

# IN CONVERSATION WITH PIERRE ABADIE NORMAN CROWLEY JEAN MARC GALES

The Role of the Energy Transition in the Post-Covid Recovery

April 2021



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The following is an edited version of a discussion that took place between Pierre Abadie, Norman Crowley and Jean-Marc Gales in September 2020 and was moderated by Anette Burgdorf.



Anette: The Covid-19 pandemic has created the biggest global crisis in generations, sending shock waves through health systems, economies, and societies around the world. The sheer scale of this crisis has generated collective awareness of the systemic flaws in our economic system, most notably its reliance on delocalised production. The energy transition has an important role to play in accelerating the recovery - as we look to the future, a pandemic-resilient world requires a more local, circular, more energy-efficient economy. These developments are also critical to lower CO2 emissions and limit global warming to 1.5C in the long term.



We're seeking to answer some big questions during this discussion:

- What impact has the Covid crisis had on the energy transition?
- What should companies be doing to become more energy efficient?



• What are the opportunities for investors?



Anette: this year, the Earth overshoot day occurred more than 3 weeks later than in 2019 due to coronavirus induced lockdowns around the world. Is this good or bad news to you?



**Pierre:** I think people will think this is good news because it has been postponed by 3 weeks, but really we are speaking about a 3 week postponement on this overshoot day for at least 3 months of lockdown. So the answer is not only saying that we need to produce and consume less, the answer is more systemic. We need to have a scientific approach and we need to look at where we are consuming resources and where we are emitting CO2.

## Anette: You say that there is a climate emergency to act now, to reduce CO2 emissions today. And how would you do that?

Pierre: Yes. There is a climate emergency which is the need to reduce CO2 emissions. If you come back to science, scientists are saying that if we keep warming the planet, at some point we may reach a tipping point. For example, the tipping point we face regarding the climate is typically the melting of the permafrost or the de-icing of Greenland. Here we are changing the state of the planet. And this could come once we reach 2 degrees of global warming. Our activity is based on using fossil fuels which are fueling our economy, our GDP and at the same time warming the planet. What we need to look at is systematically opening the bonnet of our economy and look at where we are emitting CO2 and how we can reduce those emissions. In fact, the International Agency for Energy found a path that exists to reduce CO2 emissions, which is what we call a carbon neutrality path.

I would say that there are three main areas of focus. One is energy efficiency. It's the one that's the most effective. Basically reducing the amount of energy per unit of

production. This is where Norman is very active. The second one is renewables, something that we are already doing. And the third one is low carbon mobility. If we do this, then we can follow a path that is compatible with the 2 degrees. There is an emergency because at the current pace we are emitting CO2, we have approximately 10 years of CO2 credit, and after those 10 years we will be on the launch pad toward the 2 degrees.

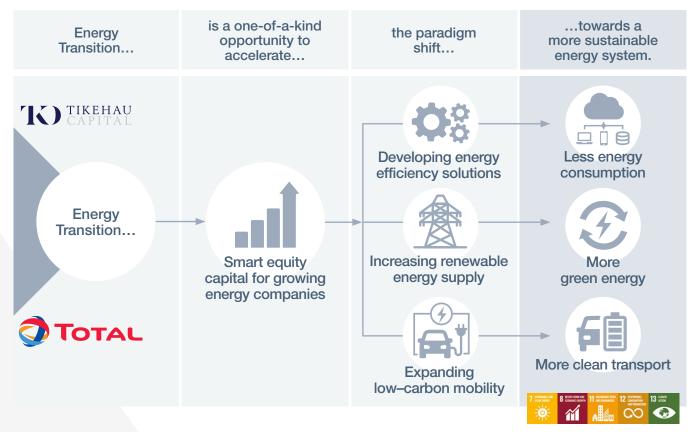


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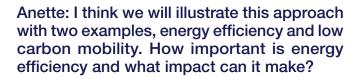
#### What We Do

We invest in profitable companies focusing on the fast-growing Energy Transition sector



#### Anette: And what is Tikehau Capital's position on this?

Pierre: Our position is very simple. We need to be very pragmatic. What we are trying to achieve is to reallocate the global savings toward companies that are transformative for the world system. What we are saying is that we are not going to wait for new technology to save us. We are not going to just believe in the change of policies. We need to invest in the companies that are reducing their energy consumption today. We need to invest in companies that are deploying renewable resources and the companies that are deploying more low carbon mobility and we need to strengthen their balance sheet. On the other side we need to give them the capacity to invest in the assets that help them reduce their negative impact on the planet.



**Norman:** Cheaper energy and a more attractive financial proposition works really, really well. From our point of view in terms of energy efficiency and energy services, there is a staggering statistic from Lawrence Livermore University in 2011 who did a deep piece of research about the global



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energy system. And what they found was shocking. What they found was that we waste about 70% of all the energy we dig out of the ground in the process of consuming it. And it's at least 70%. So to give you an idea, if you just take the industrial and commercial energy users, so that's factories and large buildings, those two sectors waste \$1.1trillion dollars every single year. So they buy this asset and then they just waste it over one trillion dollars. To give you an idea in terms of carbon this waste is 20 billion tones of carbon annually.

#### Fastest Impact to Energy Transition is Energy Efficiency

Commercial and Industrial energy users waste 70% of all energy consumed (Primary energy through to end use consumption)

At \$30 per MWH this reflects a total waste of \$1.13 Trillion annually or 20 billion tonnes of carbon

#### Why are we not efficient?



## Difficult to implement and track improvements

Factories and buildings are complicated and always changing



## Uncertain outcome of efficiency projects

Conditions are unpredictable (weather, output etc.)



#### Lack of capital

Capex budgets cut, especially in the time of Covid

Everybody gets excited about solar technology and wind technology, but wouldn't the most sensible thing to do before you acquire those technologies, is to stop wasting the energy that you're consuming. And that is what our company does. It stops this waste. And unsurprisingly, financially that's the most attractive return, because it's a much better return than solar and wind and much better return than building a new power plant because you're just stopping waste.



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Anette: This is a very interesting point and as you just said this energy waste is really shocking. My question is, how is it possible that our factories and our buildings are not more efficient after all of these efforts we have made?

**Norman:** The first reason begins with history. Energy was just very cheap before and so nobody cared about energy. You just dug it out of the ground and it didn't cost that much money. So the fact that your factory or building wasted a little bit, who cared. When most factories were built nobody cared about the cost of energy. The other thing is, you can't touch or feel energy. You can't put it in a bucket. So it's hard to track and that has been a consistent problem with tracking savings, with tracking where energy is going.

One of the most exciting things that is happening now is the digitisation of factories. One of the things we have is this amazing software platform which is like something out of a sci-fi movie like Minority Report. We have these tiny little sensors that we can put all over factories and we can track everything that's going on. And what that allows you to do is track energy being wasted, raw materials being wasted, and that becomes an incredibly powerful tool. We also insure the risk. So we work with some of the biggest insurance companies in the world and we say look, how about we save you \$200 million annually. If you don't believe we can do that, then we will insure that risk for you, and thanks to TKO we also have the ability to finance any upgrades off balance sheet, which makes it incredibly attractive.

# Anette: So this software platform allows a real time visibility into the cost savings and the impact?

Norman: Yes. You can just go to your phone if you're operating a plant and it will tell you all the places that you are losing money right now. And the reason we can do that now is because of cloud technology and also because the cost of sensors has come way down. The most extreme example would be a sensor that 10 years ago would have cost €6,000, now costs €85. So this amazing evolution in sensing technology has made a huge difference to energy optimisation.

## Anette: How do you contribute at Tikehau Capital to reduce CO2 emissions?

Pierre: First of all, I will just complete what Norman was saying. What is very interesting with the post-Covid world, is that what Crowley Carbon is doing is very relevant due to the limits of globalisation. In the past we were just following the path of finding the cheapest labour costs and delocalizing the production chain. Right now, we have seen that if we stop one part of the planet, we stop the whole system. So most of the big corporations have identified the need to re-localise after their risk analysis. But then they face the problem of cost competitiveness. In fact this is where energy efficiencies are at the core of the post-Covid recovery.

There are three main levers. One is digitalisation which Norman was speaking about. Another one is automisation of systems, so you are going to build factories which work well. And the last one is energy transition and the energy efficiency. When you have a factory you will have between 15% and 20% of your total costs is energy. And as Norman said, a factory can reduce up to 50%-70% of the energy used. So there is a huge amount of money that can be saved and this is very relevant when you try to re-localize your production. If we want to build a world that is more resilient, we need to build a world that is much more efficient to be competitive.

Anette: So we will now move onto our second illustration. It is about the transportation sector and how to move towards low carbon mobility. The transportation sector is currently responsible for the fastest growth in CO2 emissions. The sector is being disrupted and calls to re-localise production addressed to car manufactures have multiplied since the start of the Covid-19 pandemic. So Jean-Marc, what does this mean for the low carbon mobility sector and what is driving this shift to low carbon mobility?

Jean-Marc: It is a vast subject, if you talk about low carbon mobility. So what I want to talk about today is focusing on inner cities and on delivery modes and also on customers. We sometimes talk about low carbon transport and mobility as if it was a choice. When we listen to what Pierre and Norman said it definitely isn't a choice. It's more something that we need to do. Transportation accounts for over a quarter of all C02 emissions. My point on regulation is that it has led to the development of hybrid cars which is probably not the technology to go with in the future. It was a reflex from the major car makers to keep their production systems intact rather to think outside the box. Which is what we normally need to do. Regulation may help but it is certainly not sufficient and may lead us in the wrong direction. Consumers play a massive role because in the end they need to spend on low carbon mobility. I remember a phrase I always told the designers in the car companies where I worked was "please don't spend our money making something look ugly." In the end it needs to look great, it needs to look beautiful and enticing whilst also fitting the low mobility pattern and low carbon consumption pattern that we all want to attain.

Another major factor that helps is when we don't look at individual customers but to look at delivery systems for a second. This is going to be one of the major forces in making



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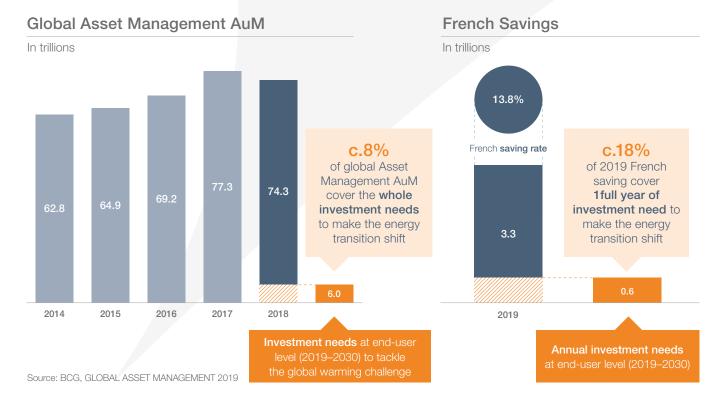
companies more efficient. Because it's very simple that if you do not provide a delivery service team to amazon or UPS that has low carbon mobility you won't be able to enter large cities anymore. And this is why highly populated areas have already said cars that emit carbon dioxide are not allowed into city centres.

### Anette: And what role does an asset manager play in all this?

Pierre: There is an important role for both public and private sector. When we speak about big numbers they are not actually that big. It makes sense to look at the sustainable development scenario. If we look at the difference of investment [between the base case and Sustainable Development Scenario], you are looking at only €200 billion a year. When you look at global savings, we are speaking about €80 trillion of global saving available. In France alone we are talking about €3.3 trillion of global savings. 60% of these savings is enough over the next 10 years to answer the global marginal investment required to make the energy transition on the planet. So the only question we should ask is, how do we make profitable investments towards this system? And this is exactly what we do with a company like Crowley Carbon, for example.



## Finance Might be the Only Industry Capable of Making the Shift in the Timeframe That We Have



#### Anette: Can you talk us through the sectors Crawley Carbon are focused on and also what role firms like Tikehau Capital can play?

**Norman:** We work in sectors mainly with massive energy consumption. So things you never really think about like concrete. In order to make concrete you have to boil rock. And if you think about the amount of energy it takes to boil rock. Likewise with steel for instance and the food sector which is huge for us. And the reason food is huge is because energy makes up an awful lot of the cost base for creating food. To give you an idea, if I take a packaging manufacturer that we work with, they are one of the biggest manufacturers of glass containers in the world and their energy bill was \$1.2 billion annually. The project we are working on with them at the moment will save them over \$200 million a year.

Now where TKO fits into that is critical actually. If you go to a company like that and you say look this is a three year pay back to do this. So that's a no-brainer, it's north of a 30% return on your investment so very attractive. But because we just appeared in this manufacturer's door, if you think about \$200 million a year, three year payback that's \$600 million



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that they have to come up with. Now they didn't know at the beginning of the year that they needed \$600 million and they probably don't have \$600 million burning a hole in their pocket. So somebody has to provide \$600 million and it's a no brainer because everyone is going to save a lot of money, so the upside is huge. And what we've been working on with TKO is the ability to do what's called Shared Savings. So we'll work with that manufacturer and we say we're going save you \$200 million a year, how about we take \$100 million roughly, you take the other \$100 million. Then what we do at TKO is finance that. You can't just finance that easily, you have to figure out a way that it doesn't affect the balance sheet of

that manufacturer because they might be carrying quite a lot of debt. So you don't want to make that situation worse so what we've developed at TKO is this amazing ability to share the savings but not damage that client's balance sheet in the process. And that's absolutely revolutionary because if you think about it, I'm going to save you \$100 million a year on your P&L, it's not going to affect your balance sheet and if you don't believe a word I'm saying I'm going to insure that risk with the biggest insurance company in the world. Now why wouldn't you jump on that? Now thankfully a lot of companies are jumping on that.

## Anette, what are the big future developments we should look out for in low carbon mobility?

**Jean-Marc.** Well the first one is mobility in large cities which we need to rethink totally. The average speed in cities has dropped to 10kmph and we still develop cars to reach maximum speeds of up to 200kmph. Not very suitable for the transportation users we want. You are quicker in most areas now with a push bike than with car.

The most important one is that we change our mind set in mobility in large urban areas. Something which may help is to view transportation as a service and not only as property. On average nobody uses their cars more than 5%, but if you were to use them for 50% you would free the budget of most houses by thousands of euros or dollars which is amazing. However, this change probably requires new entrants that challenge the status quo. Our industry has basically remained the same since the car was invented or let's say since Henry Ford invented the assembly line and cities and countries changed to accommodate cars. Since then there hasn't been a major change.

But it's fair to say that change may come very fast, changes tend to be quicker and not linear but certainly have a disruptive pattern. I'll give you a couple of examples. There's a company in California called Tesla which you all know. It has a market cap of over \$450 billion right now. It only started 17 years ago. It started transforming Lotus Elises in very low numbers and very quickly because of the willingness to challenge the status quo it has become the most valuable automotive company in the world. Not only that, it's worth more than the next 10 companies in terms of market capitalisation all put together.

Just to explain my role at TKO, I speak as an industry adviser, an industry specialist, but I above all speak as an operating

partner of TKO. I was involved in the acquisition of a company named Eurogroup. That's another nice example, because I admit I hadn't heard of this company before I was asked to help acquire a 30% stake in it. It's a company that until 2017 hasn't been in automotive at all. But today, in 2020, it's the market leader for rotors and stators for electrical engines. About €400 million revenue a year, about 2,000 people and it's a company that is growing. Our objective as a board of Eurogroup is to double revenue. But above all is to quadruple the share of the revenue that we currently have in smart mobility and in rotors and stators for electrical engines. It's a market that is growing, the pure electrical propulsion market grows 25% on a yearly basis. And it all feeds into the reduction of the increasing temperatures that we need to change quickly.



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JEAN-MARC GALES

Anette: What can be done to encourage governments to invest more funding/ cofunding (PPP etc.) in building heating and cooling rather than the status quo low hanging fruit of targeting transport?

Norman: It's interesting that people look to the government on this kind of thing. If you take the return on investment on transforming a building like a commercial building. If you're using your own capital it's probably 50% return so it doesn't need governments at all. It doesn't need a PPP. You need PPP to build roads and things like that, but governments aren't the actors there. Government's role is to act as a stick rather than a carrot. They just need to say, if you take the Australian market as an example, they just turned around and said - if you can't get your building to conform to this standard, then we're going to tax your rental income on it. And so Government's role in a lot of cases is to act

as the policeman or the stick rather than the carrot. So private capital, whether it's TKO or anybody else, they are the operator. They can provide capital, can get a return and everybody wins.

Pierre: Yes I agree with that. The only thing is to be able to deploy this capital we need to find companies like Green Yellow and Crowley Carbon. They need to be credible to provide the technical solution and then we need to finance them. Because at the end of the day the end user doesn't want to invest themselves, they want to benefit from the savings. And they are willing to split with you most of the value of the saving they are making if they don't invest themselves. So it's more our role, the private sector, to be good operationally and our role is to find the likes of Norman and to finance him.

Anette: Pierre, you said that the post-Covid recovery is an opportunity to accelerate the energy transition, don't you think government will focus on the economy first and it could slow down the fight against climate change?

**Pierre:** In fact, at the end of the day what we see is totally the opposite. All the stimulus packages that were put in place put climate at the core of it. This is linked with the need for re-localisation. If you want to be cost competitive you need to be more efficient. To be more efficient, energy has got a huge role to play there.

# Anette: Jean-Marc, can you give us some insight on the strategic plans of large car manufacturers regarding electric vehicles and where they're moving ahead?

Jean-Marc: I mentioned previously the nervousness that car makers have here, including autonomous driving where they are not quite sure when it will come. And there are a couple of things that they probably should have done differently. They should have taken unique platforms for electrical cars much more seriously than they have. They tried to implement additional drive-trains that can have up to 50km autonomy into some existing cars. But having a car with two drive-trains is never a good option. It's always good to have just one. And I know that some of my colleagues have different opinions but in terms of cost, hybrid is certainly the most expensive.

If you look at California, it's not happened over the last 10 or 20 years, it has happened the last 30 years. If you look at the 1990s when everything was growing and basically most car makers in Europe were living on the money they made in the US and in Europe and then starting in the year 2000 they became extremely comfortable with the Chinese market. And then they made money out of the Chinese market and that made car manufacturers complacent which is not a good recipe for inventiveness and creativity. One of our jobs at TKO is definitely identifying those winners, movers and shakers of the future and I think we are on good track there.



# Anett: Pierre, to allocate capital to the energy transition, investors need returns. Is this a real investment opportunity that will lead to returns?

Pierre: Yes to be honest, when we look right now at the energy transition space, we can see that it's basically one of the only growing segments in the world that's not entering into recession. And growth usually comes with return, that's one of our main criteria for investing. Investing into a company that is growing and we can make a return on EBITDA growth. Energy transition is certainly one of the only segments that, despite the crisis, should still provide a very healthy return.

# Anette: Norman, what about the biggest emitters of CO2, the oil and gas companies? Is there anything that can be done there?

**Norman:** Yes it's a good question. In steel it's tougher because you're melting steel. But what we find in the steel sector is you might not be able to get a 30% reduction but you can get a 10% reduction with a super-fast payback. Cement is all about the fuel source so biomass and the use of biomass has reduced dramatically the cost of firing kilns. But also through data you can easily get 15% in the cement industry with a very fast payback. Glass, there are monster opportunities. So glass we are getting about 30% reductions, relatively fast paybacks. And refineries, whether it's oil, midstream, bio, oil the opportunity is huge. We just started a project in the U.S on a midstream facility and it's a 30% reduction. The arrival of the internet and Internet of Things has changed everything. It's opened up opportunities way more than we could have ever imagined.

# Anette: How do you identify or choose companies in the decarbonised mobility space? What are your priorities as an investor?

**Jean-Marc:** It's about looking at a car or anything that vaguely provides mobility and looking what's going to change. The chassis will change a bit because you need to provide space for batteries. Those things are still going to be there for some time but still not growing at the same pace as

we saw them growing in the past. What is massively growing is anything around the electrical propulsion system.

Also, what is also extremely interesting is companies that provide software. Software for battery management systems, software for the interaction between the battery and the engine, how the wheels turn. Battery providers too. So what we are looking for is basically companies that are ahead in one of those technological areas but above all companies that already have a first contract.

We are fairly good in Europe at funding those companies. And making them grow in the first stages. We're not very good at making them grow in the next stages. If you see for instance there are many, many start-ups in the electric mobility field. Most importantly, they need to have a contract, a major contract. Because then you adopt the discipline of the major car makers and their processes and that is absolutely vital because we are talking about a device that transports people so in terms of safety, in terms of reliability, in terms of quality it needs to satisfy certain criteria.

It's about identifying that potential, identifying that uniqueness in the growth of the company. Making sure that there is nothing that you can copy easily, making sure that you have already made so many parts that you have an advantage. The advantage of scale is not to be underestimated here. We've seen that in Tesla. As soon as they went above 300,000 cars their capitalisation soared. Certainly one of the reasons. And we do have a few of those up our sleeve as well.

## Anette: Pierre, a few words of conclusion, what should we remember from this discussion?

Pierre: To summarise, what we are saying today is that Covid is of course an issue for everyone. But it does trigger a real driver for the energy transition because for the first time we have an alignment of all the planets. We are not going to invest into companies for climate, in fact for the first time those companies that are making the transformation of the ecosystem are required to make the system more resilient. And the consequence of it is that we are making the system more competitive.

The other key element is that we cannot rely on the government to do it. We really need to reallocate global savings. To be able to strengthen the balance sheet of all those companies to accelerate this move. The market is super deep. The world is in need of these changes and at the end of the day, we have seen that de-growth is not the solution. In fact it is growth that is transforming the world. The only choice that we have to make is where we want to grow.

We want to make a world that is, at the end of the day, sustainable. And the amount of money that's required is not that huge. It's globally, 8% of the global saving. And since this is profitable we can make this allocation, we can make this investment and within 10 years we can have a sustainable world.



We want to make a world that is, at the end of the day, sustainable.

PIERRE ABADIE

Pierre Abadie is Co-Head of the Energy Transition Practice at Tikehau Capital. Pierre joined TKO's energy team in 2018. Prior to that, he worked for 16 years at Total. He has been exposed to the entire energy chain from upstream to renewables. TKO are a €28bn alternative asset manager with almost €3 billion of shareholder equity. With 12 offices around the world and around 600 staff, the firm invests across the alternatives spectrum with a focus on private debt, private equity, real assets and capital market strategies.

**Norman Crowley** is a serial entrepreneur. In 2010, he founded his fourth business, Crowley Carbon which has established itself as a rapidly scaling global leader in energy and solar services. It has offices in over 10 countries around the world and has a workforce in excess of 200 employees. He set up Crowley Carbon because he wanted to set up a business that made a real change in addressing the global climate issue and is driven by a real passion for 'Cooling The Planet'.

**Jean-Marc Gales** is a very senior automotive general manager with a strong turnaround track record. He was #2 at the Peugeot Group (€55.4bn turnover) as CEO of Peugeot and Citroën (€45bn turnover) and a member of the Main Board. He is currently Chairman of Woodham Mortimer and has been Senior Advisor to the Chairman of Geely Auto, the Chinese automotive group, and a member of the main board of Dongfeng Peugeot Citroën Automobile Co Ltd, Peugeot's Chinese JV, and of Europear.

Anette Burgdorf is a European journalist with more than 15 years of experience on French and German TV and radio networks. She is a trilingual presenter (French, English and German) at business conferences and meetings and runs media training courses for business leaders and top managers. She is also a certified executive coach (from the HEC Business School). Anette holds a diploma in the tourism industry from the Munich Business School and a master in Cultural business management from the University of Passau.

The Role of the Energy Transition in the Post-Covid Recovery

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