



# Innovation, decarbonisation, and Europe's economic transformation

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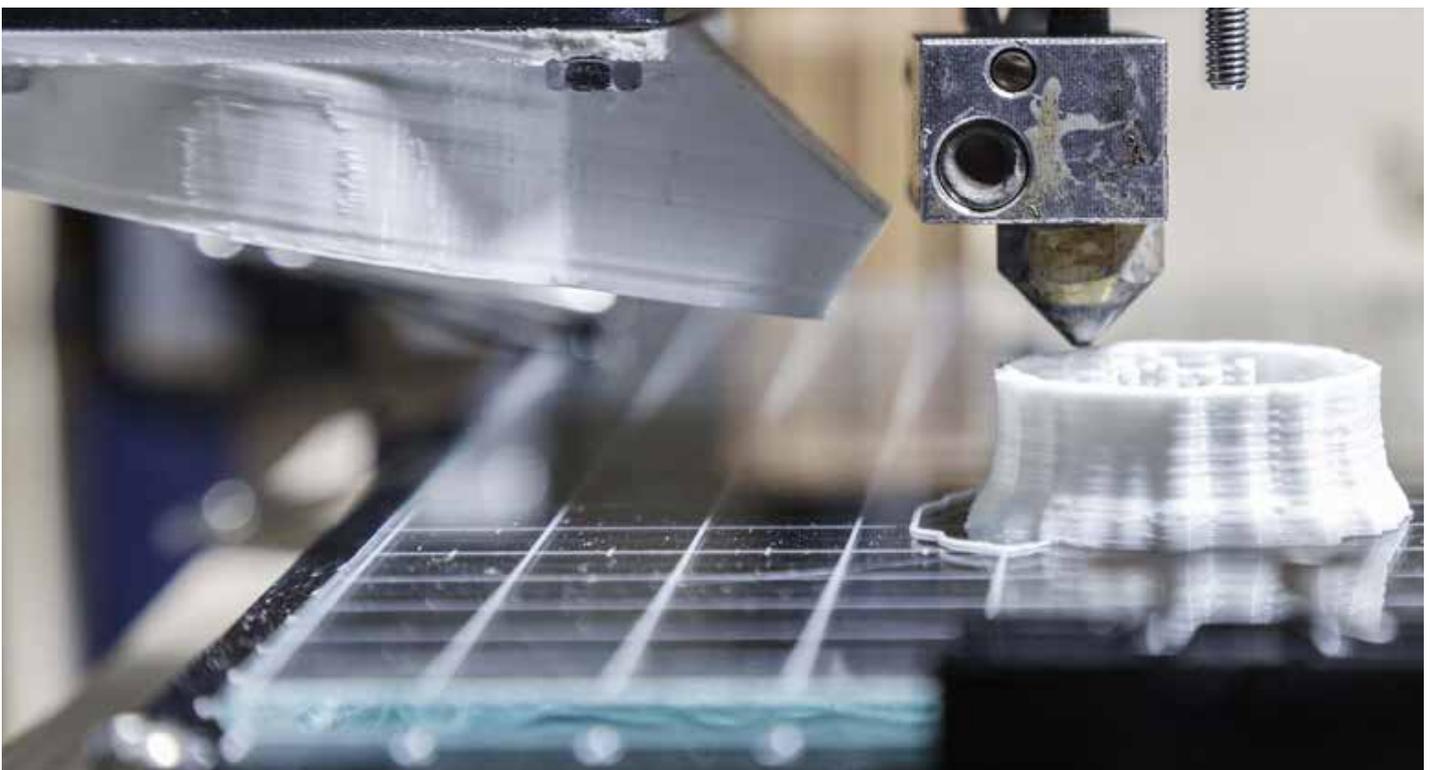
If there is one constant in the workings of the global economy, it is change. What is perhaps novel is the pace and scale of the economic, technological, social and ecological changes that are now shaping the evolution of the global economy – and which should therefore preoccupy the thinking of the world's political leaders. Whether from developed or developing economies, their response to these mega-trends must fashion a rapid transformation of the economy that harnesses the power of data and communications networks, materials technology, and process design and creativity. This will help to deliver economic growth at the same time as the dramatic resource efficiencies and deep decarbonisation so urgently needed, not to mention addressing growing social concerns around inequality.

The good news is that transformation is already starting to happen. From growth in renewables up-ending traditional energy utility business models, to 3D printing and the industrial internet revolutionising manufacturing, old economic models are under assault. Even the challenge posed by new entrants such as Uber, Airbnb and Spotify to the established transport,

accommodation and music industries can be interpreted as signs that the low-carbon, eco-efficient, sharing economy is starting to erode its more polluting, wasteful and selfish version.

But there is a long way to go. This transformation needs greater urgency, direction and support if it is to succeed in tackling the challenge of climate change in particular, where the scale and time-frame of the necessary transition is especially clear. And disruptive innovations such as those above do not happen in a vacuum. They need market frameworks to be established by public actors with a view to enabling systemic innovation of technologies, business models and behaviours; and disruptive innovations will need public intervention to foster collaboration early on and socialise benefits downstream, as well as to incentivise private actors to compete and succeed through their enterprise.

An important part of that enabling framework must be established at international level, and a key element of that is, of course, the UN's climate change convention. In December,



the world's governments will meet in Paris for the latest round of UN climate talks – the crucial COP21 conference. COP21 is intended to forge a new global climate convention, with a view to steering the world on to a path to meet the internationally agreed goal to limit global average temperature rises to no more than 2°C above pre-industrial levels.

To the frustration of many, including the European Union which has taken on a role as a climate leader internationally, the UN climate process has been marked by rancour, dispute and – at best – incremental progress towards this objective. But there are important signs that the politics of these negotiations may be changing as major economic players make significant commitments to decarbonise.

Recent bilateral climate agreements between the US and China, and the US and Brazil, have closed historic rifts. The communiqué from the G7 meeting in Germany in June included a pledge to eliminate the use of fossil fuels this century, promising an end to the energy source that has fuelled the world's prosperity since the Industrial Revolution.

If the Paris meeting is able to maintain this momentum towards such a clear destination, and further encourage more collaboration to increase the confidence in our collective ability to successfully reach it, we shall find attention naturally focusing even more intensely on how best to do this.

And this is where our ability to harness the power of data and communications networks, materials technology, and process design and creativity will be the key to success – and why those who successfully lead the economic innovation process will reap disproportionate economic and social benefit whilst solving the world's most pressing environmental problem.

The opportunities from the transition to this new economy are huge. Consider the figures cited in the New Climate Economy

*“Now is the time for Europe to lead – not just at COP21, but in its economic approach to the industrial innovation and the transition to a new economy”*

report: investment in infrastructure alone is expected to \$90 trillion globally and \$16 trillion in Europe in the next 15 years to meet global growth expectations.<sup>1</sup> So large is the potential value of the digital economy economists struggle to quantify it. Every business sector and value chain, from construction to mobility, food and drink to energy services, will be profoundly disrupted by new technologies, business models and consumer behaviours driven by decarbonisation, eco-efficiency and digital revolutions.

Of course, as in any transition, there will be winners and losers, at least in the short term. While it will be essential that our policy-makers find ways to alleviate the negative impacts of that transition, they will need resist the temptation to embed established players still further, but instead embrace the benefits of disruption and of innovation.

Some of the world's leading economies have already demonstrated that they understand this imperative in relation to decarbonisation in particular – and, furthermore, are acting upon it. South Korea, for example, has since 2009 forged a 'Green Growth' strategy that seeks to build competitive advantage in emerging environmental technology sectors, at the same time as enhancing South Korean's quality of life and contributing to international efforts to address climate change. China's government is working to move its economy from one that manufactures high technology for third parties, to one that designs and produces its own high tech products. It is beginning to direct its vast resources to this end: the country doubled its spending on research and development between 2008 and 2012.

And private sector companies are working with governments to respond to these imperatives. In July, 13 leading US companies – including tech giants Apple, Google and Microsoft, retailer Walmart and even industrial corporations Alcoa and General Motors – signed on to the government-led American Business Act on Climate Change Pledge. They made new commitments to make at least \$140 billion in low-carbon investments, in addition to company-specific goals to cut emissions as much as 50 percent, reduce water intensity as much as 15 percent, purchase 100 percent renewable energy, and pursue zero net deforestation in their supply chains.

These are not acts of corporate philanthropy. They are rational investment decisions that recognise the direction of travel: that successful businesses of the future will need to operate in a low-carbon environment and, by starting to decarbonise now, they can position themselves for competitive advantage in the future.

Europe, too, has its pockets of economic innovation, such as in those Nordic countries where industrial policy priorities are orientated towards fostering innovation and servitisation – recognising the increasingly close links between industry and the service sector, enabled by high technology and Internet connectivity. Sweden, for example, spends 3.41% of GDP on R&D,





the fourth highest percentage globally. Denmark is in the top five in the OECD in terms of public expenditure on R&D. Finland boasts a strong and sustained technological specialisation in information and communications technology.<sup>2</sup> And Europe's three largest economies have all developed strategies which seek to harness the digital potential with other industry trends to promote innovation – Germany's 'Industrie 4.0', France's 'l'Industrie du Futur' and the UK's latest industrial strategy.

But this is about much more than technology R&D. These examples of state-enabled industrial innovation suffer from problems of co-ordination, consistency and credibility; and attempts to integrate industry and innovation policy remain the exception in Europe, rather than the rule. Industrial policy too often remains tainted by the mistakes of the 1970s and 1980s, where governments attempted to identify and promote national champions from one or other manufacturing or industrial sector. While this old-fashioned policy led to some industrial successes, like Airbus, it did not foster innovation across the entire economy. The justifiable reluctance of government to try to 'pick winners' has left EU lacking a coordinated approach to innovation.

Europe is therefore currently ill-equipped to address these challenges. European industrial policy making suffers from the 'silo' approach followed in many countries, where responsibility is split between different parts of government. As we have seen in EU climate change policy, narrow, short-term competitive considerations have too often inhibited the longer-term innovation needed to transition to a decarbonised economic model.

Fundamentally, there is a lack of common understanding and collaboration as to how to harness Europe's industrial potential, and ensure its competitiveness, in the face of decarbonisation, global value chains, technological revolution and social change.

It is to help build this common understanding that a new platform called i24c – Industrial Innovation for Competitiveness – has been created. The platform aims to develop a systemic, forward-looking approach to European industrial policy based on innovation.

i24c brings together economic policy-makers, new and established industrial entrepreneurs, cities and academic institutions. It is guided by a High Level Group of including the former Director-General of the World Trade Organization Pascal Lamy, former European Commissioner for Research, Innovation and Science Máire Geoghegan-Quinn and CEOs of leading European industrial companies.

The platform will work to identify the priorities for industrial transition, including by: producing research to build the evidence base for the necessary transition; developing industrial innovation roadmaps and indicators to help policymakers prioritise investment and policies, and track progress; and establish working groups and high-level stakeholder meetings to move the debate forward.

Our mission is to develop a new European Industrial Compact that aims to ensure industrial leadership for Europe as the world transitions to a new economy. This compact would prioritise the promotion of innovation, ecosystems and multi-stakeholder dialogue.

We believe that the establishment of i24c is timely. Within policymaking circles, thinking is fast developing around a new approach to industrial policy – or the agenda that Europe's last Commission referred to as an 'Industrial Renaissance' for the EU. Opportunities exist in Europe to re-energise economic transition through industrial policy focused on innovation such as the review of the EU's growth strategy, the Energy Union initiative and other flagship activities designed to increase economic growth at the same time as decarbonising and achieving its social objectives.

Now is the time for Europe to lead – not just at COP21, but in its economic approach to the industrial innovation and the transition to a new economy. ■



1. *New Climate Economy (2015), Seizing the Global Opportunity*, page 9  
 2. *OECD (2014), Science, Technology and Industry Outlook 2014*