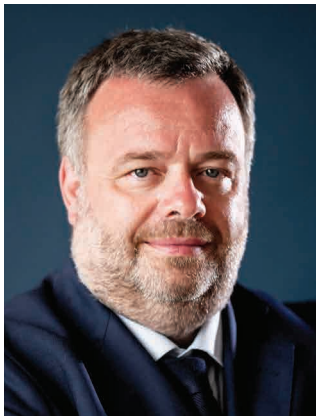
KEYNOTE INTERVIEW

Changing patterns require fresh thinking on recycling



Removing more used metal from the waste process is a necessary step, believes InfraVia's Bruno Candès

InfraVia Capital invests in technologies it believes can be immediate solutions to the energy transition, as well as in companies that can accommodate future needs and changing patterns to support it. Bruno Candès is the partner co-ordinating infrastructure investment activities and is passionate about identifying the trends that will drive future investment opportunities.

Among InfraVia's recent deals is Blue Phoenix Group, which fits into the "changing patterns" mantra. It is a key player in metals recycling, which is an area Candès sees as an essential, if overlooked, component of the energy transition – the transition from a carbon economy to one that is metal-based.

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Q How do you characterise the challenges around energy transition?

It is important for investors to realise that energy transition is a much broader topic than simply renewable energy and power supply. It encompasses a range of different opportunities in areas such as storage, recycling and hydrogen. It also requires a firm grip of general themes such as flexibility, resource management and carbon capture.

There are many challenges for investors, not least that transition is happening in a very volatile energy market that frankly lacked stability even before the Russian invasion of Ukraine. There was considerable turbulence in energy prices in 2019, and there still is. This makes the decision process for investors arguably more difficult.

In addition to this, regulation is adding to the confusion around the viability of different business models, and there are fundamental discussions that are still needed on market design.

It is good to see that the EU is seeking to create stability and funding to make market participants more serious about carbon capture. But there is quite a challenge around where incentives and subsidies should be directed. For example, should they go towards using hydrogen for mobility in vehicles, or should they go towards the use of hydrogen in industrial processing?

Finally, a major challenge for governments is that this energy transition is also by its nature inflationary, at a time when combating inflation is the priority. If you think that we will need between 2 to 3 percent of GDP to accelerate the transition, it has to be recognised that this capex may contribute to higher inflation in an already highly inflationary environment.

Q What is the particular challenge around recycling?

The most overlooked challenge is that we are moving from a carbon-based economy to one based on metals. Low-tech carbon processes are being replaced by high-tech metal ones.

Consider that the metal used in an electric vehicle is six times greater than the metal used in a conventional vehicle. Not just in the chassis of the vehicle but also in the battery. The same is true in power generation. An offshore wind generation plant uses 10x the metal required by a natural gas generation plant.

This new reality poses particular problems. How do you secure the required supply of metal? How do you structure your supply chain around that much greater requirement?

It is from this perspective that recycling is clearly going to play a vital role and must be incorporated in the design of any economic model that is 'future fit'.

This explosion in metal demand needs a new approach from investors with a long-term view of the possibilities around recycling. Recycling is essential for the transition from a carbon economy to a metal economy.

It is very important to look at how we can extract more used metal from the waste process and create a circular economy. Incinerated waste actually has a lot of metals that can be recycled, refined, then sold into the metal markets. Processing plants can contribute to increase the amount of waste diverted from landfill, which is a clear regulatory goal in Europe.

There is also a major regulatory push for companies to limit their carbon footprint at present, which is leading them towards a better appreciation of all the opportunities available in the various recycling markets. The move towards a more circular economy is here. There is an old saying that translates as 'our garbage is full of gold'. I think this is true, and not just gold, but plenty of silver, aluminium and copper too.

Q What is the role of regulators in developing the recycled metals market?

A crucial one. Regulation is pushing this along. For example, in the UK there is legislation that requires the use of recycled materials in road construction. Likewise, in the EU there is a firm commitment to the circular economy, shown by the EU Circular Economy Package that promotes recycling and a community-wide target to recycle 65 percent of municipal waste by 2035.

In addition, the EU aims to reduce the amount of landfill – which currently accounts for around 25 percent of municipal waste – by introducing a cap of a maximum 10 percent to landfill by 2035. This means there will be a significant increase in the amount of incineration and therefore the quantity of incinerator bottom ashes available.

It is not just in Europe that regulators are driving this forwards. In the US, the Inflation Reduction Act is quite spectacular in moving the dial. Although recycling is only one small part of the Act, it is a very significant step in the right direction. Although, given that recycling has to be locally based, it is unlikely any US incentives will impact European recyclers.

Consideration around supply security is not a major factor here; yet, for the moment it is all about carbon footprint. But it is certainly on the agenda and could become a major consideration in the future, particularly for markets such as cobalt and lithium. All these changes taken together mean that the recycling of metals market is currently exploding.

Q Are there specific technologies capable of doing this?

We have invested in a company called Blue Phoenix Group, which is effectively a "recycler of the non-recyclable" that provides essential services to energy-from-waste operators. They essentially give a second life to burnt residues of waste resulting from the incineration process (incinerator bottom ashes, or IBA) generated by energy-from-waste operators. They have developed the technology and processing facilities that enable them to extract and produce marketable mineral aggregates and also extract and refine metals from the ashes.

This is not rocket science, but there are barriers to entry, in as much that it requires technological knowledge and expertise to efficiently and cost-effectively manage the processing and recycling of IBA, significant capex investment and industrial expertise to produce marketable materials, as well as the offtake network to then dispose of the aggregates and metals.

A network of customers giving you a pipeline of materials is important. These typically tend to be local utility companies, the vast majority of which are private companies running public concessions. The very large companies such as Suez Group and Veolia can internalise the activity and do it themselves, but often prefer to offload to a specialist.

The market also remains overwhelmingly regional, with local refiners linked directly to energy-from-waste operators. For example, in Germany the incinerators are often semi-public entities in each of the different municipalities.

The technology also needs to be embedded in the supply chain and linked to the capability to sell off the metals obtained from the recycling process. Over and above metals, Blue Phoenix looks to increase the quality and circularity of its products through a focus on R&D and innovation.

In the UK, aggregates are being sold mostly to construction projects, while in the Netherlands, Blue Phoenix is adapting to the specific Dutch legislation and has developed a new solution to provide an innovative washing solution for cleaner aggregates. The company is also exploring new routes to market, such as an IBA filler that can partially replace cement in concrete production.

Q Which metals are we talking about, and how big could the market be?

There are four key metals that we obtain from the recycling process: aluminium, copper, gold and silver. Their volume is in that order, but their value is roughly equal.

Today, the value of the recycled metal market is small in comparison with the overall value of metals traded. In the future, it is likely to remain marginal in a market like copper. However, I think it could become quite significant in other areas. For example, cobalt or graphite could become much bigger recycling markets.

The current copper recycled market is 3.7 megatonnes and is expected to grow over the long term to 12Mt, representing 32 percent of the total copper market. On the other side, the aluminium recycled market represents 34Mt and is expected to grow to 95Mt, which is equivalent to 49 percent of the total aluminium market size.

The real dynamic here, though, is coming from the desire and the requirement for companies to reduce their carbon footprint. This is very similar to what is going on in the power generation market and will result in comparable market dynamics.

There may be one single pricing mechanism, but at the same time companies are very keen to get an energy efficiency certificate. Regulators can also put their hands on the scales by introducing incentives or tax penalties around carbon footprints to help drive the concept of a real circular economy further forward.

So, while these metals are currently sold at the prevailing price, it is not impossible to imagine that, at some point in the future, recycled metals could trade at a premium to primary sourced metals (the extraction process for primary metals being much more carbon intensive than recycling).

"We are moving from a carbon-based economy to one based on metals"

Q Which geographies are important?

We are currently in the UK, the Netherlands and Germany. We are also developing projects and looking at Australia, the Middle East and Singapore.

We would certainly consider other Asian markets, but I have to say at present there is less of a focus on recycling there than we see in Europe. This will of course change over the longer term as the price of metals rises and the economics I have outlined begin to bite.

As we transition from a carbon economy to one that is metal-based, recycling metal has a vital role in just about every market. ■