Position Paper
on the Digital Policy Agenda for the Environment
Berlin, 03 July 2020

On 3 March 2020, German Federal Minister for the Environment, Svenja Schulze, presented Germany's first Digital Policy Agenda for the Environment, which aims to make digitalisation more sustainable through the use of digital technology. Work on the agenda began in autumn 2019, in cooperation between the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and experts from politics, public administration, industry and academia.

The Digital Policy Agenda for the Environment identifies areas of tension in environmental policy as a result of increasing digitalisation. Based on this, measures have been developed to avoid or mitigate the expected effects. With around seventy measures in various stages of development, the agenda envisages that digital-based solutions in the fields of industry, transport and the digital economy, among others, should contribute to the use or development of environmentally-friendly solutions. With the package of measures developed, the Ministry for the Environment is making clear that digitalisation – with all its risks, opportunities and potential – should be shaped not only for the benefit of people, but also for that of the environment.

eco – Association of the Internet Industry and the Alliance for the Strengthening of Digital Infrastructures in Germany, founded in 2018 under the umbrella of eco, welcome the work of the Ministry for the Environment in developing a Digital Policy Agenda for the Environment. The operators of digital infrastructures such as data centres, for instance the providers of co-location, cloud and hyperscale services, form the backbone of digitalisation in Germany. In order to be able to offer efficient, environmentally-friendly and sustainable solutions in the future, such as connected mobility concepts for greenhouse gas reduction, and to make digitalisation and its technologies usable across sectors, efficient and trustworthy digital infrastructures are essential. Although not all measures planned receive the full approval of digital infrastructure operators, the Digital Policy Agenda for the Environment takes up important demands of the Alliance for the Strengthening of Digital Infrastructures.

In order to promote sustainable digitalisation in Germany, further consultations and measures on the following key issues are essential:

- Strengthening research and development
- Developing a cadastre of data centres
- Increasing the energy efficiency of data centres
- Strengthening national and European energy efficiency standards
- Strengthening and expanding training and further education offers

Strengthening research and development
In the numerous measures in the chapter "Environmentally-Friendly Digitalisation", existing programmes for research and development in the field of data centres are to be strengthened, and new ones initiated. In the course of the research work, further findings, e.g. on increasing energy and resource efficiency and on the development of environmentally, climate and nature-friendly digital solutions, are to be compiled.

The members of the Alliance for the Strengthening of Digital Infrastructures support the additional needs identified in the area of research and development. In recent years, operators of digital infrastructures have spoken out in favour of expanding the existing research and development programmes, and would like to advise the legislator in further dialogue in order to identify the relevant topics.

In addition to the research priorities defined in the Digital Agenda, research projects should also be initiated on the security of digital infrastructures and on the various types of infrastructure and their advantages and disadvantages, taking into account the user perspective. Similarly, reliable solutions must be created to safeguard the energy consumption of digital infrastructures. A secure and stable energy supply is essential for the operation of digital infrastructures. In order to protect the infrastructure against energy outages, the operators of digital infrastructure maintain fossil-fuelled generators that automatically kick in when the energy supply is interrupted. In order to develop and test low-emission or zero-emission supply alternatives, in particular on the basis of hydrogen or low-carbon biofuels, further research is necessary with a view to the German national hydrogen strategy.

The expansion and strengthening of existing research and development work on various issues in the field of digital infrastructures will make it possible to develop central solutions for climate-friendly operation and resource-efficient use.

Developing a cadastre of data centres

As part of the Digital Policy Agenda for the Environment, there are plans for the establishment of a cadastre – a public register for real estate – for data centres located in Germany. With the help of the cadastre, the economic structure, energy consumption, and possible efficiency classes, etc. of the data centres are to be determined more precisely and follow-up measures to be derived.

The operators of digital infrastructures welcome the establishment of a cadastre of data centres, as has already been undertaken in Frankfurt am Main with the "waste heat cadastre". This can also serve as a model for the cadastre planned by the Ministry for the Environment. In general, it is essential to ensure that no business details, intellectual property, or company secrets of the operators be requested or collected, as this may in some circumstances lead to issues regarding competition law. The cadastre should also provide a framework for exploiting cross-sectoral synergies. From the point of view of data centres, systematic waste heat recovery in particular is regarded as a cross-sectoral synergy which should be discussed and examined. Due to their technical design, digital infrastructures have considerable amounts of waste heat with a temperature level of around 30 to 35 degrees Celsius. By integrating technical systems, e.g. heat pumps, the temperature level of the waste heat can be increased or reduced in order to feed it into a district heating or cold local heating network. However, it should be noted that the use of heat pumps to change the temperature of waste heat can influence the energy efficiency benefits of the overall system.

At present, systematic waste heat recovery is not possible in Germany due to economic obstacles – high acquisition costs for technical equipment and additional energy costs for heat generation. In addition, the previous practical experience of the operators of digital infrastructures makes it clear that heat feed-in is made more difficult by the lack of willingness of the heating network operators to feed heat in.

In order to partially solve the problem described, the development of a cadastre should equally aim at a focus on systematic heat recovery – at least in the local or regional area. In addition to subsidies for the acquisition of the necessary technical equipment, further regulatory measures are needed to open up and use existing heating networks.

Increasing the energy efficiency of data centres
Modern data centres are leaders in terms of energy efficiency, according to both the Borderstep Institute study recently presented by eco and the IEA study. Both studies agree that despite increased efficiency, international data growth means that power demand remains unchanged. With the help of the cadastre and research activities, potential for increasing the energy efficiency of data centres is to be uncovered, and necessary regulatory measures taken.

The operators of digital infrastructures welcome the efforts of the Ministry for the Environment to create a consistent and secure data basis for digital infrastructures located in Germany. However, it remains to be seen what concrete measures will be taken on the basis of the data to be created. From the point of view of data centres, it is important to take into account that they operate in a market environment that is strongly influenced by European and international factors. In order to take account of the international character and the significance associated with a possible standard, the market environment of data centres should be given adequate recognition.

When developing measures to increase the energy efficiency of data centres, it must be borne in mind that data centres are not a homogenous industry, but that the operation of digital infrastructures is based on very different business models and is also subject to diverse technical conditions. eco recently presented the initial results of the study "Data Centres in Europe – Opportunities for Sustainable Digitisation", which was prepared by the Borderstep Institute. A detailed examination of the European data centre landscape makes it clear that the energy efficiency of large modern data centres has increased appreciably – by up to 25 percent – in recent years.

By investing in efficiency, the data centres have not only improved their own "ecological balance sheet", but have also been able to pass on cost advantages to their customers, e.g. by saving energy. In contrast, small and mostly self-operated data centres of small and medium-sized enterprises are often not as energy efficient as large and professionally operated data centres. The same applies to data centres that operate under the constraints of long investment cycles, and have therefore made little or no investment and have undertaken hardly any measures in improving building efficiency and the efficiency of their own IT infrastructure.

To achieve sustainable effects in this context, two strands of measures must be pursued in equal measure. On the supply side, investment incentive programmes must be developed – taking into account the sector heterogeneity described above – which aim to provide incentives and stimulus for investments in the modernisation and/or new construction of modern and efficient data centres. On the other hand, the demand side must be encouraged to move away from the inefficient infrastructure that has been used until now, and that is mostly operated by the company itself. In order to cater for this increase in demand, it is important to remember that the roll-out of a reliable and nationwide broadband network and the expansion of digital infrastructures are absolutely essential.

Strengthening national and European energy efficiency standards
In order to increase the energy efficiency of data centres, the extension of the national "Blue Angel" ("Blauer Engel") certification label developed by the German Environment Agency and the revision or extension of the European Energy Efficiency Directive are the main topics under discussion.
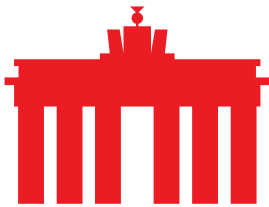
Digital infrastructure operators recognise that further efforts in the field of energy efficiency are necessary, also to contribute to the achievement of Germany's climate policy commitments. However, it seems questionable whether extending the Blue Angel label or revising the Ecodesign Directive are the right instruments.

In principle, digital infrastructure operators are in favour of creating more transparency on the part of policymakers with regard to discussions on energy efficiency. This is necessary because the topic of energy efficiency is located in various German federal government portfolios. One example is the dialogue process on the energy efficiency strategy set up in the German Federal Ministry of Economics and Energy. For the detailed design of the energy efficiency strategy, working groups have been set up with various key topics, e.g. "digitalisation", within the framework of which the development of efficiency labels for data centres is to be discussed. For stakeholders, it is not clear at this point who is in charge of which topic areas and to what extent the portfolios involved exchange information and coordinate their activities. Only if specialist cross-portfolio issues can be discussed and promoted jointly can effective measures and framework conditions be created for long-term investment decisions that lead to measurable improvements in efficiency.

When developing possible energy efficiency labels, legislators must take into account the strongly international business environment in which digital infrastructures operate. In this respect, further critical discussions are needed as to whether a label intended solely for national use will trigger the desired "copycat" effects.

In parallel, a possible work programme for the revision or extension of the European Ecodesign Directive for the coming years is being discussed at European level. With the Ecodesign Directive, the European legislator has defined binding efficiency regulations for various product classes. If digital infrastructures or individual parts of infrastructures are to be subject to regulation by the Ecodesign Directive in future, it needs to be clarified that the term data centre is often used as a generic term for a large number of different infrastructure concepts. As already mentioned at the beginning, the range of digital infrastructures is diverse and characterized by equally diverse characteristics with regard to the business models. Not least for this reason, digital infrastructure operators see a considerable risk in the current discussions on the revision of the Directive.

From the point of view of the industry, it is important to ensure that any possible indirect or direct environmentally-oriented regulation of digital infrastructures is not accompanied by a loss of locational attractiveness in Germany and Europe. In detail, the operators of digital infrastructures should not be subject to blanket regulation with a potentially negative impact. If digital infrastructures are to be taken into account in the forthcoming work on the Ecodesign Directive, the preparatory work should first be used to identify real "resource guzzlers". In addition, representatives from the various infrastructure sectors with the necessary technical expertise should be heard in the further consultation process. The members of the Alliance would like to contribute their experience and expertise to the consultation process.

Strengthening and expansion of training and further education offers

The operators of digital infrastructures acknowledge the efforts made in relation to the measures developed by the Ministry for the Environment, but further cross-portfolio measures in the areas of training and further education are necessary, particularly in view of the increasing shortage of skilled workers.

In 2017, data centre operators employed almost 130,000 employees directly, and another 80,000 indirectly. When it comes to personnel recruitment, data centre operators are already feeling the impact of the increasing shortage of skilled workers. Efforts in the field of education and training are essential to counteract the shortage of skilled workers in a targeted manner. For targeted recruitment of skilled workers, future-oriented occupations requiring training through apprenticeships, such as HVAC (heating, ventilation, and air conditioning) technician, could be promoted. Measures to develop and establish climate and environmentally-oriented training and courses of study should also be discussed. Digital infrastructure operators expect that the importance of issues such as environmental management will increase significantly. Such developments should be reflected in the curricula of the German national education system. Similarly, sufficient teaching capacities must be built up to meet the demand for skilled labour on the labour market.

Conclusion

In summary, digital infrastructure operators consider the Digital Policy Agenda for the Environment presented in March 2020 to be a successful starting point for further discussions in the area of tension between sustainability and digitalisation. On the basis of the measures defined in the Digital Policy Agenda for the Environment, digital infrastructure operators are given an overview of the central environmental challenges of digitalisation, and will be able to take these into account in future investment decisions. The planned strengthening of research and development in the field of digital infrastructures is to be positively highlighted. However, it should be borne in mind that the projects planned should not only focus on the creation of a sound data basis and possible efficiency-enhancing approaches, but that solutions should also be developed for future-oriented issues, e.g. climate-neutral back-up options in the event of an interruption to the energy supply.

Digital infrastructure operators agree that further efforts need to be made in the field of energy efficiency. In order to create a well-founded data basis on efficiency values etc. of digital infrastructures as soon as possible, the existing projects should function as a foundation to be built upon. Similarly, in the course of possible efficiency measures, the characteristics of the business model of the infrastructure providers must be taken sufficiently into account. Instead of aiming for a regulation with a blanket impact through the revision of the European Ecodesign Directive, particularly inefficient infrastructures, e.g. data centres that do not correspond to the current state of the art and are privately operated by the company itself, should be identified and measures should be taken and incentives offered for modernisation and for the construction or use of modern and professionally operated data centres.

Moreover, in addition to the measures contained in the Digital Policy Agenda for the Environment, further efforts are needed in the areas of education and training. In principle, it can be stated that the operators of digital infrastructures are already feeling the impact of the emerging shortage of skilled workers. In order to counteract this development, job profiles for future-oriented occupations must be created and potential applicants must be made aware of them. Further education and training concepts should also be developed on the

basis of recognisable future trends, e.g. digitalisation and the climate-neutral restructuring of the economy and society, and the necessary teaching capacities should be created.

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.