

22 June 2020

Submitted Electronically

Raffaele Mauro Petriccione, Director General
Directorate General for Climate Action
European Commission
Avenue de Beaulieu 24/Beaulieulaan 24
1160 Brussels, Belgium

Re: Comments on the EU Climate Ambition for 2030 and for the Design of Certain Climate and Energy Policies of the European Green Deal (COM/2019/640 final)

Dear Director General Petriccione:

The Association for Computing Machinery (ACM) is the world's longest established and – with 17,000 members in Europe and 100,000 globally – the largest society of individual professionals engaged in computing in Europe and the world. ACM's [Europe Technology Policy Committee](#) (Europe TPC) is comprised of computer science experts from 10 countries. It is charged with providing European policy and law makers with expert and timely substantive input on computing technology, and the legal and social issues to which it gives rise. We are a non-profit and entirely nonpolitical organisation.

Europe TPC applauds the comprehensive and ambitious sweep of the Commission's Green Deal. We strongly concur with the Commission's premise that realising true energy efficiencies in the Information & Communication Technology (ICT) sector will be critical to Europe's success in meeting the Green Deal's appropriately aggressive climate targets.

Most broadly and fundamentally, we urge the Commission to set specific and mandatory emissions targets and legal limitations for the ICT sector. Such uniform benchmarks and requirements are necessary to produce coordinated action across the sector capable of delivering expected emissions savings while reducing ICTs own (still rising) carbon footprint in line with overall EU emissions reductions targets. Because continued net increases in ICT sector emissions have the potential to undercut or even negate the savings that digitalisation can enable in other sectors, we look to the Commission to provide strong leadership in promoting necessary transformation within the ICT sector itself as a linchpin of its larger climate strategy.

More specifically, in response to the Commission's recent Request for Comment,¹ Europe TPC is pleased to contribute the following observations and recommendations to the Commission's ongoing process of crafting a successful climate strategy:

¹ See, [2030 Climate Target Action Plan](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12265-2030-Climate-Target-Plan/public-consultation) [https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12265-2030-Climate-Target-Plan/public-consultation]

- **Increased ICT sector efficiency will not necessarily reduce, and could *increase*, carbon emissions.**

The premise that the ICT sector can realise dramatically increased energy efficiencies across the economy, thereby reducing emissions, is central to the Green Deal. We note, however, that the sector in fact has long delivered wide ranging efficiency and productivity improvements to the global economy, yet global emissions nonetheless have risen inexorably. This long understood and well-documented dynamic specific to energy consumption, known as Jevons Paradox,² strongly suggests that Commission estimates of a 15% reduction in ICT-driven emissions³ may be materially overestimated. It also cautions that the ICT sector itself should not be permitted to negate any gains it realises in efficiencies by *its own* energy consumption.

Recommendations:

- Europe TPC strongly endorses the Commission’s call for ***adoption of a carbon tax*** to implement the Green Deal, as this has the potential to prevent the rebound effect associated with Jevons Paradox. We also urge the Commission, in proposing the specific language of such a statute, not to include any exemption from such a tax for the ICT industry. Such a provision, we believe, would only encourage rather than disincentivise growth in the sector’s energy demands and carbon footprint, as per Jevons Paradox;
- Care should be taken in all relevant internal Commission analyses and public messaging not to conflate gains in energy efficiency with emission reductions. ***Rigorous and transparent accounting*** by the European Commission will be needed to preclude or detect potentially consequential errors arising from that false equivalence;⁴ and
- The Commission should legislate specific and ambitious greenhouse gas (GHG) ***emission reduction requirements accompanied by suitable enforcement mechanisms*** for the ICT sector overall. Specifically, we urge codification of the standard adopted in February 2020 by the International Telecommunication Union,⁵ which would impel a 45% reduction in current GHG emissions by 2030 and their elimination (“net zero” emissions) by 2050. In addition, to reduce the likelihood that ICT sector emitters will relocate outside the European Union to jurisdictions with less stringent emissions limitations, we also urge the Commission to aggressively negotiate and otherwise promote adoption of its new standards globally.

² Named for the 19th century economist who first identified it, Jevons Paradox occurs when technological progress or government policy increases the efficiency with which a resource is used (reducing the amount necessary for any one use), but the rate of consumption of that resource rises due to increasing demand. Such an increase is often referred to as a “rebound.” See, William Stanley Jevons, *The coal question: an inquiry concerning the progress of the nation, and the probable exhaustion of our coal-mines*. Macmillan, London (1866).

³ European Commission, [Supporting the green transition](https://ec.europa.eu/commission/presscorner/detail/en/fs_20_281). (February 2020) [https://ec.europa.eu/commission/presscorner/detail/en/fs_20_281 - accessed March 2020].

⁴ Similarly rigorous and “real world” analysis will be necessary in assessing and quantifying the true carbon savings realised by the application of “smart” technologies. All such calculations must factor in not only the cost of the device itself, but the costs of running it, and as well as storing, analysing and securely transferring data associated with it.

⁵ International Telecommunications Union, [ICT industry to reduce greenhouse gas emissions by 45 per cent by 2030](https://www.itu.int/en/mediacentre/Pages/PR04-2020-ICT-industry-to-reduce-greenhouse-gas-emissions-by-45-percent-by-2030.aspx) (2020) [https://www.itu.int/en/mediacentre/Pages/PR04-2020-ICT-industry-to-reduce-greenhouse-gas-emissions-by-45-percent-by-2030.aspx - accessed March 2020].

- **Increased data centre efficiencies must be encouraged by strong and strategically detailed regulation grounded in the realities of the marketplace.**

Europe TPC applauds the Commission’s goal of achieving carbon-neutral data centres by 2030. Realising that goal, however, must be dictated by a “real world” perspective on the actual nature of current energy markets and data centre energy procurement practices if real carbon reduction is to be achieved.

Recommendations:

- **Data centre-specific emission limiting legislation** should separately delineate the degrees to which mandated limits may be achieved by the purchase of energy from renewable sources as opposed to the purchase of carbon offsets;⁶ and
- There are practical limits to the amount of carbon reduction that may be achieved through the use of renewable energy sources. Recognising this, we also recommend **adoption of an absolute statutory limit on total data centre energy consumption.** The “decarbonisation” of data centres thus must be pursued, if efforts are to succeed, in tandem with serious efforts to curb overall energy demand.

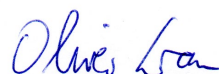
Finally, with respect to all aspects of the European economy beyond the ICT sector touched by the Green Deal, we strongly recommend that the Commission neither employ nor recommend the use of any proof-of-work based distributed ledger technology, such as blockchain, for supply chain management purposes (*e.g.*, electronic product passports). Indeed, the technology’s inherent inefficiency and exorbitant power consumption requirements are fundamentally incompatible with the goals of the Green Deal.

ACM’s Europe Technology Policy Committee stands ready to answer any questions about these comments and the technologies they address that you, your staff, or the Commission may have. To reach any of the Committee’s or ACM’s technical experts worldwide, kindly contact the Chair of the Europe TPC directly at Oliver.Grau@ACM.org or ACM’s Director of Global Policy and Public Affairs, Adam Eisgrau, at acmpo@acm.org.

Sincerely,



Bran Knowles, Principal Author⁷
Data Science Institute, Lancaster University*



Oliver Grau, Chair
ACM Europe Technology Policy Committee

* *Affiliation for identification purposes only and does not reflect institutional endorsement.*

⁶ Given that only 2% of offsets reportedly result in true net carbon removal, drawing and codifying this distinction is particularly important to assure that net carbon reductions actually are achieved in reality rather than merely on paper. Cames, M., Harthan, R.O., Füssler, J., Lazarus, M., Lee, C.M., Erickson, P., and Spalding-Fecher, R., [How additional is the clean development mechanism? Analysis of the application of current tools and proposed alternatives](https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf). (Öko-Institut, 2016) [https://ec.europa.eu/clima/sites/clima/files/ets/docs/clean_dev_mechanism_en.pdf - accessed March 2020]

⁷ The principal author and Europe TPC wish to recognise and acknowledge the influence on these comments of colleagues at Lancaster University: Mike Berners-Lee, Gordon Blair, Charlie Freitag, Adrian Friday and Kelly Widdicks.