Position Paper 17.6.2020
European Green Deal
CSC – IT Center for Science Ltd.

Summary

- A strong connection between the EU's digital priorities and the Green Deal must be acknowledged and developed further. Digitalisation, datafication and AI as phenomena are some of the key contributors to the objectives of the Green Deal.
- In order to achieve the targets of the Green Deal, sufficient funding for digitalisation and innovation must be secured in the EU budget. The funding levels of Horizon Europe, Digital Europe, CEF2 Digital and Erasmus+ programmes should be at least as close to the Commission's original May 2018 MFF proposal as possible.
- High-performance computing (HPC), data management, AI and connectivity networks must be developed in convergence to create synergetic ecosystems that support climate research and innovation.
- Data policies such as FAIR principles and interoperability, must be promoted and data's movement across borders and sectors must be enabled.
- Digital skills are crucial for Europe's ability to create new innovations. The EU needs urgent investments in broad skills and competence development across all sectors and levels, including teachers and trainers.
- In decisions regarding placement of data centers, smart specialisation strategies and incentives for environmental sustainability and carbon-neutrality must be applied, to ensure cost-efficiency at European level, as well as contributing to the targets of the Green Deal.

Digitalisation and research are key enablers of the Green Deal

CSC thanks the Commission for introducing the European Green Deal and showing high ambition in tackling climate change. CSC agrees with the Commission that achieving systemic change requires both changes in legislation and substantial funding. Research and digitalisation should be emphasized as means to find solutions to the global climate challenge. It is of utmost importance that the economic recovery from the COVID-19 crisis is done according to the Green Deal's principles.

There is a strong link between the Commission's two priorities, the European Green Deal and A Europe fit for the digital age. Digitalisation and new technologies are main drivers behind a more ecologically sustainable way of life. The Commission needs to take this interdependence between digital and environmental policies into account more strongly.

The current COVID-19 crisis has shown that top-level research and international cooperation between scientists are more important than ever. The Green Deal and COVID-19-related research should not be competing for resources, but be seen as supporting each other. Climate change has consequences also in

the health sector, and investing in health and medical research is one part of mitigating the consequences of climate change. On a strategic level, it must be recognized, that the targets of the Green Deal do not contradict with tackling the COVID-19 crisis – on the contrary, fighting climate change will help to prevent pandemics in the future. In addition, seeing the Green Deal as a growth opportunity for European industry and incentivising energy-intensive industries towards climate-friendly innovations will also contribute to the overall cost-efficiency of EU.

In order to achieve the targets of the Green Deal, the Commission must ensure sufficient funding for developing solutions that tackle the climate change. Horizon Europe, Digital Europe, Erasmus+ and Connecting Europe Facility 2 Digital programmes all need to support green innovation and have an adequate funding level to be truly beneficial. The target funding level for these should be at least the Commission's original MFF proposal from May 2018. To boost innovations and develop new technologies, the EU needs to strengthen its own research capabilities, as well as digital infrastructures and skills. Key capacities, such as world-class high-performance computing (HPC), data management, reliable networking connections, and skills must be developed coherently as one entity. The EU must also invest in the strengthening of high-speed digital connections, not only intra-EU, but also between Europe and strategically important regions such as North America and Asia. Good connections support Europe's research and innovation capacities and the increased usage of environmentally friendly video meetings and events. During the exceptional conditions related to COVID-19, physical meetings have been to a large extent replaced by remote meetings. Good practises and lessons learnt must be drawn from this experience, in order to consider how remote connections could be used more as an option for travels also in the future.

Data is one of the key elements in sustainable economic growth, and therefore crucial also for the objectives of the European Green Deal.

The EU must promote policies that enhance the capture, management and use of data. The Commission needs to support practices that are consistent with the FAIR principles (findable, accessible, interoperable and re-usable).[1] Especially important is the interoperability of data. Interoperability and movement of data must be ensured between sectors (research, business and public) and between the data spaces. Interoperability must be systematically promoted in legal, organisational, semantic and technical level, according to the European Interoperability Framework.[2] One piece of existing legislation requiring prompt revision is the Digital Single Market (copyright) directive. As outlined in CSC's statement on the Data Strategy, article 4 of the directive puts commercial users of text and data mining (TDM) at a disadvantage and should thus be amended in order to avoid unnecessary restrictions for TDM for commercial purposes.

[1] http://data.consilium.europa.eu/doc/document/ST-9526-2016-INIT/en/pdf

[2] https://ec.europa.eu/isa2/sites/isa/files/eif_brochure_final.pdf

It is important to recognize the ways in which data brings added value to the society. Data is cross-cutting by nature, and the free flow of data between sectors and borders is a key element in building a data-based economy.

The EU must invest in skills development and life-long learning. The role of data in research is growing, which means that data science should be better incorporated in all university programmes, as well as already in earlier stages of education. Hundreds of thousands of Europeans will need reskilling in the coming years. In order to secure a just transition to greener Europe, life-long learning must be developed and made easier for everyone.

The ICT sector must become greener

In order to reach the EU's climate targets, measures must be taken also in the ICT sector. Regarding the current financial challenges that the EU is facing, it is crucial to also consider the cost-efficiency of investments. Thus, smart specialisation strategies must be applied: on a European scale, common, pan-European structures should be located in regions where they bring most added-value with lowest cost for European taxpayers and with lowest possible environmental burden. For example, in choosing locations for data centers, which by default consume vast amounts of energy, the criteria must support eco-, energy- and cost-efficiency.

Data centers should be built in locations where there is a possibility to use renewable energy and free cooling or utilise the waste heat. Reusing the waste heat generated by a data center for example in a district heating network is a great example of smart sector integration. There is a lot of potential in using the waste heat of data centers in heating, as it solves two problems; the environmental footprint of the data centers reduce, and emissions of carbon intensive heating sector reduce. There are already examples of how to implement such solutions; a good case for benchmarking is CSC's data center in Kajaani, which will host a EuroHPC pre-exascale supercomputer LUMI[3] from the beginning of the next year. The waste heat generated by the center will heat up 5000 homes in the area. In addition to the utilisation of the waste heat, the circular economy thinking needs to be incorporated in the data center business in other ways as well. It means for example exploring the possibilities to build centers on existing infrastructures and taking care of the life-cycle of the materials that are used.

The current EU green public procurement criteria for data centers, server rooms and cloud services should be promoted and private actors should be encouraged to take the environmental aspects into account more comprehensively. The main barrier for utilising the waste heat of data centers is that it is not always economically sensible. The best tool to overcome that problem is different incentives: energy taxation, emissions trading system and funding for technological solutions that help to make the data centers more

[3] https://www.lumi-supercomputer.eu/

environmentally friendly (for example heat pumps, which are needed to raise the temperature of the waste heat so that it can be fed into the district heating network).

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