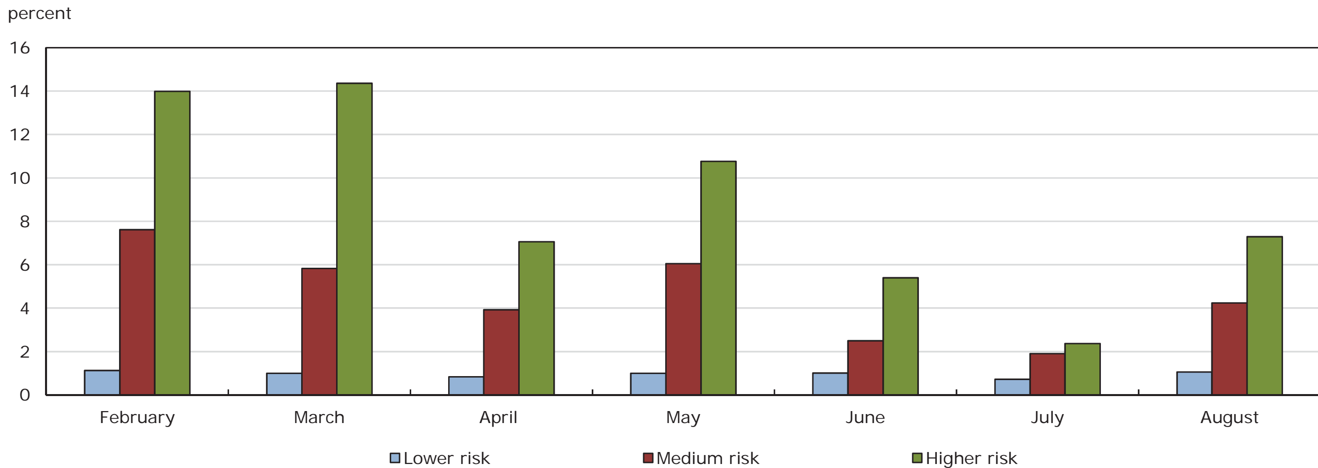
1. Active businesses in February 2020 that were closed in September 2020 and remained closed in November 2020.
Source: Statistics Canada, author's calculations.

Although their share has increased, the number of closed businesses with a lower risk of closure may not have increased because the overall number of business closures has declined. Chart 4 further breaks down the distribution of closed businesses by last month active shown in Chart 1 into categories of lower risk, medium risk and higher risk.[11] The contribution of low-risk closures has remained relatively constant over time at around 1.1%, while the contributions of medium- and high-risk closures have declined.

It is possible that closed businesses last active in February are different from those last active in August in ways not considered above. For example, closures that occurred in March are more likely to be permanent than those that occurred in September, although businesses that closed in September remained that way until at least November. The issue of seasonal closures has been addressed by removing businesses that exhibited a possible seasonal pattern in the past (were closed in August, September, October or November in 2019, but had activity in previous months that year) from the analysis. Furthermore, most provinces did not start re-implementing restrictions in response to COVID-19 until October 2020.

11. Businesses classified as lower risk are in the bottom three deciles of the predicted risk of closure distribution, while businesses classified as being at higher risk of closure are in the top three deciles of the predicted risk of closure distribution. Remaining businesses are in the medium risk category.

Chart 4
Distribution of closed businesses[1] by predicted risk of closure[2] and month last active



1. Active businesses in February 2020 that were closed in September 2020 and remained closed in November 2020.
2. Businesses in the higher or lower closure risk category have a predicted risk of closure in the top 3 or bottom 3 deciles. Remaining businesses are in the medium risk category.

Source: Statistics Canada, author's calculations.

Data and methodology

This article is based mainly on microdata that underlie the February 2021 release of experimental data on business openings and closures at the national level for the November 2020 reference month—specifically, Statistics Canada's Business Register and PD7 payroll deduction files from the Canada Revenue Agency. A business was active in February 2020 if it had employees according to the PD7 data. This set of active employer businesses in February is the basis for analysis in this article. A business that was active in February 2020 but closed by September and remained closed as of November had employees in February, but not in September, October and November. For businesses closed by September, their last month active is that when they last had employees.

The numbers in this article cannot be compared directly with the estimates of monthly business openings and closures because they are not seasonally adjusted in the same way, and because the article focuses on the cohort of businesses that were active in February 2020. The latter restriction excluded new businesses that have entered the economy since February 2020.

To account for the possibility that some businesses that closed in September may be seasonal, businesses that were closed in August, September, October or November of 2019 but showed activity in preceding months of the year were excluded. The exclusion of these seasonal businesses most affects the number of closed businesses last active in February and March. Presumably, these businesses are mainly active in winter, had their previous seasons curtailed by the onset of the pandemic and have not yet reopened. The main conclusions of the article are not impacted by the exclusion or inclusion of these seasonal businesses.

Data about active employer businesses in February 2020 were linked to the T2 Corporation Income Tax Return and the T4 Statement of Remuneration Paid. The T2 data provide financial variables such as assets, liabilities, current assets, current liabilities and net income; the T4 data help establish whether unincorporated active businesses are recent entrants. Data from these sources are for 2018.

A probit regression was estimated to examine the relationship between a business that closed by September and its characteristics prior to the onset of the pandemic. Controls for industry (North American Industry Classification System, three-digit) and the province or territory of businesses are

included in the regression, as well as controls for cases where information does not exist to calculate the financial variables for businesses. The estimated coefficients were then used to calculate a predicted risk of closure based on the prior characteristics of each firm. The firm-level estimates of the predicted risk of closure are the basis for charts 3 and 4.[12]

Conclusion

The COVID-19 pandemic has had far-ranging impacts on the economy. Many businesses have had to significantly scale back their activities, and others have had to close their doors. Businesses that closed early in the pandemic, in March and April, were more likely to have a higher risk of closure than those that closed in September. Future analysis will track whether stronger firms, based on pre-pandemic financial characteristics, will make up an increasing share of business closures in the coming months. Analysis will also be extended to examine the relationship between a firm's predicted risk of closure and its use of government support programs under the Government of Canada's Economic Response Plan.

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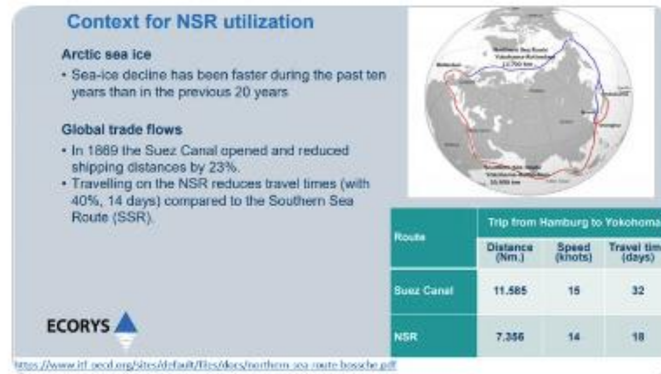
Lafrance-Cooke, A., R. Macdonald, and M. Willox. 2020. *Monthly Business Openings and Closures: Experimental Series for Canada, the Provinces and Territories, and Census Metropolitan Areas*. Economic Insights, no. 116. Statistics Canada Catalogue no. 11-626-X. Ottawa: Statistics Canada. Available at: https://www150.statcan.gc.ca/n1/pub/11-626-x/11-626-x2020014-eng.htm.

12. Sensitivity checks were carried out to examine whether the main findings of the article are affected by the inclusion of entrants (that cannot be linked to prior financial characteristics) in the analysis or by changes in the industrial composition of closures. When entrants are excluded from the analysis, the finding that recently closed businesses are more likely to have a lower estimated risk of closure than businesses that closed early in the pandemic becomes stronger. Since it is not possible to distinguish between stronger and weaker entrants using their prior financial characteristics, their exclusion simply makes the importance of those financial characteristics more distinct. To examine the impact of changes in the industrial composition of closures, the contribution of a firm's industry to its predicted risk of closure was subtracted from its predicted risk of closure. Analysis based on these predicted risks that abstract from industry effects does not alter the main conclusions of the article.

Dan Tsubouchi @Energy_Tidbits · 5m

#SuezCanal #Evergreen should see more shipping via Russia Northern Sea Route. Holdback is seasonal limitations but getting longer with warmer north. Huge savings, can shorten by >4,000 km and 14 days vs Suez Canal. #OOTT

Map courtesy of @ecorysuk
itf-oecd.org/sites/default/...

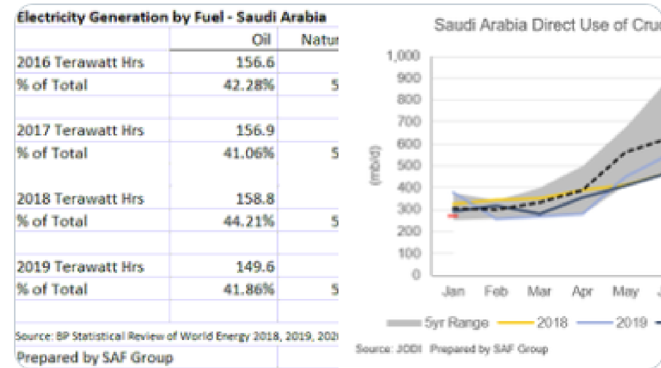


Route	Trip from Hamburg to Yokohoma		
	Distance (Nm.)	Speed (knots)	Travel time (days)
Suez Canal	11.585	15	32
NSR	7.356	14	18

Dan Tsubouchi @Energy_Tidbits · 4h

#PeakOil demand. Saudi Green Initiative targets electricity generation from renewables to increase from <1% to 50% by 2030. If so, should in theory wipe out need for >400,000 b/d of oil currently used to generate electricity. #OOTT

spa.gov.sa/viewfullstory....



Electricity Generation by Fuel - Saudi Arabia

	Oil	Natu
2016 Terawatt Hrs	156.6	
% of Total	42.28%	5
2017 Terawatt Hrs	156.9	
% of Total	41.06%	5
2018 Terawatt Hrs	158.8	
% of Total	44.21%	5
2019 Terawatt Hrs	149.6	
% of Total	41.86%	5

Source: BP Statistical Review of World Energy 2018, 2019, 202
Prepared by SAF Group

Dan Tsubouchi @Energy_Tidbits · 17h

. $TOT suspends development work at Mozambique #LNG project, target is ~1.7 bcf/d start in 2024. Had just resumed work on Mar 24. Surely the timeline delay isn't just a matter of months. What about other MZ LNG like $XOM? Positive for LNG in mid 2020s.

Total says Mozambique gas project work suspended after fighting
Total said on Saturday that it had postponed the restart of work at a liquified natural gas (LNG) project in Mozambique following an attack ...
reuters.com

1 2 4

Dan Tsubouchi @Energy_Tidbits · 19h

wish you could see in person how great it is to watch the wildlife as a regular part of your day. maybe 15 or more of the local #Canmore elk gang about 20 ft away from my desk. coming into the backyard for their afternoon graze.

3 1 27

Dan Tsubouchi @Energy_Tidbits · Mar 27

Hard for #ClimateChange to deny #Oil sector is committed to, and taking actions to significantly reduce emissions. But wish @APIenergy CEO saying "we also know that climate change is real" had been written into the API climate action framework. #OOTT

api.org/-/media/Files/...

Dan Tsubouchi @Energy_Tidbits · Mar 27

hard not to get distracted from work when the local #Canmore elk moved up from beside the Bow River to seeing them besides your monitor, grazing 20 ft away and staring. never is boring to see the elk, coyotes, etc back to tomorrow's Energy Tidbits.

1 9

Dan Tsubouchi @Energy_Tidbits · Mar 26

Is this how @COP26 gets RUS, CN, BR, etc onside with #NetZero? A new #ClimateChange debate for 2021/22. Planting trees gets #Carbon offsets, but will RUS get offsets for protecting an existing massive forest? thx @d_khrennikova @LauraMillanL @world_reporter

Top 10 Countries with
Largest Forest Areas

1 1

Dan Tsubouchi @Energy_Tidbits · Mar 26

Why more ships are, or will now be, diverting around Cape of Good Hope. It takes 10 more days, but unclear when #Evergreen is moved and then how long it will take to clear the backlog of ships to get thru the Suez Canal. 2020 ave was ~50 ships/day thru #SuezCanal. #OOTT #LNG

> **Dan Tsubouchi** @Energy_Tidbits · Mar 24
>
> Re #Evergreen Ever Given container ship stuck in #SuezCanal. Suez Canal importance to Europe on receiving Middle East #Oil #PetroleumProducts. Cuts 10 days off trip. Thx @WSC_shipping #OOTT

1

Dan Tsubouchi @Energy_Tidbits · Mar 26

Need to watch today for info. Not just drone hit on #Aramco Jazan petroleum products terminal, #KSA claims 8 other drones intercepted, 3 ballistic missilse fell short or in uninhabited border areas. #Houthi claimed these targeted Aramco in Ras Tanura, Yanbu and Jeddah. #OOTT

> Brigadier General Turki Al-Malki.
> "The terrorist, Iran-backed Houthi militia's attempt to target Jazan's petroleum products distribution terminal Thursday evening (25 March 2021) is a cowardly act of vandalism, which does not target the Kingdom and its economic installations, in fact it targets the core of global economy, the security of oil exports and stability of petroleum supplies, as well as the security of maritime navigation and international trade. It clearly demonstrates as well the utter disregard of the terrorist militia to the ecological and economic consequences of this act of vandalism.
> The Royal Saudi Air Defense and the Royal Saudi Air Force have intercepted and destroyed (8) bomb-laden UAVs launched by the Houthi militia in a deliberate, systematic manner to target civilians and civilian objects in the Kingdom in a flagrant violation of the customary International Humanitarian Law.
> The Houthi militia has as well launched (3) ballistic missiles toward the Kingdom. One of which fell short in Al-Jawf governorate after its launch from Sana'a, and the remaining two fell in two uninhabited border areas.
> These violations confirm the rejection of the terrorist militia of all political efforts to resolve the Yemeni crisis, specifically following the announcement of the Kingdom's initiative to end the crisis and reach a comprehensive political solution. They as well reaffirm Iran's control over the militia's political and military decisions, through which it achieves its vandalistic agenda to spread chaos and undermine regional and international security.
> The Ministry of Defense will undertake all necessary, deterrent measures to safeguard its national

1

Dan Tsubouchi @Energy_Tidbits · Mar 25

#Evergreen. he just gave me a second option. over under 2 weeks. he still wants over but only paying 1.5 to 1. i said you retired guys are always looking to supplement your cpp. #OOTT

> Dan Tsubouchi @Energy_Tidbits · Mar 25
>
> A retired oilman said he'd give me 2 to 1 and take the over on over/under 7 days to get #Evergreen container ship unstuck. Why? No specific info, rather he says it took 6 days to get 2016 container ship unstuck from running aground in #ElbeRiver. i forgot all about 2016. #OOTT
>
> Photo credit: Central Command for Maritime Emergencies
>
> Suez Canal Authority pictures March 24 of Evergreen Ever Given container ship
> https://www.suezcanal.gov.eg/English/MediaCenter/News/Pages/Navigation_new25-03-2021.aspx

1

Dan Tsubouchi @Energy_Tidbits · Mar 25

Does @SCC_eng ruling set up #CarbonTax only to #Liberals climate plan $170/tonne in 2030 or @PBO_DPB $289/tonne in 2030 if Canada to hit Paris Accord. Or maybe just faster increases if @JustinTrudeau wants to exceed Paris? #OOTT

canada.ca/content/dam/ec...

pbo-dpb.gc.ca/web/default/fi...

> Dan Tsubouchi @Energy_Tidbits · Mar 25
>
> 2/2. important to note "the majority noted the Act would only apply where provincial or territorial pricing systems are not strict enough to reduce global warming". sets up Liberals ability to crank up #CarbonTax as they see needed to "reduce" global warming. #OOTT
>
> Show this thread
>
> Reference re Greenhouse Gas Pollution Pricing Act

1 1 1

Dan Tsubouchi @Energy_Tidbits · Mar 25

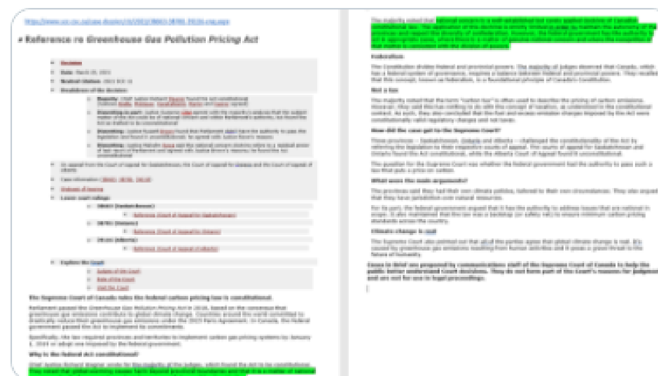
1/2. Supreme Court of Canada rules #Liberals carbon tax is constitutional. global warming a matter of national concern under the "peace, order and good government" clause of Constitution. #OOTT

scc-csc.ca/case-dossier/c...

1 2 1

Dan Tsubouchi @Energy_Tidbits · Mar 25

2/2. important to note "the majority noted the Act would only apply where provincial or territorial pricing systems are not strict enough to reduce global warming". sets up Liberals ability to crank up #CarbonTax as they see needed to "reduce" global warming. #OOTT

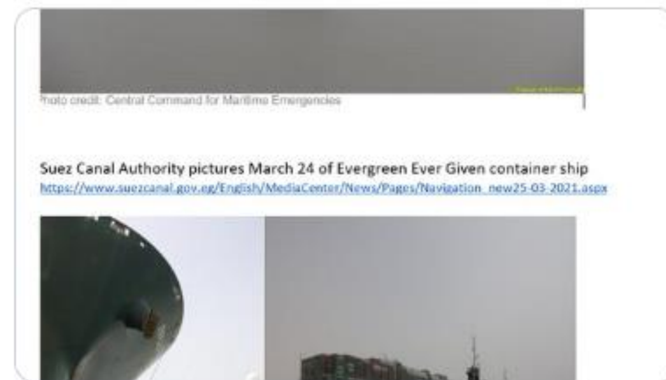


Reference re Greenhouse Gas Pollution Pricing Act

1 3 9

Dan Tsubouchi @Energy_Tidbits · Mar 25

A retired oilman said he'd give me 2 to 1 and take the over on over/under 7 days to get #Evergreen container ship unstuck. Why? No specific info, rather he says it took 6 days to get 2016 container ship unstuck from running aground in #ElbeRiver. i forgot all about 2016. #OOTT

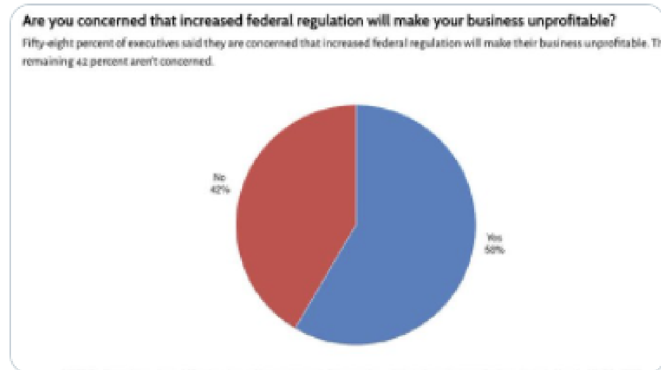


2 7

Dan Tsubouchi @Energy_Tidbits · Mar 24

Check out @DallasFed quarterly energy survey for a good sense of mood for US #Oil #NatGas co's. Yes, positive on oil/gas prices, but 58% worry federal regulation (ie. @Interior fossil fuels federal lands review) will make their co's unprofitable. #OOTT

dallasfed.org/-/media/Docume...



Dan Tsubouchi @Energy_Tidbits · Mar 9

Should assume @DallasFed worst case est #Permian impact @POTUS federal lands risk ie. 0.5 mmb/d less growth. How can #Oil #NatGas be optimistic, @Interior outlines next steps in "fossil fuels" review. Emphasizing fossil fuels can't be good. #OOTT ...

1 2

Dan Tsubouchi @Energy_Tidbits · Mar 24

Not all US oil producers realizing benefit of $60 #Oil. @BloombergNEF Anastacia Dialynas reports combined hedging losses $8b of 50 producers tracked. A good tidbit from @TheTerminal TOPLive coverage of EIA weekly oil inventory data. #OOTT

Excerpt Bloomberg @TheTerminal TOPLive blog on EIA's Weekly Petroleum Status Report, March 24, 2021

Despite oil price's rally, production is holding stubbornly at 10.9 million barrels per day. Not only are producers focused on debt reduction over growth, but also many of them are not actually recouping these higher prices due to their hedging positions.

Of the 50 producers tracked by BNEF, combined hedge losses have reached $8 billion, and only 14 firms are expected to realize prices above $60 on their 2021 production as a result.

BNEF offers detailed hedge position data and tools to analyze the effect of these hedges on financial positions for 50 U.S. and Canadian producers. For more details, see our newly published Hedging Tools Guide.

3 13

Dan Tsubouchi @Energy_Tidbits · Mar 24

For those not near their laptop, @EIAgov just released weekly #Oil #Gasoline #Distillates inventory data for week ended March 19. Prior to release, WTI $59.74 #OOTT

ir.eia.gov/wpsr/overview....

Oil/Products Inventory March 19: EIA, Bloomberg Survey Expectations, API

(million barrels)	EIA	Expectations	API
Oil	1.91	1.35	2.93
Gasoline	0.20	1.25	-3.73
Distillates	3.81	-0.45	0.25
	5.92	2.15	-0.55
Note: SPR had no change for March 19 week			
Note: Cushing declined 1.935 mmb for March 19 week			
Source EIA, Bloomberg			

1

Dan Tsubouchi @Energy_Tidbits · Mar 24

This may turn out to be one of the best pictures of the challenge of getting #Evergreen Ever Given container ship unstuck in the Suez Canal. Courtesy of Bloomberg's @helloimserene @annieLee23 @iamsharoncho #OOTT

9 21

Dan Tsubouchi @Energy_Tidbits · Mar 24

#Evergreen Bloomberg's Cairo based @S_Elwardany reporting Ever Given container ship now been moved alongside the bank instead of across & blocking #SuezCanal ie. closer to resolution. #OOTT

3 4

Dan Tsubouchi @Energy_Tidbits · Mar 24

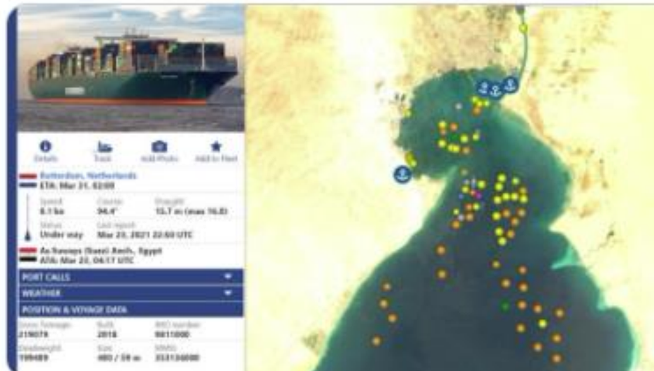
Re #Evergreen Ever Given container ship stuck in #SuezCanal. Suez Canal importance to Europe on receiving Middle East #Oil #PetroleumProducts. Cuts 10 days off trip. Thx @WSC_shipping #OOTT

4 4

Dan Tsubouchi @Energy_Tidbits · Mar 23

check out @VesselFinder interactive map vesselfinder.com/?imo=9811000

to see the back up of vessels with the Suez Canal blocked by the #Evergree container ship. Growing by the minute and including #Oil and liquids tankers. This is only the Red Sea entrance to Suez #OOTT

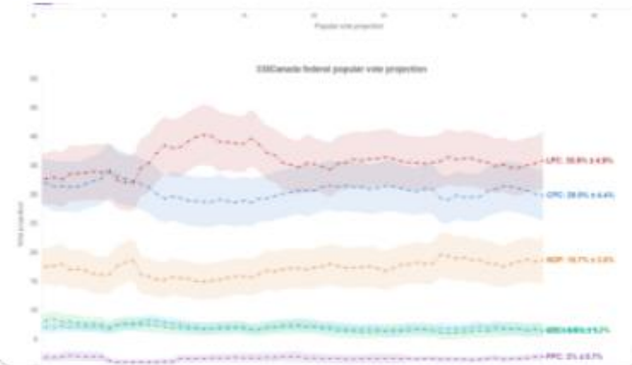


4 9

Dan Tsubouchi @Energy_Tidbits · Mar 23

thanks to @338Canada for polling data.

> **Dan Tsubouchi** @Energy_Tidbits · Mar 23
>
> See why @JustinTrudeau would be tempted to call election. #Liberals are close but will need increased support to get majority if there is election call. 338Canada polling as of Mar 21, likely doesn't reflect much of #Conservatives Mar 20 voting no to climate change is real. twitter.com/Energy_Tidbits...



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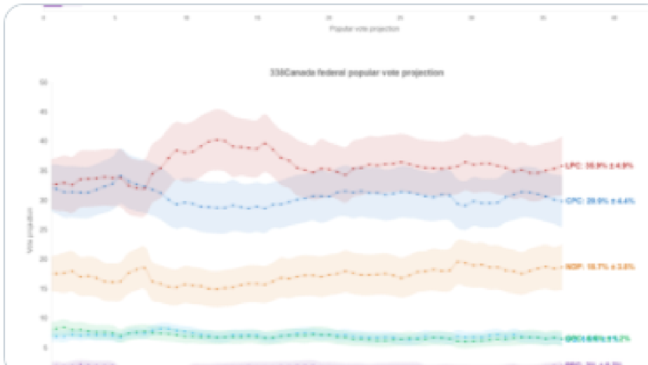

> **Dan Tsubouchi** @Energy_Tidbits · Mar 23
>
> #Liberals budget on Apr 19, 3 days before US climate summit. New emissions targets should be prominently featured. Hard to see #NDP #Bloc #Greens vote it down. Will @JustinTrudeau decide to ask for a mandate especially after #Conservatives said no to climate change is real. #OOTT

2 1

Dan Tsubouchi @Energy_Tidbits · Mar 23

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4 3

Dan Tsubouchi @Energy_Tidbits · Mar 22 ···

#bluehydrogen #greenhydrogen may be the future, but big scale will take a long time and need old style LNG deals to unlock ie. long term offtake guarantees. $SAR CEO "hydrogen does not come cheap". #NatGas power, #diesel for industry will be needed for longer. #energytransition

Saudi Aramco Q4/20 Call March 22, 2021

Any items in "italics" are SAF Group created transcript of Q&A section of webcast

CEO Nasser's reply in Q&A on gas to hydrogen.

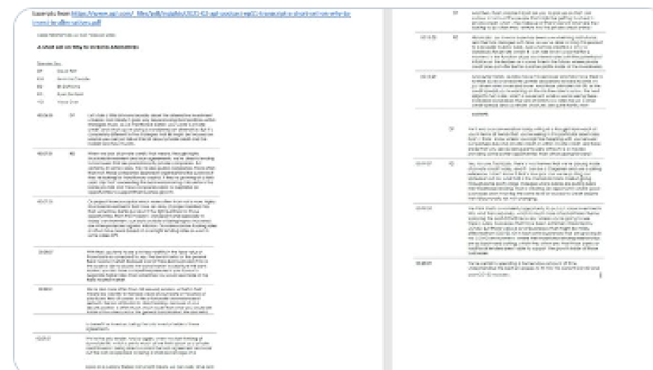
Nasser "*The gas to hydrogen, as I say, we have a lot of work ongoing. We are not at liberty to share all the details but let me say what we look at in terms of hydrogen is something with big scale. It is all as we way, what we are advantaged with here is the geology, is the large xxxx when it comes to our resources, abundance of resources either conventional and unconventional. We do have the economies of scale. It all depends also on the market. because as you know, the only market that exists today is Japan, I mean at scale. And even with that, considering that what we are looking at, we need to ensure there is an offtake guaranteed over the long term before you execute these programs. These programs going to cost a lot of capital in order to do them, hydrogen does not come cheap. It costs a lot because it requires a lot of sequestration. And as such we need to make sure that the markets are there for that blue hydrogen. so we are currently doing a lot of work, we have been doing it for some time. we have the resources as they say. we do have the aquifer for the sequestration. and we do have the appetite to produce hydrogen and as we say, we are coordinating, our priority is satisfying*

2 · 6

Dan Tsubouchi @Energy_Tidbits · Mar 22 ···

Only the tip of the iceberg but safgroup.ca CEO Ryan Dunfield shares insights on private credit post Covid. Its why its great to work for SAF, priority is keep secrets to benefit SAF investors. AGF Perspectives is a good resource for views.

agf.com/ca/en/insights...



Dan Tsubouchi @Energy_Tidbits · Mar 15

Very proud to work for SAF Group safgroup.ca. we almost never put our name in a release, but this is just one example of how our leadership was early and for the past few years, set up 2020s growth in multiple buckets in addition to energy.

...

3

Dan Tsubouchi @Energy_Tidbits · Mar 21

Our weekly SAF March 21, 2021 Energy Tidbits memo was just posted our SAF Group website. This 42-pg energy research piece expands upon and covers many more items than tweeted this week. See the research section of the SAF website. #Oil #OOTT #OPEC #LNG safgroup.ca/research/trend...

SAF GROUP

Energy Tidbits

March 21, 2021

Produced by: Dan Tsubouchi

India Oil Consumption to Double By 2030, Adding 4.3 mmb/d to 8.7 mmb/d Says India Ministry of Petroleum and Natural Gas

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector and not just a specific company results. Our target is to write on 48 to 50 weekends per year and to post by noon mountain time on Sunday.