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CEO Alliance

Digitalisation for Sustainability

Key recommendations for digitalisation to enable and boost sustainability:

1. **Support secure connectivity roll-out to enable flexibility and data flows**
   Reliable connectivity and seamless data flows are key to deploying digital solutions for sustainability, such as smart grids and connected devices, and unleash their potential for cutting emissions.

   The increasing portion of renewables in our energy systems require flexibility which can only be sustained through reliable and resilient connectivity, ensuring cybersecurity standards for critical infrastructure are met and data flows enabled. Increasing data flows require increased harmonization and common standards, conscious of commercial sensitivities. The upcoming European data space for energy should include a broad spectrum of industries, such as automotive, buildings, and ICT.

   Regulation must support the roll-out of connectivity infrastructure, simplifying and accelerating permitting procedures, and developing a long-term strategy for connectivity.

2. **Drive innovation and the scaling of cutting-edge technology, including AI**
   Digital solutions and innovation for sustainability is a rapidly evolving area. The transition to industry 4.0 is underway with the roll out of various solutions across sectors, such as streamlining automation processes for the management of energy, leveraging cloud technology, and using AI.

   The technology and know-how needed to develop and scale such solutions needs to be supported and encouraged by well-balanced and enabling regulation, by introducing regulatory sandboxes, providing self-assessment mechanisms, funding innovation and thereby supporting scalability.

3. **Incentivize investments in digital infrastructure and solutions supporting sustainability**
   Digital solutions can create major efficiency gains and boost sustainability efforts. However, investments in digital infrastructure and solutions for sustainability are not sufficiently supported, especially considering efforts by global partners and competitors in this area. This must change, not least through an update of the EU Taxonomy and facilitating market consolidations in Europe around future winners. Forward planning and anticipating investments must be enabled and incentivized, especially for energy companies and distribution grids, also by accelerating permitting procedures. By further including digital solutions in the taxonomy existing digital solutions can scale faster.

The CEO Alliance was founded in 2020 as a platform of European companies coming together to make decarbonisation happen.

The Alliance sees huge potential in digitalisation as an enabler and booster for sustainability, contributing to achieving the goals set out in the European Green Deal. The twin transition, green and digital, are too often treated separately and not enabling each other. In fact, the potential of existing digital solutions to reduce CO2 emissions is estimated to be 15-20% by 2030[1]. In this context, the CEO Alliance supports the framework and objectives of the 2022 EU Action Plan on digitalising the energy sector[2], and is eagerly awaiting the European Commission's upcoming Digital Networks Act[3], but more can and must done to maximise the untapped potential of digitalisation for sustainability.

We want a strong, innovative and competitive Europe. To achieve this, the legislative environment must be focused on incentivizing the opportunities we are facing, and not as today's focus on regulating hypothetical risks. Through this, we can create progress and put Europe in the pole position.

With this paper, the CEO Alliance would like to offer our input, structured around three key areas, of how the potential of digitalisation for sustainability can be unlocked, bringing in concrete business examples from the wide range of economic sectors our members represent.

[1] https://digital-strategy.ec.europa.eu/en/library/2023-report-state-digital-decade and https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf
[2] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6228
[3] https://www.linkedin.com/pulse/digital-networks-act-redefine-dna-our-telecoms-thierry-breton/

1. Support secure connectivity roll-out to enable flexibility and data flows

Resilient and stable connectivity, especially through 5G (and 6G in the future), together with seamless data flows are key to enabling the capacity of Europe's economy to uptake digital solutions for sustainable purposes, including digitalising the energy system, rolling out smart grids, and incorporating Internet of Things devices (IoT). Connected devices, edge control and mobile technologies have a unique potential to enable other industrial sectors to reduce their climate emissions by at least 20%[4].

The necessary flexibility for managing an increasing portion of variable renewables in our energy ecosystem can only be sustained through secure and resilient connectivity, while ensuring cybersecurity standards for critical infrastructure are met. Due to the inevitable increased use of connected devices, and in line with the Cyber Resilience Act[5], resilience and cybersecurity need to be considered bottom-up as well, and therefore consider other relevant sectors, such as automotive, buildings, and construction.

Already today, data needs to flow between various 'prosumers' of the grid, including actual grid data, information from TSOs and DSOs, and data from households and industry (smart buildings, e-vehicles, heat pumps, etc.). The transition to electrified transport is also dependent on a high-coverage wireless connectivity network, for example to optimize routes and secure charging and grid power availability. The same applies to buildings and industries.

These data flows and their volume will continue to increase as the roll-out of smart solutions for consumers, the move to industry 4.0, and transport electrification continues. To sustain this, Europe needs to ensure greater harmonization of data, protocols, and application programming interfaces (APIs), in line with the Data Act[6], Data Governance Act[7], and conscious of commercial sensitivities, and by developing common standards.

The upcoming European Data Space for energy will be key in further streamlining these data flows and contributing to tapping in to their full potential for sustainability. The energy Data Space should include a broad spectrum of industries in order to maximise this potential, and not be limited to TSOs, DSOs, and utility companies. Other industries, such as automotive, buildings, construction, and ICT, should also be included[8].

To enable these data flows and the required flexibility, connectivity infrastructure needs to be guaranteed. Europe needs to provide a regulatory environment that makes the availability of reliable and stable connectivity widespread. This requires simplifying and accelerating permitting procedures, as is being discussed in the Gigabit Infrastructure Act[9], and developing a long-term strategy for connectivity, which is expected in the upcoming Digital Networks Act.

2. Drive innovation and the scaling of cutting-edge technology, including AI

Digital solutions and innovation for sustainability is a rapidly evolving area. The transition to industry 4.0 is underway and we are witnessing the roll-out of various solutions across sectors, aimed at improving efficiencies and supporting sustainability. Streamlining automation processes for the management of energy, leveraging cloud technology, and using AI for simulations and data visualization are examples of how innovation can create new solutions for sustainability. Regulation must support innovation in this area. Importantly, regulation must also enable and boost the scalability of new solutions across European markets.

To transition towards smart solutions (such as smart grids and buildings), a three-tiered approach is essential: utilizing sensors for data collection; implementing automation solutions such as digital control functions for managing energy flows; and deploying software and applications (visualization and virtualization) that render data and automation processes in a user-friendly format, with a special focus on leveraging the potential of artificial intelligence. All three tiers require different levels of innovation as the data captured gains value layer by layer.

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[4] https://www.gsma.com/betterfuture/wp-content/uploads/2019/12/GSMA_Enablement_Effect.pdf and https://www.ericsson.com/4a98c2/assets/local/about-ericsson/sustainability-and-corporate-responsibility/environment/mit-technology-review-decarbonizing-industries-with-connectivity-and-5g.pdf

[5] https://digital-strategy.ec.europa.eu/en/library/cyber-resilience-act

[6] https://ec.europa.eu/commission/presscorner/detail/en/ip_23_3491

[7] https://digital-strategy.ec.europa.eu/en/policies/data-governance-act

[8] For further background: https://energy.ec.europa.eu/publications/common-european-energy-data-space_en

[9] https://digital-strategy.ec.europa.eu/en/library/gigabit-infrastructure-act-proposal-and-impact-assessment

Software visualization and virtualization are examples of innovative solutions that allow companies to create efficiency gains and boost their sustainability. For example, building information modeling (BIM) and digital twins enable users to make use of algorithms to simulate the sustainability impact of adjustments to a building or a process (e.g. a production line), without having to make the actual physical adjustments, thereby saving energy and time. In buildings, tools can be implemented to control elements of the smart building, for example lighting, heating and cooling, EV charging, solar panels and other systems, integrating them seamlessly. This integration can lead to system efficiencies, potentially saving up to 20% energy in buildings[10]. When compared to conventional buildings, the performance data of such integrated systems performs exponentially better, showcasing the potential of this approach to boost sustainability.

The technology and know-how needed to develop and roll out such solutions needs to be supported and encouraged by a well-balanced and enabling regulation. Focus should be on incentivizing the opportunities offered by technologies. Today's European legislative environment has a focus on protection towards future theoretical risks, leading to less innovation and hinders the investments and the development that Europe is needing. This is also true for the EU Artificial Intelligence Act[11], although it also introduces positive aspects such as regulatory sandboxes which private players can use, and allowing for self-assessment mechanisms. However, there is a risk that the AI Act will slow down the ability for European companies to develop AI solutions, leaving this opportunity to other regions, such as the US, India and China. Public-private partnerships exemplify how efforts to boost green digital transformation can be supported by policymakers. The ultimate goal of regulation must be to support innovation and enable its scalability across markets. AI regulation should not overregulate a sector which is still in its infancy.

3. Incentivize investments in digital infrastructure and solutions supporting sustainability

Digital solutions can create major efficiency gains and boost sustainability efforts. However, investments in digital infrastructure and solutions that support sustainability are not sufficiently rewarded and incentivized. This should change, not least through an update of the EU Taxonomy. In general, to private investments to happen, sufficient corporate profits are the basic requirements, and European competition policy has to also incorporate the need for companies to own a healthy return on capital. As an example, telecom operators struggle to earn the cost of capital on infrastructure investments due to lack of economies of scale and thus they don't build out the necessary digital infrastructure required for Europe to compete with the US, India and China. Hence, a regulatory environment supporting in-market consolidations must be adopted and supported within Europe.

Forward planning and anticipating investments is also key for innovation, especially for utility companies and grid operators, and this requires streamlined permitting procedures, ideally including tacit approvals (as was proposed in the Gigabit Infrastructure Act). Ultimately, one thing is clear: in order to attract private investments, adequate business cases generating positive return on capital, are needed.

The EU Taxonomy is crucial for directing investments towards sustainable solutions. The Taxonomy defines activities to which capital flows should be directed to transform the European economy to a sustainable future. Digitalization is a crucial part of this transition and one of the cornerstones in the twin transition.

Today, public communication networks are not included as eligible economic activities in the Taxonomy, unintentionally leading investments away from the necessary development of digital technologies and infrastructure to underpin the green transition. This is in great contrast to Europe's global partners and competitors such as USA, Japan and China, which are investing heavily in digital solutions. To achieve Europe's climate and digital ambitions, communication network deployments in Europe must be accelerated, and there is a need to steer sustainable capital flows and investments into the digital economy. Therefore, the deployment and operation of communication networks should be included as an eligible economic activity in the delegated acts of the Taxonomy regulation.

In addition, to achieve a successful twin transition, investments in grids are also crucial. Regulatory obstacles to the energy grid's expansion and digitalization must be removed, since they risk leading to delays in renewable projects connections and slowing down the decarbonization of key sectors (e.g. heating, transport). It is

[10] https://www.weforum.org/agenda/2021/09/how-to-build-zero-carbon-buildings/
[11] https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence

estimated that €65 billion of investments per year up until 2050 are necessary to upgrade, renovate and digitalize grids[12]. Indeed, up to 70% of renewable energy sources are likely to be connected to the distribution grids[13] and more than 90% of electricity consumption takes place at distribution level connections. Power distribution grids must be the enabler, and never the bottleneck for integrating RES, flexible and bidirectional flows by prosumers and energy communities, and additional load. This underscores the imperative to prioritize distribution grids on the EU's political agenda to ensure security of supply, incentivize private investment and EU public funding and accelerate permitting and deployment.

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The members of the CEO Alliance look forward to working with policymakers in the EU and its Member States to contribute towards digitalising Europe and its economy for sustainability purposes.

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About the CEO Alliance: We are a cross-sector action tank consisting of leading European companies representing key industry sectors, with ~1.6 million employees and ~EUR 560 billion annual revenue**.** We use our broad platform to make decarbonization of European industry happen. In spite of the challenging times we firmly believe that the only way forward for a competitive, prosperous, resilient and sustainable Europe is an acceleration of the transition to green energy and technology. Further information about our work is available on our website, www.ceo-alliance.eu.

[12] https://www.eurelectric.org/policy-areas/power-distribution
[13] https://www.solarpowereurope.org/features/eu-electricity-roads-status-work-in-progress