

Brief: FT Energy Source Live Virtual Conference

Date & time: 25 May, 10:50 – 11:40 MST

Location: Virtual

Event title & format: The Biden Era: The Great US Energy Reset? 25 min fireside chat on bp's net zero strategy with two questions from the audience. FT staff to filter questions to ensure fairness.

Host: Derek Brower, FT US Energy Editor

Audience: Global audience of leaders and practitioners from industry, finance, private equity, and government as well as media and the public.

Event Background

The inaugural FT Energy Source Live: US Edition provides an unrivaled platform to deep dive into the issues set to reshape the industry in the years ahead. Opportunities and risk abound in this new landscape, and as energy companies survey the rapidly changing landscape, they will need to refine strategies to keep on track with the pace of the energy transition and take advantage of the new growth opportunities emerging.

OBJECTIVES OF PARTICIPATION: Instilling confidence in bp's net zero strategy

RUN OF SHOW (ALL TIMES MOUNTAIN STANDARD TIME):

- 10:50am Joining the Green room - Connect 25 mins before the LIVE session to establish connection and meet each other
- 11:15am Go LIVE - Derek will launch the conversation
- 11:30am Audience Q&A (filtered by FT Live)
- 11:40am End

MORE ON DEREK BROWER:



Derek Brower leads the FT's energy coverage in the US, the world's biggest and most dynamic market, reporting on companies and investors from Texas to New York; the shale patch to the solar sector; and from Washington oil politics to the environment and transition.

He has covered energy and global politics for 20 years, working across the Middle East and North Africa, North America, and Russia.

NOTE: PLEASE SEE APPENDIX FOR ADDITIONAL REFERENCE MATERIAL:

- **E&E interview with Bernard**
- **Derek Brower's article on IEA Report**

QUESTIONS:

Derek will begin with a question which allows us to frame the conversation by summarizing the strategy:

BP's AMBITION:

- to reach net zero by 2050 or sooner, and help the world do the same
- we will achieve measurable results this decade
- we're already reducing our footprint in every aspect of our global business, from emissions to capturing carbon and drawing down oil and gas production by 40%.
- we're scaling up renewables in critical sectors
- we're investing in low carbon opportunities

TARGETS BY 2025:

- Reducing methane by committing to zero routine flaring in US onshore operations
 - Cutting emissions from our global operations *and* our oil and gas by 20 percent (on an absolute basis)
- Building 20 gigawatts of renewable energy (up from 2.5 gigawatts in 2020)
- Increase investment in non-oil and gas to >20% of bp's capex (from \$500m to \$3-4b/year)

TARGETS BY 2030:

- >40% cut in our oil and gas production (2019 baseline)
- 10X increase in low-carbon investments – in areas like wind and solar and hydrogen – to create 50 gigawatts of renewable power
- building partnerships with 10-15 cities and 3 core industries globally

WHY?

- society wants a lower-carbon future
- net-zero is good for business and for society
- renewable energy creates economic opportunity and jobs.
- There are billions of dollars to be made in re-plumbing the world's energy system as we move to net zero.

1. First year as president and chairman, bp America

You took on this role in the middle of a pandemic and as the company globally rolled out a new strategy to reach net zero. What are your impressions so far?

- **GRATITUDE:**
 - privilege to work alongside bp's 10,000 US employees to reimagine energy
 - World-class team delivering on our strategy in challenging time
- **WE ARE AMERICA'S LARGEST ENERGY INVESTOR SINCE 2005**
 - Investing more than \$125 billion in the economy
 - Employ 10,000 people in the United States
 - Supporting more than 125,000 additional jobs
- **MAKING MOST OF OUR TIME** to do something meaningful for future generations.
 - 30 years from now people will be benefitting from our strategic decisions today

2. bp Strategy: Pivot from IOC to IEC

bp has said it's pivoting from an international oil company to an integrated energy company. What does that look like in practice here in the US?

- **IOC TO IEC**
 - from an international oil company that extracts resources....
 - to an integrated energy company focused on delivering solutions for customers.
- **Our ambition: NET ZERO BY 2050 OR SOONER / HELP WORLD GET THERE**
- **RECENT US ACTIVITY:**
 - **"BIGHORN SOLAR PROJECT"** - providing carbon neutral energy and creating jobs:
 - \$250 million investment from Lightsource bp – which bp is a 50% owner – to build a 300-megawatt solar facility
 - Located in Pueblo, Colorado, about two hours south of Denver, **Bighorn Solar Project will provide power to steel producer EVRAZ at their plant.**
 - Economics of solar energy and budget certainty helped the steel mill retain 1,000 workers and expand operations.
 - Construction of >700,000 solar panels for Bighorn Solar Project created >300 local jobs.
 - Project will contribute >\$22 million in property tax revenue over its life. Benefits local schools, street maintenance, fire stations, public services.

- Project is expected to go online later this year (2021).
- **ARGOS** – semi-submersible floating production platform - bp's fifth operated platform in GoM
 - Centerpiece of \$9 billion project **will provide bp with an estimated 25% increase in production capacity** in the region.
 - Currently undergoing final prep work and regulatory inspections in Ingleside, TX – once offshore, will operate in 4,500 feet of water about 190 miles south of New Orleans.
 - Expected to support 800 jobs during work in Ingleside and about 250 jobs once in operation.
 - **Argos will significantly strengthen bp's high-margin oil and gas business in GoM** – allowing us to **access and deliver new barrels at low cost and in rapid time.**
 - Resilient and focused **hydrocarbons business will provide the cashflow needed to fund bp's transition** into an integrated energy company – expected to **generate strong returns for years** to come, even in a low oil price environment.
 - Start-up expected early 2022 – at peak, **facility will produce up to 140,000 boe/d.**
- **50:50 PARTNERSHIP WITH EQUINOR IN OFF-SHORE WIND**
 - January bp invested \$1.1 billion and formed a **strategic 50:50 partnership with Equinor in offshore wind in the US**, the fastest growing renewable energy sector.
 - The partnership is bp's first offshore wind venture. It aligns with our strategy to **rapidly grow our renewables business and develop 50GW of renewable power by 2030.**
 - We will jointly develop four assets in two existing offshore wind leases located offshore New York and Massachusetts -- together these have the potential to **generate 4.4 GW of power for more than two million homes.**
 - Our partnership will leverage our combined capabilities and decades of experience in delivering projects in some of the most challenging offshore environments – **we will also jointly seek other US offshore wind opportunities.**

3. Performance / strategy question

bp has a strategy, but what makes you think you can succeed? Will it pay for investors?

- **Q1 2021 RESULTS**

- **CEO Bernard Looney:** “It is possible to do two things at once: it is possible to deliver our shareholders with competitive cash returns and at the same time, transition the company to a lower carbon future.” (Source: Bernard Looney discussing Q1 2021 results on CNBC)
- **STARTING SHARE BUYBACKS 2Q 2021:** ~ \$500 million.
- **DISCIPLINED IN GROWING LOW CARBON PORTFOLIO:**
 - Reduced net debt by \$5.6 billion to reach \$33.3 billion at the end of the 1Q 2021 – a year ahead of schedule.
- **10-FOLD INCREASE IN LOW CARBON SPEND BY 2030**
 - From \$500m (in 2020) to \$5b by 2030
 - This would make up one third of bp’s capex.
 - Still can deliver shareholders 8-10% returns.
- **BP’S INVESTOR PROPOSITION IS COMPELLING:**
 - A resilient dividend
 - Profitable growth
 - Opportunity to invest in the energy transition

4. Recent IEA report

What are your reactions to the report?

- Welcome the IEA’s scenario as one of many possible pathways to get to net zero.
- Great contribution to the conversation in advance of COP 26.
- Striking similarities to this net zero pathway and the one we’ve charted in bp’s energy outlook:

- **“UNPRECEDENTED JUMP” IN LOW CARBON TECHNOLOGY SPENDING NEEDED**
 - ~\$5 trillion per year by 2030.
 - Up from \$2 trillion currently and in line with what we are planning our business for.
- **MUCH LOWER INVESTMENT IN OIL AND GAS -- BUT STILL INVESTMENT**
 - ~\$170 billion per annum after 2030
 - In many ways consistent with our approach to reduce our oil and gas production 40% in next decade.
- **WHAT’S NEEDED NOW IS ACTION:**
 - Our strategy has put us on the right track
 - We’re focused on “performing while transforming.”

5. Oil & gas production / resilient, focused hydrocarbons

bp announced its aim to reduce oil and gas production by 40% by 2030. No other energy company is planning anything like this. Why is bp? What is the role of oil and gas moving forward, what does bp’s pipeline of projects look like? And the other side of the coin: how can bp be serious about net zero and moving toward renewables if it stays in oil and gas?

- **AIMING TO REDUCE OUR OIL AND GAS PRODUCTION BY 40% BY 2030.**
 - 10-fold increase in low carbon investment by 2030
 - 8-fold increase by 2025.
- **RESILIENT AND FOCUSED HYDROCARBONS**
 - HOWEVER, they remain core to our strategy – will fund the transition.
 - No transition without hydrocarbons.
 - Relentless focus on value over volume.
- **ROLE OF NATURAL GAS – POTENTIAL *GREENING* FUEL**
 - What we all know about gas:

- Abundant, cheap, easy to move
 - Lots of infrastructure
 - Burns with 50% the carbon of coal – if you produce it well.
 - Easy to dial up as back-up for wind / solar
 - Can turn it into hydrogen as one way to decarbonize heating, heavy transport and heavy industry – if you capture the carbon.
- Gas has an important part to play:
 - decarbonizing the energy system
 - greening bp - not least in generating cash we can invest in our transformation.
 - US: helps make renewable power more affordable – overall costs of electric power decrease when using gas as a backup.
 - **That said, production, supply and use of natural gas must be decarbonised,**
 - Must get methane under control, as fully and quickly as practical to help meet Paris climate goals.
 - CCUS can help: a direct source of energy to the power and industrial sectors, or to produce blue hydrogen.

6. Role of greening companies in the energy transition

Society expects action from big companies on climate, but does society also have a role in helping them change? And what can the federal government do to support bp's transition?

- **MATH: BIGGEST WAY TO CUT EMISSIONS IS FOR BIGGEST EMITTERS TO CHANGE.**
 - Companies in emissions-intensive sectors have commitments but need help.
- **SOCIETY SHOULD SUPPORT *GREENING* COMPANIES**
 - Not just those companies that are already green
- **GREEN COMPANIES ALONE CAN'T DO IT**
 - Greening companies have scale and know-how
 - They need support: well-designed policies, investment and encouragement.

7. US policy

bp recently announced a new ambition to end routine flaring in its US onshore operations by 2025 – why is this significant and how do you plan to achieve it? What is the role of policy?

AT FEDERAL LEVEL, WE LIKE WHAT WE SEE: lots of new, strong initiatives aligned with Paris and our own net zero ambition.

STREAMLINING FEDERAL PERMITTING PROCESS = KEY TO MOVING AT PACE / SCALE.

GRAND SLAM / PERMIAN FLARING

- Late in 2019 –flaring intensity in Permian was 16%. Today < than 2%.
- Impressive but not good enough – we’re eliminating routine flaring in our US onshore business by 2025.
- Right thing for the planet and business -- less gas we flare, the more gas we sell
- **SPENT \$300MM TO BUILD A CENTRALIZED PRODUCTION FACILITY** in Permian Basin
- Plans to spend upwards of an additional \$1B on similar infrastructure across our operations by 2025
- **WE’RE ELECTRIFYING OUR OPERATIONS.** We expect over 75% of bpx energy operated wells in the Permian will be electrified by the end of 2021 and over 95% by 2023.
- **USING STATE-OF-THE-ART EMISSIONS MONITORING TECH:** fixed wing aircraft, drones, high resolution cameras.

FEDERAL LEASING PAUSE: IMPACT TO BP

Q: The Biden administration placed a pause on federal leasing in the US, what is the impact, and where does bp stand on this?

- **ONSHORE IMPACT IS DE MINIMUS:**
 - <1% of our Permian assets are on federal lands
 - We do not expect significant impact on our existing operations in the Gulf of Mexico
 - We expect limited impact on our work in the near future, including our Argos project.
- We need more information to ascertain impacts the review may have on future permits associated with existing leases.
- For future permits, we will work with the Administration to continue safely operating our current portfolio onshore and in Gulf of Mexico.
- Resilient, high-value hydrocarbons remain the engine that will power our transition to a greener – and ultimately a net zero – company.

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Additional Topics

Texas Winter Freeze

- bp America donated more than \$500,000 to support victims of historic power and water outages due to extreme winter weather in Texas.
- People were suffering, and bp wanted to help.
- We're committed to the communities where we live, work and connect with our customers.
- Working with the American Red Cross and other organizations, we supported these communities as quickly as possible.
- Donations include \$250,000 from bp America to the American Red Cross to serve Texas, and \$250,000 to Houston area organizations supporting disaster relief.
- Efforts provided victims with food, water, health services and shelter.
- The bp foundation also will match dollar-for-dollar donations from bp employees to the American Red Cross.

Colonial Pipeline

- We take safety and security – including cyber security – extremely seriously and work hard to remain aware of and respond to ever-evolving risks.
- The unexpected, industry-wide outage on Colonial Pipeline is concerning to our customers and we worked proactively to provide continued service.
- We closely monitored the situation with Colonial Pipeline to help us understand any potential impacts to service.
- Our team also worked with alternative modes of transport and other supply sources to have product available for delivery.

Limetree Bay

- We are aware of what is taking place at Limetree Bay.
- **We expect our commercial counterparties to operate in a safe manner and in compliance with all applicable laws and regulations.**
- While not our refinery – we do have a commercial agreement to supply it with oil.
- We'll continue to keep an eye on what is happening while the refinery works to restart.
- Since this is a commercial agreement I can't get too far into details.

APPENDIX

E&E: BP CEO sees future in offshore wind, hydrogen

Carlos Anchondo, E&E News reporterPublished: Thursday, May 20, 2021

Bernard Looney, the CEO of oil and gas giant BP PLC, said yesterday the company plans to be "very active" on hydrogen as it expands clean energy projects and cuts oil and gas production 40% within the next decade.

He added that a major net-zero-by-2050 **report** released this week by the International Energy Agency is "a scenario on a piece of paper," although parts of it align with the company's goals, such as a call for a massive ramp-up in low-carbon spending.

Appearing **virtually** as part of Columbia University's Center on Global Energy Policy summit, Looney said hydrogen is "absolutely a key fuel of the future," adding it is BP's ambition to have 10% of the major hydrogen markets when they emerge.

"The reason is not everything can be electrified," Looney said to Jason Bordoff, the founding director of the Center on Global Energy Policy at Columbia. "You've got heavy industry, where high heat is needed ... not suitable, really, for electricity."

"You've got heavy-duty trucks that I was talking about earlier — difficult today to see a battery solution for that," he continued, explaining that hydrogen could be a possible solution.

Looney also touched on a question of emerging importance and debate among policymakers: how BP's hydrogen would be produced. The world needs both renewable hydrogen as well as "blue" types, made from natural gas and paired with carbon capture systems, he said. Renewable hydrogen would require additional build-out of wind and solar electricity, during an era of already vast demand for those new assets.

"We need a hydrogen economy to take place," Looney said. "We need the infrastructure and the markets to get built. The best way to do that is throw all of the hydrogen options at it — throw green and blue hydrogen at it," he said.

The CEO also touted the future of BP's investment in offshore wind — a sector where he said the company would utilize its long experience bringing billion-dollar offshore oil and gas projects to life.

BP jumped into the burgeoning U.S. offshore wind sector last year by paying \$1.1 billion for a 50% stake in Equinor ASA's Empire Wind and Beacon Wind projects (*Energywire*, Sept. 11, 2020).

The company has also stepped into the growing offshore wind sector in the United Kingdom, where Looney envisions a vertically integrated energy chain for BP to exploit — from the wind generated by turbines to the electrons BP can sell to power electric vehicles in the U.K.

"Just like in the old days, we took oil and gas production out of reservoirs and created an integrated value chain all the way into gasoline — in your language — into people's gas tanks in their cars," Looney said.

"We're doing the same with taking an offshore wind resource, taking it through a value chain, and ultimately, in the U.K., we have the potential to take it ... in electrons in somebody's car," he continued. "And of course the same is true in the United States, in Germany, in other parts of the world."

Offshore wind farms offer a stable source of revenue for decades, Looney said, reiterating his belief that renewable investments are valuable when the investment return is 8% to 10%.

Later in the interview, Looney noted that while BP is a company in transition, "hydrocarbons remain core to our strategy" and the company won't be able to transition without them.

Cyberattacks

Asked about the recent cyberattack on Colonial Pipeline Co., Looney said that BP gets attacked "probably millions of times a day ... as most big, international companies do."

"We've got real-time operations centers in London and in Houston that monitor our attacks constantly," he said, adding that the company spends a lot of time on drills to run through what happens in the event of a cyber incident.

The events around Colonial tell "us that this is going to be on our agenda for as long as we're all around. The threat will grow rather than diminish, and it is about the competence, the standards, the protocols that we all have, and we're just going to all have to become more and more vigilant," Looney added.

Reporters David Iaconangelo and Heather Richards contributed.

FT: 6 takeaways from the IEA's net-zero scenario

By Derek Brower

May 20, 2021

What we learnt from the IEA's 2050 road map

To keep the world from catastrophic overheating, a new clean energy revolution must take place — at breakneck speed, involving unprecedented co-operation. That's the conclusion of the International Energy Agency's new net-zero emissions "road map" (NZE) to 2050.

Fossil fuel investors' cover to keep investing in more supply has been blown, noted campaigners who welcomed the IEA's "change of heart".

But another gloomier conclusion is inescapable: the world is in trouble, because the NZE scenario looks a tall order on every front: political, technical, financial, and behavioural. The scale of the changes envisaged in the scenario — and their speed — are mind-boggling. No wonder some countries have already pushed back.

Here are our takeaways from the model:

1. Coal is finished and oil and gas outlook is almost as bleak

No longer can oil companies such as ExxonMobil point to the IEA in saying Paris-aligned decarbonisation will still allow for hefty oil production.

On the contrary, demand would collapse in the NZE scenario: down to 72m barrels a day by 2030 — well below the lows struck during the pandemic lockdowns last year. By 2050, demand would be just 24m b/d — less than Opec currently produces.

“No new oil and gasfields are required,” says the NZE report. The Permian and other existing oil and gasfields would endure (they’re not “new”). Even Exxon’s Guyana and Brazil projects seem OK (they’re “already approved”, the report says). But new exploration and the upstream spending the IEA used to badger the oil industry for? Finito.

Many liquefied natural gas supply projects being built are “also not needed”. The “golden age of gas” once predicted by the agency has ended before it began.

Refinery closures are inevitable in the NZE — an electrified fleet doesn’t need gasoline. It’s all a “clear threat to company earnings”, the document says, in one of several such understatements. And a threat also to the pension funds still addicted to these oil producers’ dividends.

2. The NZE’s numbers are jaw-dropping

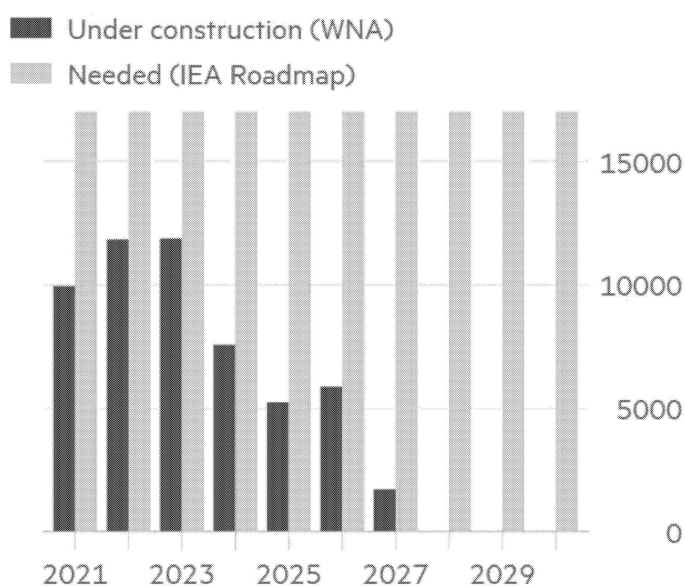
The road map calls for:

- Solar and wind power capacity additions of 1,020GW a year by 2030, or four times the record level struck last year (240GW, according to Irena).
- Electric vehicle sales accounting for 60 per cent of the total in 2030, versus 4.6 per cent now.
- Annual battery production for EVs, currently 160 gigawatt hours, would need to rise to 6,600 GWh in 2030. “The equivalent of adding almost 20 gigafactories each year for the next ten years.”

- “*Every month* [our italics] from 2030 onwards, ten heavy industrial plants are equipped with carbon capture technology, three new hydrogen-based industrial plants are built, and 2GW of electrolyser capacity are added at industrial sites.”
- “Global electricity networks that took over 130 years to build need to more than double in total length by 2040 and increase by another 25% by 2050.”
- Nuclear capacity additions between now and 2030 must hit 17GW a year; and afterwards 24GW a year — far more than the World Nuclear Association expects.

Nuclear reactors aren't sprouting fast enough

Capacity additions per year (GW)



Source: World Nuclear Association
© FT

And the investment needed to reach these targets is colossal.

Annual energy sector spending averaged \$2.3tn globally in recent years, the IEA says, but will have to more than double to \$5tn by 2030. On renewables alone, this would reach \$1.3tn or “slightly more than the highest level ever spent on fossil fuel supply” (\$1.2tn in 2014).

And another \$90bn of public money will be needed to “complete a portfolio of demonstration projects” by 2030. Currently, only \$25bn has been committed.

3. We don't have right tools to fight climate change

The US climate envoy was pilloried for saying the climate fight would rely on tech that didn't yet exist. But the IEA sort of agrees.

In 2050, “almost half the [emissions] reductions come from technologies that are currently at the demonstration or prototype stage”, it says. It is banking a lot on hydrogen, but more than 75 per cent of its emissions reductions come from technologies that are “only at the demonstration or prototype stage”. The number is 55 per cent for the emission reductions from carbon capture and 45 per cent for bioenergy's reductions.

“An acceleration of this magnitude is clearly ambitious. It requires technologies that are not yet available on the market to be demonstrated very quickly at scale in multiple configurations and in various regional contexts.”

4. There is a lot of pressure on consumers

More than half of the NZE's reductions depend on “consumer choices”: buying EVs; installing heat pumps and solar panels; scrapping car trips and cycling more; taking trains, not planes; changing heating temperatures; and cancelling long-haul business air travel. Plus new car speed limits (100 kmh) and “rideshare all urban car trips”.

I have already installed solar panels at my house. But I also just flew across the Atlantic and drove across the US. (I saw more gas flares than EVs or charging points.) I'm curious to hear what ES readers think — any heat-pump owners out there?

5. Turmoil in producer countries seems inevitable

Opec countries that produce crude cheaply will dominate dwindling global supplies. But oil prices will fall steeply alongside volumes: \$35 a barrel in 2035 and \$24 in 2050. Per capita income in already volatile producer economies will plunge by 75 per cent.

The IEA says this “could have knock-on societal effects” — another understatement. Is Iraq robust enough to survive another budget collapse?

Meanwhile, tax revenue from oil and gas retail sales falls by close to 90 per cent between 2020 and 2050, in the NZE. So consumer country governments “are likely to need to rely on some combination of other tax revenues and public spending reforms to compensate”.

6. Co-operation is key

The NZE “hinges on a singular, unwavering focus” as “all countries co-operate towards achieving net-zero emissions worldwide”.

In a world riven by trade conflicts where nations fighting a pandemic can’t even unite behind the World Health Organization, this seems the tallest of many extremely tall orders.

“Does the IEA really believe their scenario is achievable or are they just demonstrating the sheer impracticality of it?” asked Gordon Ballard, an adviser to the oil and gas industry.
(Derek Brower)