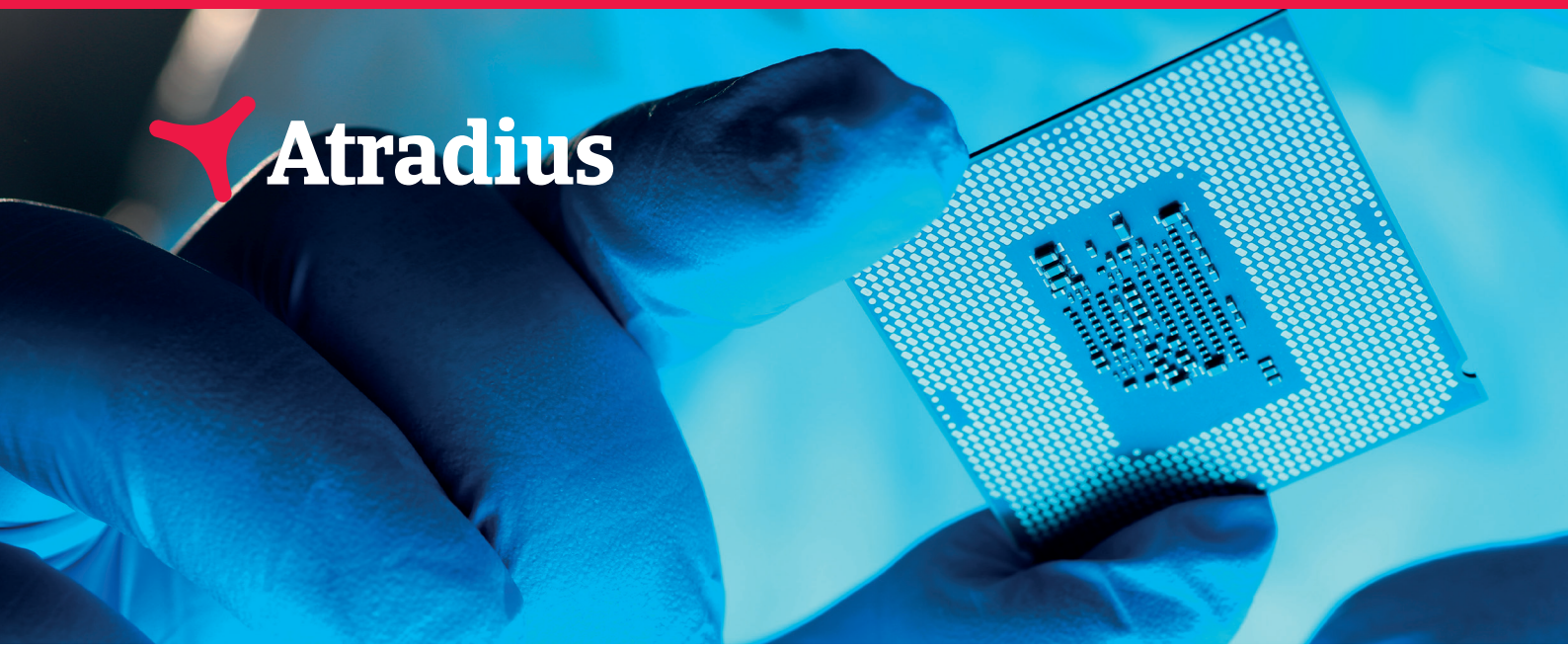

Clean Energy Transition: ICT

Is the ICT industry adding to, or reducing global warming?

There's no escaping from the fact that the Information and Communications Technology (ICT) industry can be found at the heart of almost every conversation and every initiative linked to the clean energy transition. ICT software and hardware are key drivers of many of the solutions designed to address global warming.

From the onboard computers in electric vehicles, to the tech used on wind farms and solar arrays and even the ICT needed for managing electricity grids and improving efficiency across all industries. Our underwriting teams in the US and Germany point out that technology such as IoT, Edge Computing and Machine Learning are very likely to help drive energy efficiency in coming years.

But the other side of this same ICT story reveals an industry that consumes energy. A lot of energy. According to the IEA data centres and data transmission networks each account for 1-1.5% of global electricity use. Digital technologies are directly responsible for 2% of energy-related greenhouse gas emissions today. To achieve Net Zero by 2050, the IEA notes the industry needs to reduce its emissions by 50% by 2030.

That said, the industry is a heavy investor in renewable energy, often seeking to create its own power sources to protect itself from power price volatility, reduce its environmental impact and improve brand reputations. For example, the Citadel Campus located in Nevada, USA, is one of the world's biggest data centres and operates with 100% green power. It's not an anomaly, but part of a trend within the industry that favours sustainable renewable energy solutions. Whether this is enough to meet Net Zero targets is still uncertain.

Using ICT to improve efficiency in ICT

Beamforming
Beamforming improves the precision and efficiency of Wifi and 5G networks, enabling them to consume less power.

IoT
Internet of Things (IoT) enabled devices can be used in smart networks to reduce energy consumption through applications such as logistics efficiency and building thermostat controls.

Edge Computing
Edge Computing stores and uses data on or near the device on which it was created, reducing the need for data centres, and lowering energy consumption and carbon emissions.

What do Atradius underwriters see as the primary issues in the sector?

Atradius underwriters throughout the world note the complexity of the industry's relationship with clean energy transition, often pointing to the same issues for both opportunities and challenges. By its very nature, the ICT industry works at the cutting edge of technology, leveraging science and innovation to create solutions. Although government policies will inevitably have an impact, clean energy solutions are most likely to come from within the industry itself.

Challenges: What are the most urgent challenges for the sector in the next three years?

1. Data centres

Our underwriters in India, the Netherlands, and China noted digital transformation is resulting in growing demand for data storage and processing. Data centres consume significant amounts of energy for operation and cooling, which as our team in the UK explained is facing greater challenges amid more extreme weather patterns. A major challenge facing the industry concerns the production of renewable energy for data centres and improving their efficiency.

2. Government policies

Businesses that don't transition to clean energy models will increasingly find themselves paying out for climate-related levies and taxes. However, this is not the only policy challenge facing businesses. Our underwriters in the USA and China noted that inconsistencies, changing energy policies and regulations that are uncertain or inappropriate for individual industries can be a challenge.

3. Circular economy

Our underwriters in the Czech Republic explained minimising e-waste is a major sustainability challenge for the ICT industry, with the disposal of ICT devices contributing to environmental impacts. Improved and enhanced recycling could also ease pressures on sourcing materials from geopolitically unstable locations.

Opportunities: What are greatest opportunities for the sector in the next three years?

1. Data centres

Our underwriters were almost unanimous in their conclusions that building a sustainable ICT infrastructure presents many opportunities for the industry. This ranges from improving energy efficiency and building renewable energy sources for data centres to exploring new opportunities for innovation.

2. Increased demand for green ICT solutions

The underwriting teams in Italy and the UK noted there is increased demand across sectors and consumers for smart solutions to assist in the reduction of energy consumption. This includes the growing trend of Green offices and buildings, which involves the use of IoT, data platforms and advanced analytics to reduce electricity consumption, maximise renewable electricity consumption by weather forecasting and improving the utilisation of devices and servers across their life cycles.

3. Clean energy transition

As global momentum grows within the clean energy transition, so will opportunities for the ICT sector. From smart solar to smart grids, predictive analytics and the need for digital technology to help store and transfer energy efficiently, the ICT industry will play a central role and will enjoy access to multiple and growing opportunities.

Where next?

Although digital technologies currently account for 2% of global greenhouse gas emissions, these have grown fairly modestly since 2010, despite rapidly growing demand for digital services. This is due to improvements in energy efficiency for businesses and devices across the industry, as well as the increasing use of renewable energy by ICT companies and the broader decarbonisation of electricity grids in many regions, such as Tasmania in Australia. Furthermore, initiatives like the Second Horizon Europe Strategic Plan 2025-2027, where a Key Strategic Orientation of the Strategic Plan is: "Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems" will help to further optimise the efficiency of the sector. What's more, as noted by our underwriters in Sweden and China renewable energy solutions could benefit the ICT sector in terms of raising incomes, growing customer demand and creating jobs.

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Atradius
David Ricardostraat 1
1066 JS Amsterdam
P.O. box 8982
1006 JD Amsterdam
The Netherlands
Phone: +31 (0)20 - 553 91 11

info@atradius.com
www.atradius.com