AI for sustainability: Leveraging technology to power the twin transition

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Work is accelerating in digital development and sustainable solutions, and the two are increasingly coming together as the EU looks to address the biggest issues of the day.

With major goals established in addressing climate issues, policymakers and business leaders are looking to innovative technologies such as Artificial Intelligence (AI) to help in their achievement.

The scope of AI's potential involvement is significant and fast-developing, from the creation of digital twins to the allocation of permits. As such, stakeholders emphasise the need to include businesses, particularly SMEs, in this work, given their centrality to fostering innovation and new technologies.

To achieve this, however, work remains to be done in terms of ensuring an enabling environment for these actors and the technologies they produce at the EU and national level, as well as addressing related issues such as disconnects between policymakers and business leaders when it comes to tackling the most pressing dilemmas.
SMEs central to integrating AI into climate action, say stakeholders

No Green Deal without technology, leading EU lawmaker says

Building a sustainable future for the energy sector with AI
SMEs central to integrating AI into climate action, say stakeholders

By Molly Killeen | EURACTIV.com

Small and medium enterprises will be central to ensuring the twin green and digital transition succeeds, and that technologies such as AI are integrated into these processes, stakeholders emphasised in Brussels this week.

Policymakers and business leaders discussed the role of AI in achieving the EU’s twin transition goals and the roles the private and public sectors have to play at an event on leveraging digitalisation for decarbonisation, hosted by the Lisbon Council and Amazon Web Services on Wednesday (8 February).

The EU has established several aims in both areas, with the Digital Decade targets on one side and the European Green Deal on the other.

Speakers at Wednesday’s event, however, emphasised that the two should not be thought of as parallels but as combined tracks, with technology thoroughly embedded in climate goals.

Also, the importance of SMEs in spurring innovation when it comes to green tech and the twin transition was repeatedly highlighted throughout the discussion, in addition to the importance of the relationship between businesses and governments in working towards digital and climate goals.

“If we need to reach net zero, which is the biggest challenge that humanity faces on climate change, we absolutely need to integrate AI and technology” into environmental work, said Maria Mandiluce, CEO of the We Mean Business Coalition.
“It is something that needs to be integrated. It is not something that will work in parallel.”

AI and related innovative technologies can play a key role in accelerating the green transition and will be crucial to achieving Brussels’ Digital Decade targets, which include the sustainable digitalisation of businesses and public services, stakeholders repeatedly emphasised.

AI can aid this “by making it both easier and more accessible for even more people to help develop and deploy clean energy technology”, said Hassane Elias Kassouf, head of Amazon’s Cloud Computing Services (AWS)’ worldwide innovation programmes in energy and utilities.

Work on setting climate goals at the EU level is ongoing, with last week’s presentation of the Green Deal Industrial Plan, for instance, said Vincent Berutto, head of unit for research, innovation, competitiveness, and digitalisation at the European Commission’s energy department.

“At the same time, we need to further reap the benefits of digital solutions in the energy sector,” Berutto said.

“We’ve got an energy sector that is becoming increasingly electrified, more and more decarbonised, more and more decentralised and integrated. For that reason, I think AI and digital solutions are playing an increasing role.”

In the energy sector, Berutto added, the involvement of innovative technologies comes in several areas, from providing flexibility and ensuring that demand and supply are met at all times with renewable energy sources.

At the Commission level, there are some ongoing programmes involving the incorporation of technologies into energy solutions. In one, with a focus on promoting investment in smart grids, the EU executive is working with transmission and distribution system operators to construct a digital twin of the EU’s electricity grid.

A declaration of intent to this effect was signed by industry organisations in December, following the project’s proposal in the Commission’s October 2022 action plan for digitalising the energy sector.

The digital twin is intended to help coordinate investments in digitalising the EU’s electricity infrastructure and, by extension, boost its efficiency, thereby contributing to the goals of the REPowerEU Plan, which aims to reduce dependence on Russian fossil fuels and accelerate the green transition.

For plans such as these to function, however, speakers emphasised that policymakers and politicians need to work with private sector actors, particularly SMEs and startups working on innovative solutions.

Recent work undertaken by the Lisbon Council think tank on the interlinked green, digital and competitive transitions has highlighted the importance of SMEs – as the origins of many new disruptive technologies – as the EU’s electricity grid.

However, he added that certain changes would be needed in Europe to maximise the potential of these solutions in contributing to green goals, including ensuring that technologies can be diffused into broader society and commercial development rather than remaining in labs, where their impact might not be felt.

A point in favour of focusing on smaller entrepreneurs, noted Kassouf, is that “local innovators are better informed to address local problems before they become global problems”.

This should help devise a strategy of ensuring that entrepreneurs from local, and especially under-represented or under-served communities, can work on the issues most relevant to them.
For EU lawmaker Eva Maydell, Europe’s ambitious green agenda must be supported by a comprehensive industrial plan that will shift the bloc’s focus to competitive sustainability and becoming the world’s leader in clean technologies.

“We can’t talk about the green transition without talking about technologies. There is no Green Deal without the Tech Deal. AI and other new technologies are the ultimate enablers of the sustainable future we are trying to envisage here in Europe,” Maydell told EURACTIV.

Maydell is an influential voice of the conservative European People’s Party (EPP), the largest political group in the European Parliament. She has worked on key digital files such as the EU’s data strategy, the revised Networks and Information Security directive (NIS2), the Chips Act and the Artificial Intelligence (AI) Act.

Two years ago, the Bulgarian lawmaker drove the establishment of a working group inside the EPP on AI and sustainability to bring together peers, experts and researchers on AI applications in fields such as energy efficiency and renewable energy.

Russia’s full-scale attack on Ukraine one year ago, which led to soaring energy prices and pushed Europe to reconsider its strategic dependencies towards Russian gas and Chinese batteries, underscored the urgency of the work of Maydell’s working group.
“This situation we find ourselves in today has brought more pragmatism in our strategic plans for the Green Deal. The Green Deal is a noble idea, but it was not backed up with the industrial and technological potential from the very beginning,” Maydell said.

The EU lawmaker stressed that Europe needs to look at existing innovative solutions such as AI applications that can help to reduce energy consumption to break the silos and really turn the green and digital transformation into a twin transition, as they have been dubbed for some time now.

Maydell mentioned that, at a recent stakeholder event on AI and sustainability, she experienced real-world examples of what this type of technology can bring — spanning from a start-up working on energy storage to a Bulgarian company developing energy solutions with satellite services.

“If we want to reach these ambitious targets, we cannot do that only by putting strict rules in place for every sector. It’s a two-sided approach. We also need to listen to the entrepreneurs to create the working conditions we need to deploy the AI solutions that can make this transition possible,” she said.

On the AI Act, a landmark EU legislation at an advanced stage of negotiation in the European Parliament, Maydell considered that the policymakers’ role should be to address the challenges posed by this emerging technology whilst still enabling it to address the most pressing societal problems.

In her view, the purpose of the draft law is to create legal certainty for AI-driven solutions that entail low risk but can make industrial processes more efficient, starting with consuming less energy.

“Some think that any AI solution operating in the environmental or the green sector should be considered higher risk. I want to caution against this approach because we do not want to disincentive companies from venturing into this field,” Maydell added.

At the same time, the MEP recognises that balancing innovation and safeguards is easier said than done. Still, she cautioned against overregulation, which would clip the wings to European companies that could create AI models based on European values.

“We are a leader when it comes to the AI Act, the Green Deal and other legislation. We have this first-mover advantage. But if we want to be the first ones to reach net zero, we must take a step back and realize we must foster innovation in our continent.”

“It’s time for us to start thinking about not just about sustainability or competitiveness but about competitive sustainability as our selling point. Europe has the potential to become the world leader in clean tech,” Maydell concluded.
Artificial intelligence is a key enabler in fighting the climate crisis. By leveraging digitalisation in support of decarbonisation, Europe can achieve a twin transition to accelerate the deployment of scaleable solutions.

Technological solutions and machine learning can promote a more efficient use of energy resources and the integration of renewable energy sources into the grid. Supportive regulatory and business environments can help more businesses and SMEs develop, and find new ways to harness AI potential and boost European innovation.

Let’s hear from stakeholders from across the business, regulatory and research spectrum about momentum that is building across Europe to adjust mindsets, empower innovation and accelerate this time-critical twin transition.

Watch the video here.