



Global investment opportunities in the energy transition

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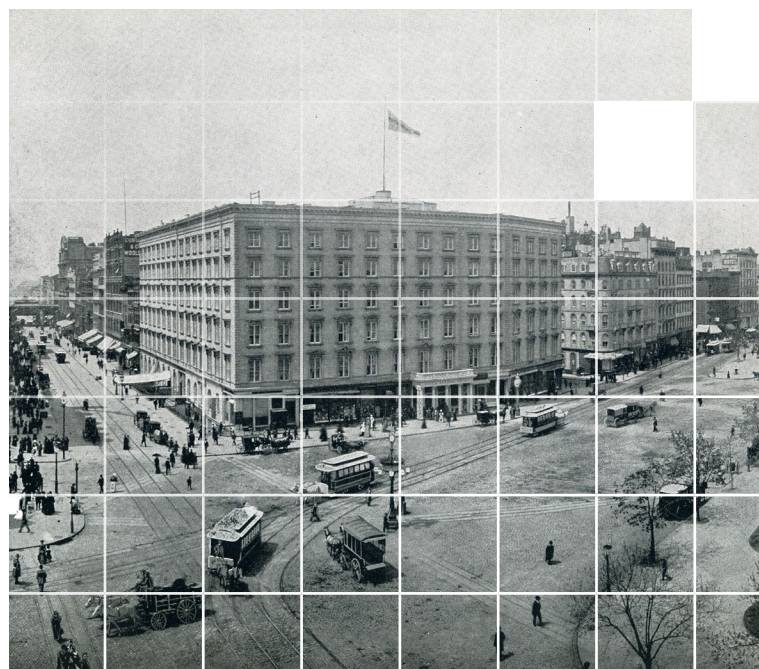

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In 1900, New York's population of 100,000 horses produced 2.5 million pounds of horse manure per day¹. Cities across the developed world from Paris and London to Sydney all had a similar problem - how to deal with the mountains of manure (and the associated flies, smell and disease) their equine transportation system produced each day?

The 'Great Horse Manure Crisis' of the early 1900s had the world confounded. And then electric trams arrived, and motor cars and buses started appearing in ever greater numbers. Slowly, the manure and its stench disappeared. A seemingly intractable problem was solved by an unforeseen technological solution.

This is the hope for the world's energy problem too. Collectively, we need to satisfy the world's insatiable demand for energy, while also reducing carbon emissions to Net Zero by 2050. Current solutions won't cut it.



How will the world solve its energy problem?

The challenge is vast. The demand for global energy is projected to grow by 62% – 185% by 2050². To have any chance of meeting the Net Zero goal, McKinsey estimates that spend on physical assets would need to rise from \$5.7 trillion to \$9.2 trillion³.

The big question though is: which technological solutions will produce the most energy, at the lowest cost, with the lowest carbon emissions, at sufficient scale to have a significant impact?

Lots of very bright minds are attuned to this issue, and a flood of money is being released to break through the technological barriers. For investors, the energy transition is a tectonic shift to the global investment landscape that they need to bear in mind. With a shift of this magnitude, you either need to ride the wave or be swallowed by it.

Disruptive solutions are sorely needed: the International Energy Agency (IEA) estimates that nearly 60% of emission reductions will need to come from new technologies. Exciting innovations are already happening in areas like renewable energy, green hydrogen, electrification, energy storage, vertical farming, cultured meat, waste management and more.

In this white paper we bring together the perspectives of investment experts with significant experience in energy investment, from three affiliates of Natixis Investment Managers from different parts of the world in order to gain an understanding of global investment possibilities in the energy transition.

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|  <p>Jens Peers Global CIO of Equities and Fixed Income</p>  |  <p>Chris Wallis CEO and CIO</p>  |  <p>Tim Wood Portfolio Manager and Head of ESG</p>  |
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1. Source: Edwin G. Burrows and Mike Wallace, Gotham: A History of New York City to 1898 [New York: Oxford University Press, 1999].

2. Source: Resources for the Future, Global Energy Outlook 2023, <https://www.rff.org/publications/reports/global-energy-outlook-2023>

3. McKinsey, 2021, 'Solving the net zero equation'

+ What is the scale of the opportunity and how far into it are we?

The world is undergoing a profound change to the way we source, produce and deliver energy in an attempt to transition to a Net Zero global economy. Jens Peers is the global CIO of equities and fixed income for Mirova, an investment manager dedicated to sustainable investing. He compares this change to the societal changes brought about by the industrial revolution, or the internet revolution, in terms of the scale of change and the level of human adaptation required - as well as our current understanding of exactly what is needed.

Tim Wood is the Head of ESG for Australian quality and value equities manager, IML. He says that we are: "very, very early in a multi-decade journey into the energy transition. If this was a cricket game, we would only be in the opening overs of a 5-day test match."

For Chris Wallis, CIO and CEO of US-based global equities manager Vaughan Nelson, we are: "maybe in the second or third inning but this game is going to last a lot more than one or two decades."

Whichever sporting analogy you use, our experts agree that we are in the initial stages of a transition which will play out over decades, not years, and there are massive opportunities for investors, across a broad spectrum of different investment categories.

Allied Market Research estimates that the global energy transition market will reach **US\$5.6 trillion by 2031**, with a compound annual **growth rate of around 10%**, across five categories: renewable source, electrification, energy efficiency, hydrogen, and other energies⁴. Clean energy, in particular, is likely to see a huge boost. According to an estimate by the Repeat Project, total clean energy capital expenditure could hit **US\$4.1 trillion between now and 2035**⁵.

Predictions and estimates for the energy transition vary significantly and change quickly due to the high level of unknowns. Tim thinks that while we have a pretty good understanding of the current technology and what's required to help that to progress, for example improving the performance of lithium-ion batteries, he emphasises this is only part of the solution: "if we are genuinely going to look at what's required for the 2050 targets then we not only want, but need, new technology that hasn't been discovered or commercialised yet."

There is no denying that the world is likely to change dramatically, the challenge for investors is how to take advantage of it, and when to invest. As Jens points out, there are actually still very few opportunities available right now, that are publicly listed on global stock exchanges: "There aren't that many large solar companies available and you only have a handful of wind turbine

manufacturers that are quoted in the world...opportunities like hydrogen are still in their infancy as viable options, there's only four or five companies that you can play as a pure investment...that will change of course as that market matures and grows...So at this stage, while many of these opportunities are really valid and fantastic for unlisted investors, they're not available to us, but ultimately what's happening in the unlisted space will find its way into the listed space."

As Chris puts it: "I think we're still very early on in the transition, but I think we're even earlier in understanding the implication of the choices in the past we've already taken. We're going to morph from the early assumptions of...we're going to save the planet just by implementing wind, solar and other conservation elements and really start to focus on...where are those most applicable, where do they make sense and where are they actually counterproductive. And then we're going to have to wrap in a little bit of energy security too."

“We are very, very early in a multi-decade journey into the energy transition. If this was a cricket game, we would only be in the opening overs of a 5-day test match.”

Tim Wood



4. Source: Allied Market Research <https://www.alliedmarketresearch.com/energy-transition-market-A31819>

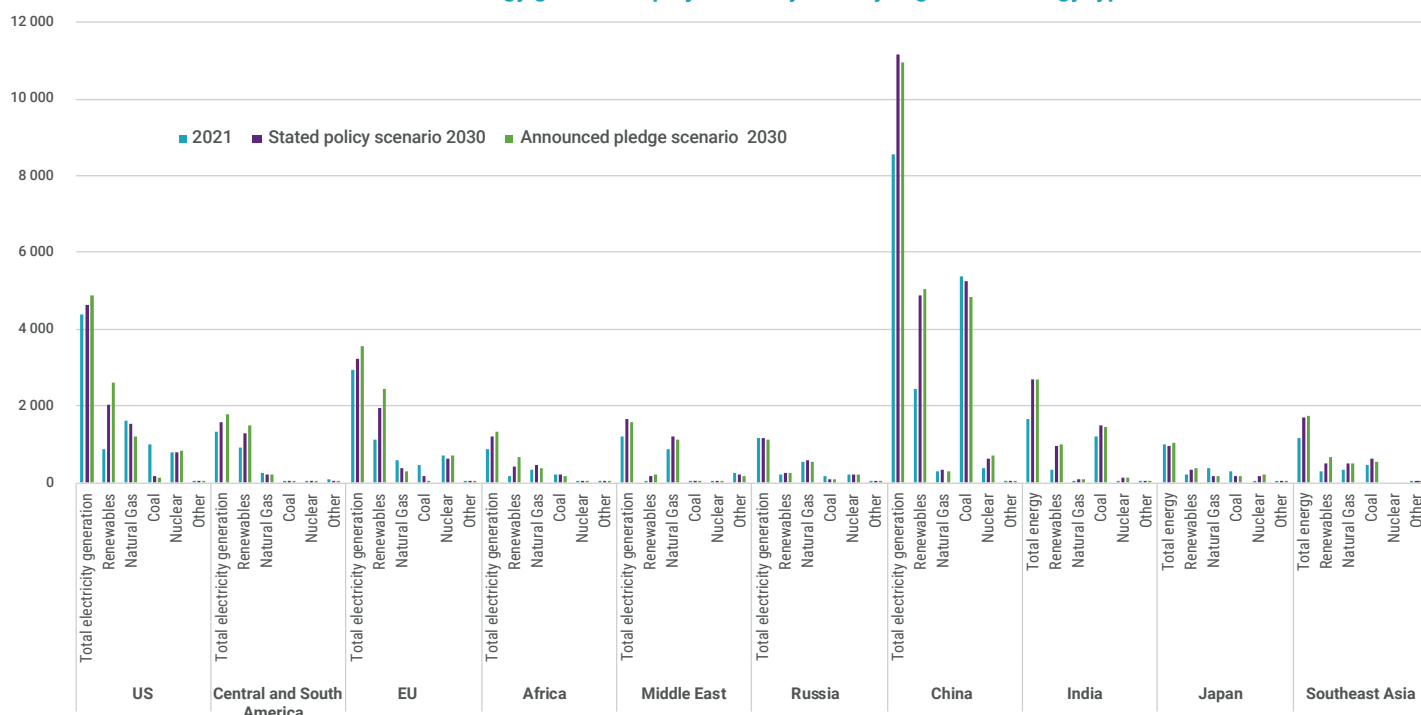
5. Source: Repeat Project, https://repeatproject.org/docs/REPEAT_Summary_Report_022822.pdf

Global energy outlook

This graph from IEA's World Energy Outlook (WEO)⁶ uses two different scenarios to show how energy generation may change around the world, depending on how each area's policies change.

1. The Stated Policies Scenario (STEPS) shows the trajectory implied by today's policy settings.
2. The Announced Pledges Scenario (APS) assumes that all aspirational targets announced by governments are met on time and in full, including their long-term net zero and energy access goals.

Global energy generation projections by country/region and energy type



What investment opportunities are you most bullish on?

In a change of this scale and duration, the number and scope of investment opportunities is immense. Do you invest in companies that:

- Build different types of power generation?
- Develop the technology to make it possible?
- Unearth or refine the minerals necessary for the transition?
- Build the infrastructure to transmit and store electricity?
- Develop or fit energy efficiency measures?

There are a bewildering array of opportunities, at various stages of investment readiness. Here are the current investment opportunities our experts nominated as the most promising.

Electrification



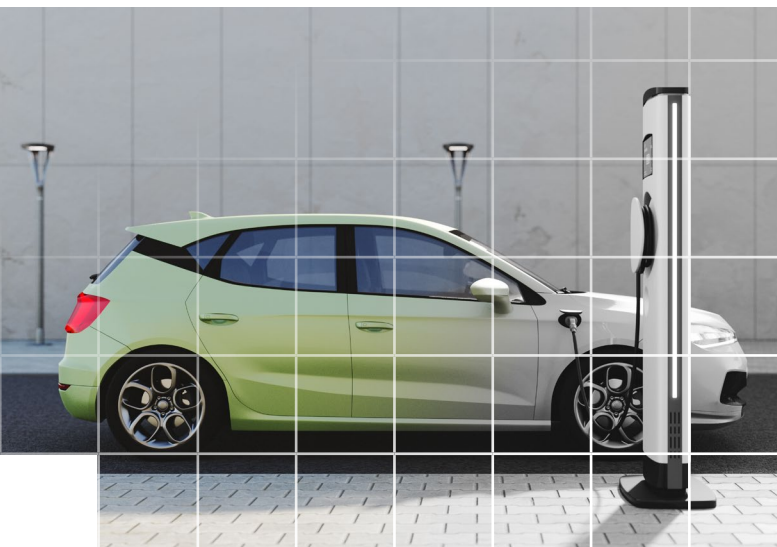
Greater electrification of countries and economies is seen by many experts as one of the key steps on the path to Net Zero. The International Energy Agency estimates that demand for electricity will grow at twice the rate of demand for energy each year up to 2040⁷. Bloomberg New Energy Finance estimates that to reach Net Zero by 2050, the world will require 80,000 terawatt-hours of electricity, more than triple today's amount⁸.

For countries to reduce their carbon emissions effectively their electricity grids will need to be transformed to cope with a new era in producing and distributing electricity. In many countries, their grids simply do not have the capacity to meet future demand. As well as increasing capacity, each country will have its own unique challenges depending on its size, geography, demography and natural resources. Countries like Australia have immense natural mineral reserves to draw upon, as well as large tracts of ● ● ●

6. <https://www.iea.org/reports/world-energy-outlook-2022>

7. Source: International energy Agency (2022), "World Energy Outlook"

8. Source: Bloomberg New Energy Finance, <https://about.bnef.com/new-energy-outlook/>



●●● little-used land, but have particular challenges in distributing energy over a vast, sparsely populated land mass. European countries tend to have the opposite problem, much more densely populated (so easier to move electricity around) but far fewer natural resources to draw upon, and with recent geopolitical instability Europe requires a much greater focus on energy security.

Tim nominates electricity and electrification, in general, as the opportunity that he is most bullish on. All of our experts agree

Wind



Humans have been harnessing the energy from wind for thousands of years and it remains one of the most successful and widely adopted renewable energy sources. The International Energy Agency states that wind is the leading, renewable energy power generation source after hydro and it grew the fastest in 2021, up 17% with 55% higher growth than that achieved in 2020. An impressive 70% of this new wind generation capacity was in China⁹.

Jens nominates wind as his current favourite renewable power investment due to its high barriers to entry, the scale of power produced and its reliability - which all compare very favourably to the other leading renewable energy power source, solar:

"You and I, if we had enough money, could start a solar panel manufacturer just like that. We can buy the machines and there's almost no labour in there, but we cannot make new wind turbines due to the capital required and difficulty of installation and difficulty of entering a well-protected and highly regulated market."

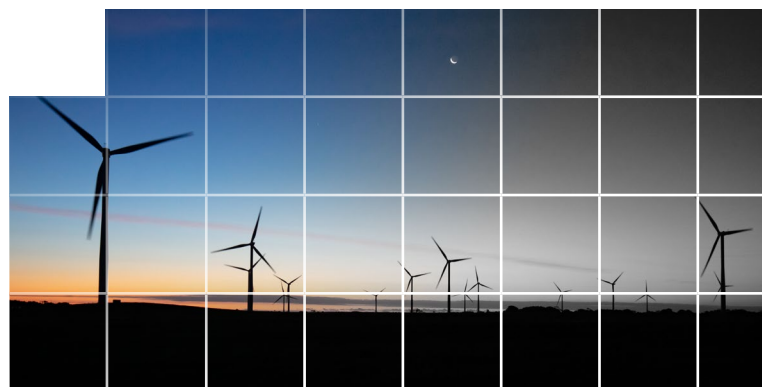
And while the City of Sydney has been powered by 100% renewable electricity since July 2020¹⁰, Jens thinks there's only one type of renewable energy, right now, that could power the whole Sydney metropolitan area.

in the immense scale of the opportunity, emphasising the enormous amount of infrastructure investment required and the many different ways to play this opportunity.

Jens likes individual opportunities in and around the infrastructure change, including retail solar installers, component manufacturers, heat pumps and charging infrastructure and then the corresponding changes to reduce energy like insulation and LED lighting. He emphasises that, like many investments, people need to look at each specific opportunity and treat it differently.

For charging infrastructure, Jens says valuing it now is similar to valuing a bond, in that the technology is known so it's more of a question of "do you believe in that growth and in that company taking market share?". The other appealing part of investing in charging infrastructure is that a certain amount of growth is already known, areas like the European Union and California have legislated that by 2035 you will not be able to buy an internal combustion engine (ICE) car, so the infrastructure will need to be there to meet car drivers' needs.

Chris is looking at more esoteric opportunities around the electrification of the grid: "I'm looking for the investments that people aren't aware of yet that are net beneficiaries of this. As a simple example...if you want to move to an EV fleet, that's great. We just have to rebuild our grid, but there's only a couple of companies that make the power poles and the cabling that's necessary for that and the other electrical equipment to tie it all together."



“Then there's scale, a city like Sydney could be powered by wind alone, of course combined with some kind of battery, but Sydney could never be powered by solar alone, it just doesn't have the scale that's required.”

Jens Peers

9. International Energy Agency (IEA) <https://www.iea.org/reports/wind-electricity>

10. <https://news.cityofsydney.nsw.gov.au/articles/weve-made-the-switch-to-100-percent-renewable-electricity>

Nuclear



Nuclear has been a 'no-go' for many countries since Chernobyl. While some countries incorporated it into their energy mix in the intervening years, it never gained widespread global acceptance. And then the Fukushima disaster pushed nuclear further down the list of countries' preferred energy sources.

However recent very high energy prices caused by Russia's war in Ukraine, as well as a growing realisation of the sheer scale of energy which the world will require, have made nuclear harder to ignore. Countries like Canada have started looking much more seriously at nuclear, after many years of not considering it at all. Recent developments with new, smaller nuclear reactors, as well as some reinvigorated research into nuclear fusion¹¹, have some experts more bullish on nuclear's potential.

Chris is among these: "Nuclear's going to have to be a significant part of the solution as well. There's a lot of new plant designs that are small...they've gotten some approvals and they're ready to try to roll them out for commercial applications...Fortunately, Bill Gates and others have been funding the development and licensing and getting the certifications. We will build more large-scale nuclear plants but that's not necessarily the most efficient approach to nuclear anymore."

Natural Gas



According to the IEA, natural gas makes up around one quarter of global electricity generation and around one-third of total energy demand growth in the past decade¹². It is seen by many people as an important transition fuel on the way to cleaner forms of energy, so demand is likely to be strong in the medium term, however longer-term demand is more uncertain.



Both Tim and Chris see long-term investment potential in natural gas.

Tim: "I've looked in detail at gas for 15 years, I've seen the large facilities here in Australia and I've been to oil shale and gas fields in the US. I think gas is a very important transition fuel for us to achieve net zero, but it has to be developed and operated responsibly. While many countries have started to reduce the amount of coal that they burn to generate electricity, we still have a very long way to go in that journey. We have also oil and gasoline and petrol to displace in the world, we've barely touched the surface on that, and we're basically at record levels of oil production at the moment."

11. <https://www.bbc.com/news/science-environment-63950962>

12. Source: International Energy Agency (IEA), <https://www.iea.org/fuels-and-technologies/gas>

“Nuclear's going to have to be a significant part of the solution as well...”

Chris Wallis



Tim cites three main factors that make gas a desirable transition fuel and potentially a good long-term investment:

1. It has about half the CO₂ intensity of an equivalent coal-fired power station.
2. It's relatively affordable - increasingly important as high inflation and increasing electricity costs mean more people are unable to afford sufficient electricity.
3. Gas's ability to 'fast start' and complement renewable power.

"I don't think we should be looking at gas as only being half of the CO₂ intensity of base generation coal because actually, if you're getting 80% of your daily needs from renewable electricity, and then using gas for the 20% of the day that you need it, it's a really carbon-efficient way of reliably generating electricity."

Chris agrees that natural gas is likely to play a significant role in filling the world's energy needs for many years, saying: "I think if you really study history and you think any form of energy's going to go away, you've oversimplified it...we're using more coal today than we did when we started using it in the 1800s. I think natural gas is going to play a very significant role in meeting the world's needs with carbon capture technology...Countries can choose not to use it or to use it, but the globe's going to use it."

“I think natural gas is going to play a very significant role in meeting the world's needs with carbon capture technology...”

Chris Wallis

Future technologies

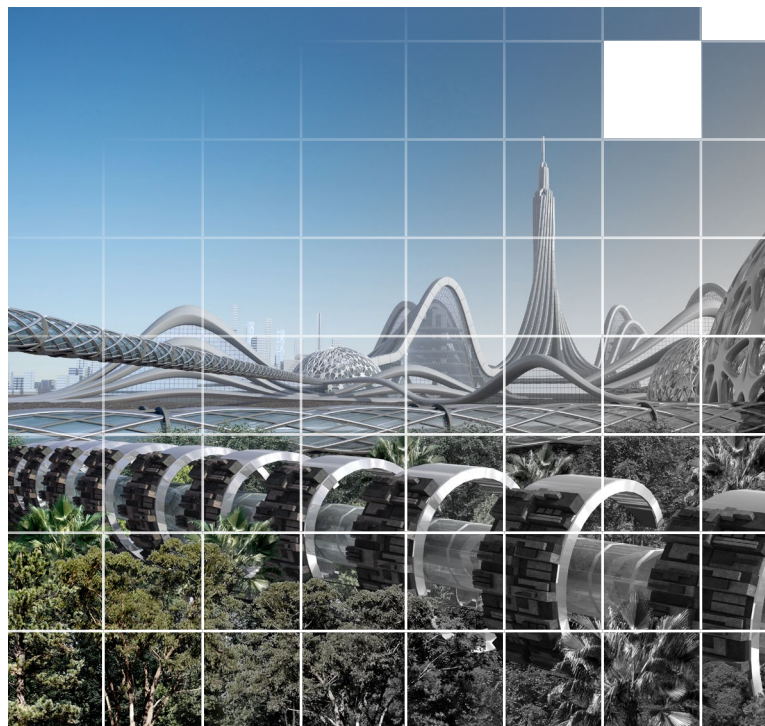


Experts agree that to reach Net Zero by 2050 much of the reduction in carbon emissions will need to come from technologies which are not yet commercially successful at scale. But forecasting the future is notoriously difficult. As Tim says: “Future technology is likely to be overestimated in the short term and underestimated in the long term.”

Chris says it's great that so many different types of renewable energy are being pursued as:

“We just don't know which breakthroughs we're going to come up with. It's why I say we're early in it and we're at the point where the narratives start to break down and the physics and the economics start to fight.” **Chris Wallis**

Here are the technologies that our experts think are most promising, but are not yet proven to be commercially successful at scale.



Carbon capture, utilisation and storage (CCUS)



Both the World Economic Forum¹³ and the International Energy Agency¹⁴ (IEA) believe that CCUS will play a critical role in the global energy transition. They cite its importance in reducing the emissions from fossil-fuel powered energy generation, which still produces most of the world's electricity, and its importance in reducing emissions for heavy industries and energy-intensive industries, particularly in areas where there are currently no alternatives to using fossil fuels. The IEA estimates that oil and gas operations currently account for 15% of energy-related greenhouse gas emissions and that carbon capture and storage is one of five key levers that the industry can use to quickly and cost-effectively cut emissions¹⁵.

Chris thinks that people are writing off fossil fuels and fossil fuel companies too quickly, saying: “The traditional energy industry has a very large installed base in the world economy and they're not going to go away quietly. They already have the profits and the capital. They already have the embedded infrastructure and they are spending the money to try to address this so that they are pivoting and surviving in the new world. And we've kind of just written all that off and I think that's naive.”

Chris points to a current project between Toyota and Chevron, which is producing gasoline with 40% less carbon emissions and is only incrementally more expensive than current gasoline. While it's not quite ready for commercialisation, Chris sees it as one example of the type of technology which is likely to extend the life of fossil fuels and make them competitive with newer fuels from both a cost and carbon emissions perspective.

Tim also believes that CCUS technology is likely to be a significant part of the solution. He mentions the Bayu Undan gas field that sits between Australia's Northern Territory and Timor Leste, which is nearly out of gas. Santos is looking to extract gas from a new field nearby and then sequester the carbon dioxide which is produced back into the depleted Bayu Undan reservoir. Tim describes this as a “really sensible carbon sequestration strategy which could become a new industry that would be profitable for Australian companies and Timor Leste but also really help the planet to limit the amount of CO₂ that's put into the atmosphere.”



13. World Economic Forum, <https://www.weforum.org/agenda/2022/10/3-reasons-why-future-of-carbon-capture-looks-promising/>

14. International Energy Agency <https://www.iea.org/reports/the-role-of-ccus-in-low-carbon-power-systems/why-carbon-capture-technologies-are-important>

15. <https://www.iea.org/news/new-iea-report-highlights-the-need-and-means-for-the-oil-and-gas-industry-to-drastically-cut-emissions-from-its-operations>

Hydrogen



Hydrogen has immense potential as an energy source due to its limitless availability and the large amount of power it can generate. There are, however, several hurdles to overcome before it becomes a significant part of our energy mix. According to Tim the two main ones are: "It's currently really expensive to produce carbon-free hydrogen and it's also really difficult to transport."

Right now, most hydrogen is produced by burning fossil fuels, and it takes large amounts of energy to do this. The most likely way to create clean hydrogen at scale is to use renewable energy to split water atoms into hydrogen and oxygen through a process called electrolysis. While opinion is split on how large a part it will play on our future energy mix, many experts are confident in its prospects.

In its Net Zero by 2050 scenario, Bloomberg New Energy Finance estimates that hydrogen will make up 23,000TWh of electricity by 2050, the single biggest source of power demand globally, and equal to total global demand in 2020.

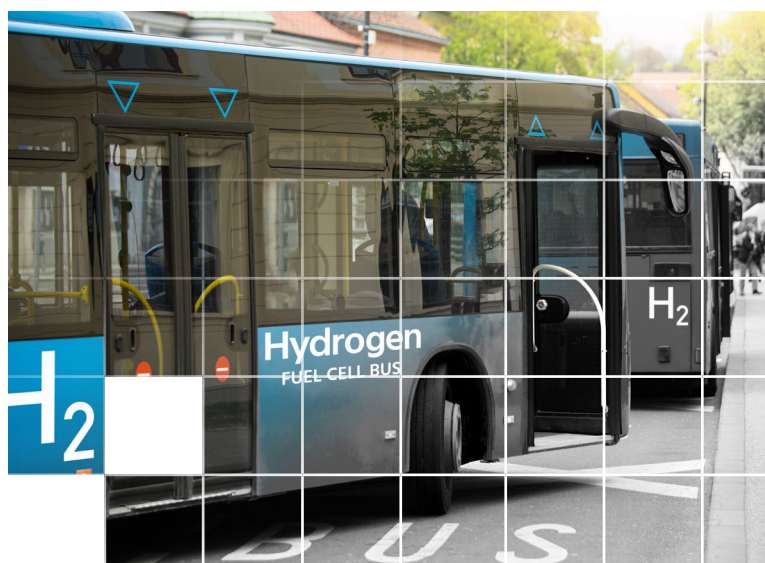
Jens says that there is a lot of investment in hydrogen right now in the unlisted space, and that it's very likely it will flow through into public markets and be an important theme later. Tim agrees, and talks about how hydrogen, can do many of the things that fossil fuels do now, like powering vehicles and being used as a form of energy storage, however burning it does not create any carbon emissions. While it's unlikely to be used in a meaningful way as fuel for cars, it could well be used for long-distance transport, particularly freight, as well as energy-intensive mining and other industrial processes.

Another point in hydrogen's favour is the immense amount of research dollars being poured into making it commercially successful, partly by the very large, deep-pocketed fossil fuel companies that are racing against time to secure their own commercial future. Australia, Europe and the US are all heavily

involved in projects pursuing hydrogen's commercial viability: Australia due to its plentiful natural resources and possibility of emerging as a renewable energy hub; Europe with its need to secure energy independence, with hydrogen one of the most likely viable options and the US as part of its massive subsidies program in the Inflation Reduction Act.

Tim and Jens both think hydrogen will emerge as a significant part of our future energy mix, however exactly how vital will become clearer over the next 5 years.

“It's currently really expensive to produce carbon-free hydrogen and it's also really difficult to transport.” **Tim Wood**



+ What are the key risks for investor in the transition?

In a global societal change of this magnitude and duration there are a high level of unknowns. While this makes investing challenging, it increases the opportunity set and is also likely to increase the investment return for those investors who thread the best path between the potholes. These are the risks that our top of our experts' minds.

Government regulation



Regulation plays a critical role in supporting the energy transition, both by penalising actions that contribute to climate change and by promoting solutions. Of course, it can also have the opposite effect and hinder investment. Regulation varies widely around the world and understanding the potential implications of regulation in each geographic area is a challenge for investors. It's nominated by all of our experts as one of the biggest risks to investments, particularly Chris who says:

"My biggest concern is the politics. If the politics changes, the policy changes and for a whole host of activity that's an economic game changer.

Jens says that Europe and the US, are in general both doing pretty well but pursuing two very different paths. The EU is putting in place an increasingly comprehensive network of regulations on companies which are enforcing change. Whereas the US is pursuing a more direct route through subsidies, trying to get the market to make the changes it wants by subsidising the actions and behaviour it seeks. Although for Chris this has its negatives: "Quite frankly, we're relying way too much on <government> subsidies...because the entities that are providing the subsidies are effectively bankrupt and the path we're going down, these projects don't generate necessarily positive NPVs <Net Present Value> relative to the capital they absorb" Jens says that while

the US and the EU are the main leaders in this area other countries are progressing and many are catching up quickly. Asia is progressing quickly in places like Singapore, which has ambitions of being a green hub, and China which has a massive investment programme in place.

Jens also talks about the importance of governments putting a price on carbon, or pollution, saying: "If you don't price pollution then there is no real incentive for people to do things differently... and the cost will have to be borne by society anyway." Whereas if a price is placed on pollution, then it helps in two ways, both by increasing the size of the market for companies that offer solutions and also by imposing a cost on companies that don't invest in those solutions.

Technological risk



With every country pursuing its own path towards Net Zero, increasingly-mind-boggling levels of investment, and a complex matrix of vested interests, picking the winners is fraught with uncertainty. With so many different technologies being explored, working out which ones will be successful, and to what level, is a high-stakes, educated guessing game.

“People know that sodium-ion batteries work, salt batteries, but what we don't have at this stage is big commercial production, to see what it's like to produce millions of those batteries at a time.”

Tim Wood

The companies which produce the solutions the world demands, and those investors that manage to back them early, are likely to become immensely wealthy. However, the cost of backing technologies which become superseded by newer and better technologies will be high. There will also be knock-on effects to companies and industries that support these technologies.

Geopolitical risk



The world is less stable than it was two years ago. Tensions between China and the US have continued to intensify, and Russia's invasion of Ukraine continues, with ongoing economic difficulties compounding the human tragedy. The changing geopolitical landscape has shifted global supply chains and led to an increase in countries and companies reshoring critical tasks and processes as well as sourcing products and services from 'friendlier', more politically stable countries.

Geopolitical risks are one of Jens' major concerns. He discusses how recent complexity has changed the landscape for the renewable transition including: solar panels, most of which are made in China; semiconductors which mostly come from either China or Taiwan; and essential minerals for electric batteries, which were often sourced from politically unstable countries, or

For Chris, what would be "an absolute, fundamental game changer is a global price on carbon. That levels the playing field, that changes the politics. Until we have that, you're just pitting one government against the other."

“If you don't price pollution then there is no real incentive for people to do things differently...and the cost will have to be borne by society anyway.”

Jens Peers

Tim gives one example of a promising, little-talked-about, early-stage technology, sodium-ion batteries. "People know that sodium-ion batteries work, salt batteries, but what we don't have at this stage is big commercial production, to see what it's like to produce millions of those batteries at a time. We also don't know how they perform in multiple charge and discharge environments, or high/low temperatures, high altitude etc." This is just one example of a technology in development, one which could potentially have a massive impact, but it's just one of hundreds.

Chris gives a counterpoint example, of discounting current technologies too early: "If you tell me we're going to move to EVs by 2030 and stop selling internal combustion engines that just tells me you're not a serious policy maker. You're not serious about understanding the problem. We can't produce the raw materials to do that. In the US, our grid couldn't handle it if we wanted to...the grid isn't set up for it."

Jens discusses how the risk curve lessens the closer that companies and technologies are towards maturity and towards becoming publicly accessible and investable. While many, ultimately losing, technologies will be weeded out before they publicly list, it's also likely that the leading horses will change multiple times during the race.

those with poor human rights records, including Russia and the Democratic Republic of the Congo.

Jens also discusses the global political complexity in moving the whole world to zero carbon and how bi-lateral and multi-lateral relationships between countries can be a big impediment to action and so a risk to investment. Developing countries point to the unfairness of developed countries having caused the current climate crisis by burning fossil fuels, while they are being pressured to adopt a less carbon intensive, and more expensive, path. While international initiatives like the Paris Climate Agreement are having some effect and are evidence of a growing collective awareness about the need for action, they have not yet fully risen to the challenge and negotiations and agreements remain tortuous and labyrinthine.

Capital expenditure



Assessing the merit of companies' capital expenditure (capex) is bread and butter for professional investors. But if companies are spending money on improving their ESG operations or credentials, should that be judged differently?

For Chris, it's an emphatic no: he assesses capex spend in exactly the same way.

"And I think investors are waking up to, even if that dollar has higher moral support, meaning it's for the good of mankind and our neighbour, that's great, but it's still free cash flow and it has an impact. Is that impact positive? Or are we lowering the returns and the profitability of the business? Is this an ongoing or is it a one-time project. Those are all considerations but by no means do you get a free pass, or do you look at it differently, and the market doesn't either."

Jens agrees that each capex spend needs to be judged on its own merits, saying that if companies are spending capital in a 'venture capital' kind of way, for example in investigating new technologies or business lines, that needs to be judged and valued very differently to companies that are spending money on scale. Each type of capex spend, and each individual spend, needs to be judged differently and this is what professional investors do - judge the value of that spend.

Tim says that emissions reduction capex spend is one of the key indicators he looks for in assessing companies' seriousness about transitioning their business to a lower carbon model. He will assess the suitability of that ESG spend as part of his process of deciding whether a business is a potential investment for IML.

Our experts agree that ESG spend can have additional merit either in reducing risk and/or improving a company's brand, and so can potentially be attributed extra value. For example Tim thinks that, broadly, renewable energy utilities should trade at a significant premium to non-renewable utilities, citing three reasons:

- + **The first** is they have lower capex and lower profit risk...they won't be required or forced to either close down existing profitable assets or build new ones for environmental reasons.
- + **The second one** is the potential introduction of carbon taxes...clearly if a company is producing fossil-fuel based electricity and a carbon tax is implemented in the areas it operates it will have to pay more for that generation.
- + **The third** is the operational and input cost risk. Over the last couple of years, we've seen coal and gas prices fluctuate wildly. If companies have fossil fuel-based generation and don't have access to long-term, low-priced contracts, volatile commodity costs are going to impact their profit and loss.

+ Where to from here

The global energy transition is vast, complex, rapidly-changing, daunting and exciting. It's also an immense shift in the global investment landscape that all investors need to factor into their decision-making. In its May 2023 World Energy Investment Report¹⁶ the IEA estimates that global investment in clean energy will rise by 24% between 2021 and 2023, compared to a 15% rise in fossil fuel investment over the same time frame. While this is a positive sign, the report also sounds a note of caution. 90% of clean energy investment is coming from advanced economies and China, presenting a serious risk of a two-paced transition, and dividing lines being drawn across the globe, unless this disparity is addressed.

At Natixis Investment Managers we are determined to help our clients uncover the best investment ideas and build contemporary investment solutions in partnership with our stable of experts. We believe that diversity of thought improves both insights and actions, so we bring our network of independent-minded affiliates together to tackle the big issues in both investing and society.

We are also committed to helping the world meet its Net Zero by 2050 targets by improving ESG and responsible investing. We are targeting more than 50% of assets from Natixis Investment Managers and its affiliates to be invested in impact and socially responsible investment by 2024.

16. <https://www.iea.org/reports/world-energy-investment-2023>

Some final thoughts from our experts:

Tim Wood:

“We are quite blessed here in Australia. There's no doubt that to manage the energy transition the world will need massive investment in infrastructure and will need steel, copper, aluminium and lithium and Australia is blessed with more than it needs of all these resources. Australia has a real opportunity to become the global export hub that drives the global energy transition.”

Chris Wallis:

“I think what we're going to go through is a fairly volatile period as it relates to the opportunities and energy and energy prices at the same time, so I think you need to be fairly targeted in what you invest in. You really need to know what molecules you're buying where and what the rules of the game are. Unless we eliminate large portions of the human race or cut our economies by 20 or 30% we are going to use more energy 10 years from now, 20 years from now and 30 years from now. So, I don't think it's a question of we're going to use this fuel and not this fuel. What you need to decide is, hey, if we're going to use natural gas and we're going to use crude oil what are the most environmentally friendly methodologies for producing and delivering it to market and who is doing that?”

Jens Peers:

“It's not easy to continue to adapt and it's going to take some time, but it should lead to significant economic opportunities as well. For some companies and countries it will be good news and for others it will be bad news. It's highly likely that in 50 years from now we'll think about fossil fuels like: what are those and why did we ever use them? Just like nobody's thinking about going to work on a horse these days.”

CONTRIBUTORS



Jens Peers, Global CIO of Equities and Fixed Income, Mirova

Jens Peers has been part of Mirova/Ostrum AM since 2013. Previously head of environmental equities at Kleinwort Benson Investors, Jens Peers is a thematic investment expert with 22 years of experience. At Kleinwort, he developed and managed several thematic strategies (demographic and environmental), including water, agribusiness, and clean tech. Jens joined Mirova in 2013 as CIO Sustainable Equities, and has been portfolio manager on the Global Sustainable Equity strategy since its launch in 2013.

Jens has considerable international experience and has extensive knowledge of consultants' and clients' needs. He is a frequent speaker at international conferences on environmental, water, and agricultural themes.

Jens holds a master's degree in applied economics from the University of Antwerp, Belgium. He is also a CFA® charterholder and is a certified CEFA (Certified European Financial Analyst of the BVFA/ABAF – Belgian Association of Financial Analysts).



Chris Wallis, CEO and CIO, Vaughan Nelson

Chris Wallis is Chief Executive Officer, Chief Investment Officer, and a Senior Portfolio Manager at Vaughan Nelson Investment Management. He serves on the portfolio management team and as a member of the firm's Management Committee.

Mr. Wallis joined the firm in 1999 and was previously employed by Simmons & Company International and Coopers & Lybrand, L.L.P. He has over 25 years of investment management, financial analysis, and accounting experience.

Mr. Wallis received a BBA from Baylor University and an MBA from Harvard Business School. He is a CFA® charterholder and a member of the CFA Society of Houston.



Tim Wood, Portfolio Manager and Head of ESG at IML

Tim Wood is Head of ESG at IML and Portfolio Manager for IML's Sustainable Future Fund. He is also co-portfolio manager for the Investors Mutual All Industrials Share Fund and has research coverage of Resources, Energy, Transport and Consumer Staples.

Tim has worked in equity research since 2008 and in financial services since 2002. He joined IML in 2019 from JP Morgan Asset Management and has worked in Melbourne, London and Hong Kong while covering Australian and international markets.

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