

KEYNOTE INTERVIEW

It all comes down to power



*Decarbonisation and other energy trends are creating a generational investment opportunity, says InfraVia's partner **Bruno Candès***

Appetite for clean energy investment is showing little sign of slowing. Last year, financing of European renewables totalled almost \$110 billion, a rise of more than 6 percent, according to the International Energy Agency (IEA). Added to that, investment in power grids increased by more than 20 percent, hitting shy of \$65 billion, as European countries looked to shift their energy supplies away from Russian gas.

The scale of capital required to fund the energy transition is enormous, especially given the EU's pledge to slash its greenhouse gas emissions by at least 50 percent by the end of the decade. Bruno Candès, a partner at European private equity firm InfraVia Capital Partners, examines the many attractive

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opportunities emerging and weighs in on the key challenges that lie ahead.

Q How has recent economic volatility impacted enthusiasm for the energy transition?

If anything, it has had the opposite effect. While valuations of publicly traded securities have suffered, institutional investors continue to show strong interest in energy infrastructure private markets. As a matter of fact, we still observe that significant capital is available to finance the energy transition, including a lot of liquidity on the debt

side as well. Although the market has become highly polarised since 2022, we certainly see renewable energy emerging as one of the winners of that polarisation.

But it is probably also important to look at the demand for capital on a longer-term basis. To meet the EU's Fit For 55 package, which aims to reduce greenhouse gas emissions by 55 percent by 2030, as well as the net-zero 2050 objective, we need to decarbonise our energy mix completely. This is going to require trillions of investments.

To be more specific, it is estimated that to meet the objectives of the Paris Agreement, \$5 trillion needs to be invested each year, which translates to roughly 3 percent of global GDP.

Within that framework, it means adding 1,000 GW of additional renewable energy capacity every year. That is enormous and our view remains that we are just at the beginning of this generational investment opportunity.

Q What role should regulation play?

Evidently, a stable fiscal framework with policy support is important. For example, if we zoom into Europe, the recently elected European Commission has a very clear and ambitious agenda towards the transition. That's very positive for the sector.

But today, the trajectory and tailwinds go well beyond that. If we look back 15 to 20 years ago, the market was highly regulated and operated through contracted feed-in-tariff type schemes. That is not the case anymore. Today, the energy sector is probably more complex but also less dependent on regulation.

For example, a relatively liquid PPA market has emerged allowing renewable IPP players to access industrial end-customers directly. Another example would be the hybridisation potential – notably with batteries – enabling operators not only to maximise capture price but also to start offering more comprehensive solutions to their clients. And all of that, of course, goes well beyond policy support.

As a case in point, we have recently invested in two solar PV platforms focusing on distributed generation and off-grid solutions. We believe that there is significant potential to transform these businesses into multi-technology IPPs, able to better monetise the “green-ness” of their electrons as they bring generation closer to consumption.

Q The expansion of renewables will clearly place pressures on transmission and legacy grid infrastructure. Where do you see the most attractive opportunities in

Q How important is it to fund and build out the circular economy if we want to achieve net zero?

It is absolutely critical. We operate a European recycling infrastructure platform called Blue Phoenix Group, which specialises in recycling municipal waste incineration bottom ashes into valuable resources such as construction aggregates, ferrous metals and precious metals. That is a very strong business model on its own, but there are many opportunities to expand further.

If we are serious about positively impacting the industry, we should begin to consider Scope 4 emissions, which essentially refer to avoided emissions.

In the current environment, the prices of recycled materials are typically higher than those of virgin materials. However, when factoring in carbon costs and avoided emissions, there may be room to change the equation. That is the direction of travel, and this represents a massive opportunity for recycling.

Additionally, if there were regulations promoting increased recycling, it would create stronger demand. This in turn, would encourage more investors to confidently invest in the sector, ultimately lowering the cost of recycling. The economic model for municipal waste recycling is already well established, but for more complex recycling processes both regulatory and economical frameworks need to be further developed.



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energy distribution and storage?

To begin with, we particularly like batteries. We have been already very active in the sector in the Netherlands and Belgium through our company GIGA Storage. While we don't believe there will be too much value to be found in the capacity market, we see significant potential in the day ahead or intraday markets.

In parallel, and as the energy mix is re-designed, there is a massive

opportunity to invest in the grid itself. This presents both an intriguing industrial challenge and a complex issue of capital formation. Investors are more likely to show up if regulation and returns are attractive. Specifically, there are questions about whether sufficient equity will be available to invest in single digit returns projects, even with appropriate regulation. Operators can't just take the availability of capital for granted given the magnitude of the demand and the competition to get project funded.

Q How does that extend to electric vehicles and their compatibility with batteries?

No one can dispute that the future direction is shifting from combustion engines to electric vehicles. However, predicting the pace of this transition is extremely challenging, and recent industrial accidents are probably a good illustration of that.

At the infrastructure level, it also onboard a fair amount of uncertainties. Firstly, we are still unclear on how charging patterns will evolve, particularly between home charging, destination charging or even highway fast charging. Across these models, it is tricky to predict who will really own the traffic, in particular as technological developments suggest 1,000km plus autonomy for the next generation of vehicles.

Then, another unspoken truth about the sector is that it really is an energy trading business. You are buying and selling electricity. If the market is very stable, then it is relatively straightforward. But if the market is volatile, as we have seen in recent years, you can be quickly squeezed in the short position. Overall, we are very prudent on the sector.

Q Where do you see the greatest challenges to energy transition efforts?

Energy policies need to address essentially three main constraints:

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decarbonisation, security of supply and last but not least, affordability. This energy love triangle is quite a complex one.

Firstly, we need to recognise that energy transition requires nothing less than completely reinventing our industrial system. We not only need to decarbonise our energy mix but also develop new technologies for recycling and alternative fuels. One can also probably throw into the mix the need to reinvent nuclear, in particular to power off-grid AI-data centres.

We should not underestimate the sheer complexity of these industrial challenges! As an example, we are big believers that metal supply chains need to be redesigned if not re-invented. Decarbonisation relies a lot on electrification of usages, which, as we discussed before, means investing at scale in batteries, grids and renewable power generation. And all these projects are themselves heavily reliant on metals supply chains. If we don't invest in this sector, there will be bottlenecks that may impact affordability and the pace of the transition.

On top of this, we shouldn't be naïve about the reality that temperature is

rising on the geopolitical front. We have exited a period where energy was affordable, global and available. We have since entered a new cycle where energy is more expensive and where basic supply is exposed to geopolitical considerations. That is undoubtable a big challenge.

I would like to point to another blind spot of the transition. And perhaps an idiosyncratic one: education. Net zero will not happen unless we train and educate millions of engineers to invent new technology and design and deliver new infrastructure. We can regulate whatever we want at the policy level, but if we don't have the engineers to invent a new industrial ecosystem then we are doomed to fail.

Q As the energy transition evolves, which subsectors do you believe look particularly attractive?

When we look at the energy transition, the first priority we see is to deploy renewables at scale. That remains a fantastic investment opportunity and we especially like solar as it is simple from a rollout point of view. If we want to decarbonise, the world will also need to build out a massive batteries-based storage system. Another interesting opportunity is probably the rise of distributed energy and off-grid solutions to accelerate the integration of renewables down into the networks without relying too much on massive grid transformation. This will be particularly relevant for data centres.

Recycling is only just getting off the ground, but we believe it will also gain significant momentum as corporates start looking at the costs of carbon, the regulation as well as avoided emissions.

I believe that hydrogen is also well suited to industrial hard-to-abate sectors like cement and steel. You can produce hydrogen at a reasonable cost with utility scale solar or nuclear power generation. That is quite an exciting development as well albeit a bit early to fully qualify for infrastructure. ■