Ardian

Infrastructure assets have to address carbon emissions if they want to grow

Recently, **Chase McWhorter,** Institutional Real Estate, Inc.'s managing director, *Institutional Investing in Infrastructure,* spoke with **Mathias Burghardt,** head of infrastructure, and **Pauline Thomson,** senior investment manager, Paris, both of Ardian. Following is an excerpt of that conversation.

Ardian's latest infrastructure report takes a look at how technological innovation can help infrastructure assets lessen their impact on the environment. What are the biggest takeaways from this research?

Mathias Burghardt: Ardian has been investing directly in European infrastructure assets since 2005 utilizing an industrial approach to asset management. In 2018, we launched a mid-market infra fund focused on the Americas and raised $800 million. We started focusing on digital transformation of our infrastructure investments in both regions several years ago, and our vision is that, in order to avoid our infrastructure becoming obsolete over time, we need to take full advantage of new and emerging technologies to help our companies to be much more focused on users' needs and the impact their businesses have on their environment. To help, we have created score systems to act as a strategic compass. Based on this model, an infrastructure asset can be evaluated through five criteria: It has to be intelligent, open, resilient, prolific and impactful.

We are convinced at Ardian that the climate crisis is probably the key topic today, and this issue will drive a lot of things in the future, especially infrastructure, which provides public services and has to be there to support communities. The digital transformation of our infrastructure should be very much geared toward reducing its impact on the environment. To do so, companies need to be able to monitor and analyze data to see how best infrastructure can serve the climate. I am convinced, for example, that an airport's ability to grow — at least, pre-COVID-19 — is linked to its ability to reduce carbon emissions. But reducing consumption will not be enough. The only way to reduce emissions on a massive scale is to use new technology. It can really be a game changer in terms of societal emissions, and more specifically, by society's infrastructure. Obviously, all the technology — telecommunication technology and digital technology — is a big part of the issue, so we have also analyzed how we can cut or limit the emissions stemming from digital technology.

In the report, you suggest that the more environmentally efficient the infrastructure asset is, the lower its risk premium and the better its long-term return. How so?

Burghardt: There are two reasons to focus on making our infrastructure more carbon efficient. First, it is our duty to our children to limit the destructive impact we have on the environment and work harder towards protecting our planet. The second reason is that, not only individuals and communities, but now institutional investors are demanding that we take a longer-term approach and optimize our role in reducing carbon emissions. We recently raised a very large fund — over €6 billion in a matter of months with more than 150

investors from all over the world. The No. 1 question we received was on environmental matters. That says a lot. A few years ago, there were only a few people asking a question on environmental impact, but now it has become a key topic. I am personally convinced that in the not-too-distant future, as caretakers of society's infrastructure assets, we will be assessed as much on our ability to be carbon efficient as we are on our financial performance.

On top of that, non-carbon-efficient infrastructure will struggle to be sold. We see that already with coal plants. Nobody wants them. So if you buy an infrastructure asset that is not carbon efficient, you won't be able to sell it, or the people who buy it will factor a massive transformation of it into the price. You can't be efficient from a financial and operational point of view, if you have infrastructure that is obsolete in terms of its environmental impact. So even for pure financial reasons, it is in every owner's interest to make sure infrastructure is at the top in terms of efficiency in its environmental impact and carbon emissions.

We are arguably one of the first movers in terms of being transparent about our environmental performance with our investors, year after year, of each asset, so they can see the evolution of the portfolio and how our infrastructure assets are becoming increasingly more efficient. But I think that is the path we have to follow, and the same investors will ultimately require our peers to do this level of reporting as well, creating a very positive virtual circle on all of us, developing healthy competition for us all to be the most efficient in terms of carbon emissions.

A key theme of the report is that infrastructure investors not only need to make their portfolios intelligent, but also to mitigate climate change. Can you expand on that idea?

Pauline Thomson: What we mean by that is that we really need now to see how we can best harness technology for our portfolio assets to reduce carbon emissions. What we see in our portfolio is that the pillar by which everything starts, in terms of digital maturity, is the intelligence pillar — the ability for the infrastructure to best operate and to know in real time its performance. This is the pillar on which all our companies are the most mature because it directly has an impact on operations. While the initial objective is to increase the operational efficiency and improve the user experience, it is also to assess the health of an infrastructure asset and, in particular, it reduces the environmental impact, because you can better monitor your energy consumption and any potential negative externalities that your activity produces on your surrounding environment. Naples airport is a good example because it has succeeded in reducing its emission through gaining more intelligence on its operations, even though the traffic has increased. For example, they have optimized their aircraft taxi time on the tarmac, which is a big source of pollution, and they have optimized the energy consumption in the airport. The goal is for tomorrow's infrastructure to be part of the new value loop that basically

harnesses technology and social responsibility, at the service of a better social responsibility and environmental responsibility.

Can you walk us through a case study of intelligent infrastructure helping achieve climate goals?

Thomson: Our initiative called Air Carbon is a great example of it. Air Carbon provides real-time estimates of an airport's carbon emissions, most of which are caused by aircrafts and transport accessing the airport. We are now rolling out the tools in all our Italian airports, and we are expanding it. We are also working on a new project, Car Carbon, which will basically do the same thing, but for all our road assets, which means calculating in real time the emissions of our road assets.

This kind of instrument will allow us to have much better dialogue with the public authorities, saying, "We can help you to reduce the carbon emissions." In terms of the roads, we can even imagine helping them reduce the carbon emissions, the smog at the peak hours, by promoting car-sharing to reduce the number of cars on the roads. Today all the payment mechanisms are based on the number of cars, while what should matter is how many people we are transporting. This kind of instrument to measure emissions could help us to evolve the business model.

So that is the genesis of this intelligence — it starts analyzing the assets after you acquire them?

Burghardt: Yes, we must evolve our business models if we want to be allowed to grow. On the surface, car-sharing might not look good for an operator, but ultimately, it's anticipating something that will become a need. Sharing our tools we developed at Ardian with the portfolio companies we own is a way to anticipate the future and make our infrastructure more resilient.

Your research highlights the importance of virtual integration. Tell us more about that.

Thomson: Ultimately, the virtual integration of all the infrastructure in cities will be critical, in particular with regard to urban transport. One of the key imperatives will be to integrate all the new modes of transportation.

For example, while we were shareholders at Indigo, a leader in car parts, the asset started working on the intelligence pillar and adapted to changing market dynamics in French cities. Ultimately, this focus helped build new mobility solutions — things like a carpark offering charging stations, free floating bikes and electric fleets — in seven cities in France.

More broadly, urbanization puts tremendous pressure on infrastructure, and these assets need to be much more flexible in order to service more users and to have a high level of efficiency and user centricity. But we also need them to have a sustainable approach at their core.

The city we know today will be very different in tomorrow's world. Europe is a good example of how cities are changing. We used to have cities dominated by cars, but now cars could become almost the lowest part of the transport segment. Hence the transmission and the distribution grid within cities will need to adapt and change and, ultimately, become far more resilient and sustainable.

Your report notes that using digital technologies comes with a cost to the climate, representing almost 300 percent of 2018 global energy consumption. How do you reconcile these kinds of conflicting outcomes?

Burghardt: The emissions generated by the digital and communication systems are becoming unsustainable. But many of these companies have been analyzing how they can limit their impact, knowing that they want to continue to grow. Procuring renewable energy is a first response. But they also need to reduce their energy consumption, and we see different initiatives. For example, the data centers' architecture and technology is now designed not only to produce greater output, but also to lower consumption itself, so they are becoming increasingly efficient in terms of emissions and heating power. The city of Stockholm is a great example — they are leveraging the heat produced by the data centers.

A final word?

Thomson: The digitalization of our economy implies an electrification of our economies, and this will only put much more pressure on the need for energy transition. It's imperative to make investments today in renewable energy, and this will trigger other innovative technology to create a smart grid, to better manage the production of renewable energies and to mitigate their intermittency. A whole field of new technologies will need to be applied to the energy sector.

Burghardt: That is one of the reasons we are so excited about becoming a shareholder of EWE, one of the largest Germany utilities. This company wants to become the leading player in Germany's energy transition. That should be the obsession of any utility — to see how they can be more efficient in order to reduce the impact of energy in our environment.

CONTRIBUTORS

Mathias Burghardt
Head of Infrastructure
Ardian

Pauline Thomson
Senior Investment Manager, Paris
Ardian

CORPORATE OVERVIEW

Ardian is a world-leading private investment house with assets of US$96 billion managed or advised in Europe, the Americas and Asia. The company is majority-owned by its employees. It keeps entrepreneurship at its heart and focuses on delivering excellent investment performance to its global investor base. Through its commitment to shared outcomes for all stakeholders, Ardian's activities fuel individual, corporate and economic growth around the world.

CORPORATE CONTACT

John Haug | Director, Investor Relations | john.haug@ardian.com | +1 (212) 506-5628

This article presents the authors' present opinions reflecting current market conditions. It has been written for informational and educational purposes only and should not be considered as investment advice or as a recommendation of any particular security, strategy or investment product.