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Germany Must Lay the Foundations for Sustainable Digitalisation of Europe During Its Presidency of the EU Council

For the current German EU Council Presidency, which began on 1 July 2020, eco – Association of the Internet Industry and the Alliance for the Strengthening of Digital Infrastructures in Germany, initiated under the umbrella of eco, have set out a set of requirements for sustainable digitalisation in Europe. Digital infrastructures such as data centres, for instance the providers of colocation, cloud and hyperscale services, form the backbone of digitalisation in Germany and Europe.

With the European Commission's (EU Commission) European Green Deal, the challenges of the upcoming transformation processes – climate-neutral restructuring and digitalisation of the European economy – have once again been made clear. In order to discuss issues in the area of tension between digitalisation and sustainability at European level during the German EU Council Presidency, the Digital Policy Agenda for the Environment presented by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) should be used as a working basis for the forthcoming consultations. The Ministry for the Environment's Digital Policy Agenda for the Environment provides an important impetus for the design of sustainable digitalisation, which must be taken up at European level. In February 2020, the EU Commission announced that climate-neutral operation of digital infrastructures in Europe is to be achieved by 2030. This ambitious goal makes clear that the course needs to be set decisively during this Council Presidency.

In detail, eco and the Alliance for the Strengthening of Digital Infrastructures have identified the following requirements for the German EU Council Presidency, in order to lay the foundations for the sustainable digitalisation of Europe.

- **Enabling sustainable development and operation of digital infrastructures**

In its communication on the European Green Deal, the EU Commission recognised the potential of European data traffic to open up new value chains. In order to realise its full potential, high-performance and reliable digital infrastructures will be developed in Europe.

In the context of the Council Presidency, the German federal government should initiate a process for the expansion of digital infrastructures in Europe oriented towards both demand and sustainability. In order to be able to offer efficient and environmentally-friendly solutions such as smart grids to complete the energy transition and connected mobility concepts for greenhouse gas reduction in the transport sector, as well as to make digitalisation and its technologies usable in other areas and sectors, high-performance and reliable digital infrastructures are absolutely essential. In addition, the reliable operation of digital infrastructures



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requires a secure, sustainable and affordable supply of electricity. The operation of data centres geared towards sustainability requires, among other things, an ambitious expansion of renewable energies in Europe.

During its Council Presidency, the German Federal Ministry for the Environment should press ahead with the work on the strategy for the expansion of off- and onshore wind energy announced in the European Green Deal, and advocate for an ambitious expansion of renewable energies in Europe. The target of the European Renewable Energy Directive, according to which at least 32 percent of European final energy consumption must be generated from renewable sources by 2030, was first revised in 2018. In view of the goals and measures defined in the European Green Deal, it is clear that the expansion path agreed in 2018 will not be sufficient.

In the course of the discussions on the expansion of renewable energies, a European dialogue on the shaping of energy costs in the EU is needed – as a central component of future competition policy. In addition to the economically and socially-acceptable financing of the expansion of renewable energies, attractive framework conditions must be created for the use of so-called Power Purchase Agreements (PPAs), i.e. the direct supply of renewable energy to data centres. At present, PPAs are rarely used by data centres to purchase electricity because the contractual arrangements are generally very complex and not attractive with regard to the German electricity price structure.

With the expansion of digital infrastructures and a massive increase in renewable energy, not only can positive effects be generated on the EU's energy and climate policy goals, but also stimulus can be provided to revive the European economy.

- **Expand research programmes**

With the ratification of the Paris Climate Convention in May 2017, the European Union committed itself to limiting global warming to below 2 degrees Celsius compared to the pre-industrial age. In order to achieve this goal, the European Green Deal provides for, among other things, the revision of the directives on the expansion of renewable energies and on increasing energy efficiency, as well as various measures for the consistent pricing of carbon dioxide (CO₂), e.g. the extension to the construction and transport sectors of the Emissions Trading System (ETS) Directive and the introduction of a carbon border adjustment.

In order for European data centres to be able to make a contribution to achieving the climate policy commitments, the German Presidency should provide economic, competition and innovation policy stimuli to drive forward the development of climate and environmentally-friendly technologies. The Alliance for the Strengthening of Digital Infrastructures advocates that future research and innovation projects should cover two main areas.



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On the one hand, potentials for the energy and resource efficiency of data centres need to be examined scientifically. Common standards for determining and evaluating efficiency indicators should be developed in European dialogue. On the other hand, attractive and competitive framework conditions are needed for researching and testing environmentally and climate-friendly technologies, e.g. in the fields of smart cities, AI and connected mobility.

On the basis of the research results, concrete support mechanisms can be developed, e.g. to increase the efficiency of data centres or to establish climate and environmentally-friendly neighbourhood solutions in the construction industry. Equally, sustainable stimulus should be provided to help companies and technologies that have climate, environmental and natural solutions to achieve market maturity.

- **Development of climate-neutral energy sources for a secure energy supply for data centres**

A basic prerequisite for the operation of data centres is a stable and trouble-free energy supply, primarily in the form of electrical energy. To secure the energy supply, data centres have powerful, fossil-fuel generators that automatically kick in when the energy supply is interrupted. At present, it is not possible to secure supply on the basis of battery technologies, as their latency is too long compared to fossil fuels and would therefore lead to downtime in the data centres.

In order to ensure the climate-neutral and uninterrupted operation of data centres, the potential for the use of hydrogen-based synthetic fuels or low-carbon biofuels in particular must be scientifically investigated. The German federal government should conduct discussions with other member states on the development of synthetic fuels and the establishment of the necessary hydrogen infrastructure in Europe. In addition to agreeing on a joint strategic approach, promising and innovative development projects should be evaluated, and attractive framework conditions for the piloting of the projects should be agreed upon.

- **Expand and strengthen support mechanisms**

In its communication on the European Green Deal, the EU Commission forecasts a considerable need for investment to restructure or modernise the infrastructure of the European economy and to promote innovative products/processes.

Modern data centres are considered leaders in terms of their energy efficiency, as confirmed by the study “Data Centres in Europe – Opportunities for Sustainable Digitalisation” by the Borderstep Institute, recently published by eco. The study shows that the energy consumption for the technical building equipment of existing data centres has been reduced by 10 percent over the past decade, and by as much as 25 percent in the case of efficient newly-built data centres. However, despite the



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efficiency gains, it will not be possible to reduce the energy consumption of data centres; this development is mainly due to the strong data growth in the coming years. While the efficiency of modern and professionally operated data centres has increased, no significant efficiency gains have been observed for small and mostly self-operated data centres. A similar development can be seen in data centres which operate with long investment cycles, and ultimately make only small investments in the energy efficiency of their buildings and/or technology.

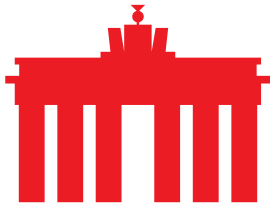
In order to enhance the existing energy efficiency and innovation potential of the Internet and the digital economy, both in the operation of digital infrastructures and in the development of digital solutions, the German Federal Ministry for the Environment should develop a funding programme at European level that is geared to the environment and sustainability. In order to increase the energy efficiency potential of data centres sustainably and holistically, it must be taken into account that data centres are not a homogeneous sector – rather, the operation of digital infrastructures is based on very different business models and is also subject to diverse technical conditions. Possible support measures to increase energy efficiency should cover the modernisation of buildings and technology, as well as new construction. In addition, from an energy-policy perspective, incentives to move away from self-operated data centres are useful.

With a future-oriented funding programme, the competitiveness and world market leadership of European companies in the development and use of sustainable and environmentally-friendly technologies can be supported in a targeted manner. Companies need an investment and innovation-friendly economic environment in Germany and Europe that guarantees them the best possible planning security.

- **Creating a framework for systematic heat recovery**

With the announcement of a strategy for intelligent sector integration, the EU Commission has emphasized in the European Green Deal the importance of sector coupling in the European economy. Data centres exist in a highly competitive market environment, both internationally and in Europe. Due to the climatic and geographical conditions, the Northern European data centre locations benefit not only from the high volume of renewable energy sources, but also from the systematic re-use of the waste heat generated in the data centres.

In order to advance the efforts of the EU Commission, the German federal government should support a European framework for cross-sectoral heat recovery. In addition to the identification of existing heat recovery potential, concrete measures for the efficient use of the available waste heat should be initiated, e.g. feeding into local or district heating networks or vertical farming.



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- **Reform of the Energy Taxation Directive**

On the basis of the European Energy Taxation Directive, minimum taxation occurs in Europe of various energy sources, such as electrical energy, gases and fossil fuels. The Directive only prescribes minimum tax rates for the respective energy source; as a result of the different national implementations in the European Member States, intra-European electricity cost competition has arisen on the basis of energy tax, among other factors. In recent years, a reform of the Directive has been discussed time and time again. The EU Commission has recognised the importance of the Energy Taxation Directive and intends to revise it in line with the European Green Deal.

The German Federal Ministry for the Environment should initiate discussions on the reform of the Energy Taxation Directive at European level within the context of the Council Presidency. A substantive orientation for the reform, taking into account future energy and climate policy developments, should be developed and presented for broad public discussion on the basis of these discussions.

About eco:

With more than 1,100 member companies, eco is the largest Internet industry association in Europe. Since 1995 eco has been instrumental in shaping the Internet, fostering new technologies, forming framework conditions, and representing the interests of members in politics and international committees. The focal points of the association are the reliability and strengthening of digital infrastructure, IT security, trust and ethically-oriented digitalisation. That is why eco advocates for a free, technology-neutral and high-performance Internet.