Opinion of the European Economic and Social Committee on 'Transport, energy and services of general interest as drivers of sustainable European growth through the digital revolution'

(own-initiative opinion)

(2019/C 353/13)

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1. Conclusions and recommendations

1.1. The EESC believes that sound European systems of transport, energy and services of general interest are vital for a fully integrated continent addressing the global challenges of sustainable competitive growth in a modern, digitalised and smart environment able to deal with economic growth, prosperity, job opportunities, poverty, inequality, climate, peace and justice, as required by the UN Sustainable Development Goals. The active participation and engagement of EU citizens — as entrepreneurs, producers, workers, consumers, prosumers, investors and final users — must be, according to the EESC, at the centre of policy options and actions.

1.2. The EESC is strongly convinced that completion of the EU Single Market still remains the most important pillar to enhance European digitalised growth. The EESC asks the European Commission (EC) to enforce and verify the correct implementation of the approved legislation both for businesses and consumers and **urges the EC to review the Single Market White Paper** in order to devise a strategy to complete the Single Market by 2025, for stronger businesses accompanied by wider worker and consumer protection and covering new fully interconnected and interoperable smart European transport, energy and services of general interest.

1.3. The EESC recommends the development of a **regulatory environment that drives competition and innovation**, and empowers citizens and companies with trust and an awareness of the benefits of digital technology applied to transport, energy and services of general interest to citizens, consumers, companies and workers, including all of these combined into a single 'e-person'. The EESC suggests moving from concepts of data ownership to a definition of data rights for persons and legal entities. Consumers should be in control of data produced by connected appliances so that consumers' privacy is ensured.

1.4. **The free flow of data is essential**. The EESC therefore calls for effective solutions that eliminate the problems associated with the accessibility, interoperability and transfer of data, while securing adequate data protection and privacy, fair competition and wider consumer choice. The same conditions must apply to public and private companies with reciprocity for data exchanges and compensation of costs.

1.5. The EESC calls upon the EC and Member States to allocate enough resources and powers to efficiently monitor and enforce existing legislation. Further, the EESC calls upon Member States to swiftly adopt the EC's proposal for an **EU collective redress scheme**. It shall be ensured that only well-grounded cases are taken forward, thus avoiding excessive litigation.

1.6. The EESC has a clear position on the question of the extent to which it is ethically acceptable to delegate the choices to be made to **systems based on artificial intelligence** (AI): all automated systems, however sophisticated they may be, must operate according to the principle of human control over the machine.

1.7. **The EESC calls upon the EC to publish guidance and clarifications on the General Data Protection Regulation (GDPR)** to achieve uniform enforcement and a high level of data and consumer protection, including for connected and automated cars, and to revise product liability and insurance rules to adapt them to a situation where decisions will increasingly be made by software. Cybersecurity is of utmost importance in order to guarantee a safe and accepted transition.

1.8. The EESC urges the **EC to develop an appropriate framework for digitalised national healthcare systems to share** the health data of EU citizens in accordance with the GDPR., i.e under strict conditions of privacy and anonymity, for the purposes of research and innovation carried out by EU institutions and companies.

1.9. As **5G** will raise **mobile and internet technology** to the status of a **General Purpose Technology** strongly contributing to 'the process of industrial mutation that incessantly revolutionises the economic structure from within, incessantly destroying the old one, incessantly creating a new one …', the **EESC urges the EU institutions and Member States to complete the Digital Single Market, including the development of capabilities to integrate and use 5G services to defend and improve the competitiveness of European industries** such as transport and automotive, energy, chemical and pharmaceuticals, manufacturing, including SMEs, and finance, where Europe is a leading global power.

1.10. The EESC asks the EC to strictly monitor progress in the deployment and real use of 5G and calls on the Member States to further accelerate the process. The EESC suggests adopting **a European policy requiring each country to have at least two suppliers, at least one of them European**.

1.11. In addition, in order to be able to assess the potential risks of electromagnetic radiation to human health and the environment, the EESC calls on the Commission to commission a biological impact assessment of 5G radiation.

1.12. The EESC points out that digital transformation of the European energy and transport systems demands new skillsets for workers and employees at all levels and underlines the need for stronger links between education and training providers and industry, fostering **large-scale mechanisms to enhance digital literacy and digital life-long capacities** and permanent training: the European Social Fund must contribute on these issues. Education and training is also necessary for citizens and consumers so that they are not excluded from the digital market because of a lack of access to the electronic communications network or due to digital illiteracy. For the EESC there is a need to improve cyber hygiene also through awareness campaigns among individuals and businesses ([1]).

1.13. The **EESC**, in order to organise the transition to zero- and low-emission mobility, **supports: an integrated and systemic approach, that is technology-neutral**; low and zero emission vehicles and infrastructure; a gradual long-term switch to alternative and net-zero carbon fuels; increased efficiency, as with the SES, by making the most of digital technologies, as with the European Rail Traffic Management System (ERTMS), and smart pricing and further encouraging multi-modal integration and shifts towards more sustainable transport modes; **empowered citizens with growing connectivity to choose 'mobility-as-a-service'.**

([1]) OJ C 227, 28.6.2018, p. 86.

1.14. The energy sector's contribution to decarbonisation should be channelled, according to the EESC, through various actions:

— the deployment of key emerging technologies for a climate neutral, energy-efficient and circular economy;

— **concentration on smart grids** to integrate and optimise the use of different renewable sources;

— clean technologies in the production, storage, transmission, distribution and consumption of energy, demand-side response, energy efficiency, buildings and micro-generation;

— a special strategy for energy-intensive industries and regions;

— a more robust Emissions Trading System;

— stronger instruments for security and cybersecurity of structures and networks.

1.15. The EESC points out that:

— large interconnected European energy, transport and communication infrastructures are the vital nodal points of the Single Market and are required if the EU is to stay at the leading edge of worldwide progress and competition;

— the transport priority of completing the TEN-T network requires investments of around **EUR 500 bn** for the core network alone by 2030;

— investments by market players in Europe for 5G are estimated at **EUR 60-100 bn** annually for the next five years; connectivity in rural areas would require a EUR 127 bn investment;

— achieving a net-zero greenhouse gas economy will require additional investments in the range of EUR 175 to 290 bn a year for a total of **EUR 520-575 bn** in energy, and about **EUR 850-900 bn** in transport.

1.16. In order to finance such huge investments, about 9-10 % of EU GDP, mostly private, and largely additional, the EESC **recommends fostering an investment-friendly environment, including the implementation of the 'golden investment rule'** and new financial schemes through cohesion instruments, EIB, CEF and Invest EU, Horizon Europe and Public and Private joint initiatives. The EESC hopes that the public and private investors can bear these investments, and for this purpose recommends that administrative procedures be simplified, funds and financing broadened, negative and positive externalities internalised, and an investment friendly environment fostered. The ongoing work to create an EU taxonomy for greening finance is an important step.

1.17. However the EESC is deeply convinced that only a **political and social trade-off** based on a shared systemic vision with clear achievement of intermediate verifiable objectives in the short and medium term would ensure the acceptance of such a huge financial engagement by private investors and of such a huge public investment by the European taxpayer.

2. Cross-cutting challenges

2.1. The Sustainable Development Goals are a call for action by all countries to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to economic growth, prosperity, poverty, inequality, climate, job opportunities and peace and justice. The SDGs are also an urgent call to shift the world onto a more sustainable path. Digitalisation is strictly connected to the SDGs, as it enables them by empowering industry, innovation, infrastructure and the society as a whole. There is clear evidence of the positive link between digitalisation and the achievement of many SDGs.

2.2. The EESC considers that Europe must be open to the development and introduction of new kinds of business models, based on digital platforms, provided that transparency and social clauses are safeguarded.

2.3. While more and more people have access to digital technologies, a digital divide in the use of digital technologies persists as some people do not have access to them and some people are more capable than others of leveraging the digital transformation for a better life.

2.4. The digital transformation of the European economy demands new skillsets at all levels. In many Member States the links between education providers and industry are missing, when on the contrary these developments require cooperation to be stepped up so as to prevent skills gaps and mismatches from developing. Continuous education and training and lifelong learning are crucial elements in adapting to the transformation of workplaces and in fostering professional development. Education and training, also via research projects, is an essential way to foster talents and provide high level skills for the EU to remain competitive.

2.5. The EESC furthermore believes that the EU and Member States needs to support workers at risk of losing their jobs as a result of both the digital and energy transitions. For that purpose, the EESC calls on the EC, European Parliament and Council of the EU to ensure that the European Social Fund and the European Globalisation Fund are properly designed and funded to address those challenges.

2.6. The free flow of data is essential. The EESC therefore calls for effective solutions that eliminate the problems associated with the accessibility, interoperability and transfer of data, while securing adequate data protection and privacy. The same conditions must apply to public and private companies with reciprocity for data exchanges and compensation of costs.

2.7. The EESC calls upon the EC to ensure fair competition and consumer choice in the domain of access to data. In the automotive industry, fair access to in-vehicle data will be crucial to ensure that consumers have access to competitive, convenient and innovative mobility services. The EESC recommends that the EC provide guidance with regard to how the GDPR and privacy rules apply to connected and automated cars. Similar challenges might also arise in the domain of public transport for Mobility-as-a-Service (MaaS).

2.8. The EESC also calls upon the EC to revise product liability and insurance rules to adapt them to a situation where decisions will increasingly be made by software. Principles of security and safety by design and by default should be systematically applied to increase trust in the take-up of these technologies.

2.9. Cybersecurity is of utmost importance in order to guarantee a safe transition. There is a need to fully address the challenges identified for crucialsectors at EU level — fostering the role of the European cybersecurity agency, to reduce the risk of weak links in the increasingly interconnected European grid. The EESC particularly welcomes the work of European Network of Transmission System Operators for Electricity (ENTSO-E) in this regard.

2.10. Large quantities of data are generated by sensors and by the progressive roll-out of smart meters. Such data must be processed and made accessible by the relevant stakeholders in a safe, transparent way that preserves individual freedoms. The EESC stresses that while the potential of smart technologies is significant, it nevertheless tests many well-established principles of consumer protection, such as privacy, liability and safety, as well as efforts to combat energy poverty. As for data, regulators need to find an approach through which consumers always have access to and are in control of the data they produce and which fosters competition and brings innovative services.

2.11. Artificial intelligence is about to transform all sectors and gives rise to a number of challenges. For instance, guarantees are needed in relation to the transparency of automatic decision-making and the prevention of discrimination against consumers.

2.12. Consumers also need to have access to simple and standardised products, especially for consumers who are not experts, elderly consumers and all those in vulnerable situations.

3. **Transport**

3.1. In the EU Single Market, the transport sector accounts for 6,3 % of EU GDP and directly employs around 13 million people in the EU: more than 7 % of total EU employment, including about 2,3 million people in automotive manufacturing.

3.1.1. Transport is a vital enabler of several SDGs regarding economic development, industry and SMEs, as well as trade and investment. Meanwhile, transport has also problems to fulfil the SDGs 2 as well as the objectives of the Paris Agreement ([2]).

3.1.2. Transport policy-making needs to focus on the completion of a fair, effective and fully digitalised Single Market which brings tangible benefits for all. Today it is still a patchwork, including with regard to international competition. The transport sector also fulfils an important function as one of the key enablers of the Single Market at large.

([2]) OJ C 367, 10.10.2018, p. 9.

3.1.3. 'In road transport an appropriate balance valid throughout the EU between liberalisation and social clauses to apply to road drivers has not yet been found despite the recent proposed changes in road legislation' ([3]). The lack of enforcement is today recognised as the major road problem together with a shortfall of about 20 % of road drivers.

3.1.4. EU rail freight transport, liberalised in 2007, is not yet interoperable, even though 50 % of traffic is international. Passenger satisfaction should be further improved. The deployment of ERTMS should be a centrepiece of the EU Digital Railways strategy in order to enable its advantages to be put into practice (e.g. technical and operational harmonisation, increased network capacity, improved reliability, reduced maintenance costs, automatic train operation, etc.).

3.1.5. In aviation, markets are functioning more efficiently. Air fares have reduced by a factor of ten since liberalisation and routes multiplied by seven, but infrastructure and service costs have doubled. There are still a considerable number of problems and uncertainties regarding the various forms of employment of aircrew, sometimes involving practices that constitute a violation or circumvention of applicable law. In terms of greater efficiency, the Single European Sky (SES) should be fully implemented, resulting in more direct flight routings, less travel time and about 10 % reduction in CO_2 emissions. The Council should stop blocking it. The EESC calls for the swift adoption of the Revised Air Passenger Rights Regulation by the Council as major clarification is required to significantly reduce the number of court cases.

3.1.6. The recently adopted Port Service Regulation (PSR) finally provides ports and their stakeholders with a solid but flexible legislative framework together with the General Block Exemption for Ports.

3.2. ***Decarbonisation and zero emissions***

3.2.1. Transport still depends on oil for 94 % of its energy needs. Road transport accounts for about 73 %. Transport is the only EU industry to have increased its CO_2 emissions since 1990.

3.2.2. In 2018 the EC presented its 2050 vision for a climate-neutral future. 'Achieving deep emissions reductions will require an integrated system approach. This includes promoting (i) overall vehicle efficiency, low- and zero emission vehicles and infrastructure; (ii) a 2050 switch to alternative and net-zero carbon fuels for transport; (iii) increased efficiency of the transport system – by making the most of digital technologies and smart pricing and further encouraging multi-modal integration and shifts towards more sustainable transport modes' with sufficient funding for the transition and extension of the public transport network in rural as well as in urban areas. However, shifting to a greener economy is a difficult and painful step ([4]).

3.2.3. Achieving a 100 % reduction of CO_2 in transport by 2050 is estimated to require investment of about EUR 800 bn per annum, mostly financed by the private sector ([5]). To support such investment, a strong regulatory framework for sustainable finance is needed.

3.2.4. With regard to the technology-neutral approach, the EESC would like to underline that propulsion technologies other than electricity, such as hydrogen or completely fossil-free liquid fuels such as HVO100, also provide great potential for clean mobility ([6]). A modal shift toward public transport is also an active means of climate protection. Manufacturing electric batteries will be an factor for energy independence.

3.2.5. The EESC agrees that the implementation of the International Maritime Organization (IMO) target for shipping should be recognised as the first priority for the sector with 2023 as a milestone for a breakthrough in rolling out the measures to reduce emissions and to define the pathways in terms of future fuels.

3.2.6. Investing in clean and alternative fuel infrastructure is time- and cost-intensive for all modes and should be accompanied by corresponding incentives to make use of the intended infrastructure, firstly by providing all the information needed by users through open platforms.

([3]) OJ C 81, 2.3.2018, p. 195.
([4]) ESPAS, *Challenges and choices for Europe*, April 2019.
([5]) COM(2018) 773 final.
([6]) OJ C 345, 13.10.2017, p. 52, OJ C 262, 25.7.2018, p. 75.

3.3. ***Zero transport fatalities, autonomous driving, mobility as a service***

3.3.1. Human error is involved in 95 % of all traffic accidents on Europe's roads, in which more than 25 300 people lost their lives in 2017 and 1,2 million were injured, with the cost of accidents amounting to EUR 120 bn per annum.

3.3.2. Land transport technology will most likely be revolutionised by **digitalisation** and automation: the EESC notes that this new technology has the capacity to both improve transport market efficiencies but also to provide analytical data to assist in the control and enforcement of existing legislation and the protection of human and social rights.

3.3.3. Digitalisation will also be the key for the development of new market models, including various types of platforms and the **sharing economy**, which is far from being completely developed and will most likely not cover rural areas where public transport is not available. The EESC calls on the EC to guarantee the safety of shared means of transport, starting with electric scooters.

3.3.4. By introducing **automatic driving**, it should be possible to reduce fatalities significantly, or even eliminate them entirely. However, the EESC believes that driverless cars will only be accepted when they provide the same level safety as other passenger transport systems such as trains or large aircraft. The EESC notes that problematic areas may be a hurdle for public acceptance: 1) additional costs, 2) the growing complexity of driving a car ([7]), 3) the long time span of 'mixed traffic' (automatic and manual), when the number of accidents could increase and road capacity could decrease, 4) concerns about safety and cybersecurity, and 5) legal uncertainties about liability in case of accidents.

3.3.5. According to the EESC 'zero fatality' could be brought further into the analysis: urgent need for national laws on traffic rules and the corresponding sanctions to be harmonised; affordability of new, 'safe' cars for consumers and businesses; only humans can, by definition, make 'ethical' choices and machines must operate alongside humans and not replace them; premium cuts by insurance companies as a way of giving people an incentive to buy safer vehicles; any new regulation on data access for vehicles must follow the safety first principle.

3.3.6. Connected and automated mobility solutions across transport modes, including public transport, represent an important area of innovation where the EU has the potential to become a world leader. This can developed only through cooperation by public and private efforts and investments.

3.3.7. Mobility-as-a-Service (MaaS) describes a shift away from personally-owned modes of transportation and towards public transport and mobility solutions that are consumed as a service ([8]). The key concept behind MaaS is to offer travellers mobility solutions based on their travel needs. MaaS regards the entire transport system as a single entity. On-demand mobility can also help improve access to mobility for citizens who live in remote areas or who experience mobility difficulties (elderly and/or disabled persons for instance).

3.4. ***Investment***

3.4.1. The EESC recognises that in many areas in Europe today's transport infrastructure network does not deliver. Anticipating the constantly rising demand for transport services, significant amounts of public and private investment are needed to build and improve transport infrastructure.

3.4.2. **Completion of the TEN-T network** on time. with optimised geographical coverage, must be an absolute priority: the core TEN-T network by 2030 and the comprehensive network by 2050 or earlier. Achieving the core network alone requires investments of around EUR 500 bn, without considering resilience and upgrading existing infrastructure. These investments cannot be funded by CEF grants or EU instruments only, and MS resources are probably not enough. There is a concrete risk of substantial delays.

([7]) OJ C 440, 6.12.2018, p. 191.
([8]) OJ C 345, 13.10.2017, p. 52.

3.4.3. Grants will continue to play an important role in EU investment policy in the transport sector, particularly in those cases where market investments are more difficult to realise. However, blending grants with other sources of financing such as the European Investment Bank or private sector loans, and mobilising public and private sector investors including public and private cooperation, are essential additional tools.

3.4.4. 'The EESC calls for investment in technology and infrastructure on which digital transport can be built, in particular traffic management and control systems: SESAR […] ERTMS […] and C-ITS. Furthermore, 5G connections have to be made available along the TEN-T core network. EU funding instruments such as the Connecting Europe Facility, InvestEU and Horizon EU should prioritise these undertakings' ([9]).

3.4.5. 'The EESC […] considers that […] a **road pricing system** which complies with the "user pays" and "polluter pays" principles would have a positive effect provided the revenues are earmarked' ([10]).

4. Energy

4.1. *A single market for energy*

4.1.1. In 2016, the EU energy sector turnover was EUR 1 881 bn and directly employed around 1 630 000.

4.1.2. All Europeans should have access to secure, sustainable and affordable energy. This is the primary objective of the Energy Union. The EESC voices its disappointment at the significant differences in energy prices across Member States, revealing a major failure in the **Single Energy Market**. With the implementation of the EU Energy Union and the Single Digital Market, it expects prices, except for the tax component, to converge.

Human-centric digitalisation of the energy sector is crucial for the EU, since it can enable energy consumers and prosumers to be at the centre of the issue and contributes to a new design for energy markets.

4.2. *Digitalisation and new technologies*

4.2.1. In the context of the SET Plan, digitalisation provides new opportunities for suppliers by optimising their valuable assets, integrating renewable energies from variable and distributed resources, and reducing operational costs; at the same time, it should favour all by reducing energy bills for the public and businesses, through energy efficiency and participation in flexible demand mechanisms. The EESC calls on the EC to assess the results achieved and where necessary to take further action.

4.3. *Smart energy grid and renewable energy sources (RES)*

4.3.1. The costs of some renewables costs are estimated to be already close to current market prices.

4.3.2. Distributed energy solutions and smart controls are becoming cheaper. Smart grids are a key component of this emerging system; with digitalisation, they will help to link up new energy environments. The smart energy systems of the future will not develop in isolation: they will connect — digitally and physically — different types of energy and transport networks, with increasing opportunities. Electricity is likely to be the first energy sector impacted, digitalisation enabling stronger connections to the heating and cooling sector, in particular in buildings and the mobility sector, fostering enhanced participation of stakeholders in local, regional and European value chains involving local communities and prosumers in energy communities and energy transactions and boosting European innovation and businesses.

4.3.3. H2020 has provided financing for a series of demonstration projects on grid distribution, transmission grids, distributed storage, large scale storage, RES and H&C, covering technologies for the consumer, grid technologies, ancillary services for the market, energy and hydro storage, batteries, wind turbines, PV, solar, thermal, biogas and micro-generation. The EESC welcomes the creation of the Innovation Fund that will provide increasing support to demonstration projects.

([9]) OJ C 345, 13.10.2017, p. 52.
([10]) OJ C 81, 2.3.2018, p. 195.

4.3.4. The EESC urges the EU to take more steps towards eradicating energy poverty. Concrete measures should be taken to facilitate the deep renovation of buildings and solar panels should, wherever useful, be installed for those in, or at risk of, energy poverty. The EU should bear in mind that the poor cannot afford such measures.

4.3.5. The EESC welcomes the work of the Coal Regions in Transition Platform. The energy transition indeed impacts some regions more than others, especially where fossil-fuel extraction, power and energy-intensive production is concentrated. Therefore, the structural change in coal and carbon-intensive regions and sectors will have to be carefully monitored and effectively managed, ensuring a fair and socially acceptable transition that leaves no worker and no region behind.

4.3.6. Energy-intensive industries account for more than 6 million direct jobs in Europe and are the basis for multiple value chains, including clean energy systems. Emissions from the energy-intensive industries account for 60 to 80 % of industrial emissions. The challenges in decarbonising energy-intensive sectors are enormous and will require both technological and non-technological innovations (e.g. new business models).

4.4. *Investment in energy*

4.4.1. Strengthening the European energy market, facilitating the energy transition and ensuring secure system operation all rely on adequate, well-developed and cost-effective transmission grids in Europe.

4.4.2. Innovation, such as power-to-gas grid injections or hydrogen, may bring substantial results and become economically viable if efficiently supported.

4.4.3. The average annual investment in the energy sector in the 100 % CO_2 reduction scenarios ([11]) would amount to EUR 547 bn per annum (2,8 % of GDP) in 2031-2050, compared to EUR 377 bn (1,9 % of GDP) for the baseline These figures represent a significant amount, even for a developed economy.

5. **Services of general interest**

5.1. The main strategic line is to implement a people-centred approach to delivering services of general interest as drivers of sustainable European growth. The 20th and final principle of the European Pillar of Social Rights deals with 'access to essential services' and states that everyone has the right to access essential services of good quality, including water, sanitation, energy, transport, financial services and digital communications. To take effect, specific sustainable development and cohesion measures are needed.

5.2. ***Citizens and businesses are demanding more open, transparent, accountable and effective*** governance. Reaching economies of scale and agility by adopting cloud computing architectures will help move towards e-government, e-health, e-procurement and e-invoicing, allowing public services to share information and making it easier for citizens and businesses to interact.

5.3. There is a risk that elderly, or digital illiterate, consumers are excluded as a result of the complete digitalisation of SGI. Consequently, some conventional delivery points for these services should be maintained.

5.4. The EESC recommends that the European Semester include provisions regarding the accountability and transparency of the allocation of services of general interest in Member States as well the access and proper functioning of the services.

5.5. Many citizens in the European Union face, to different degrees, severe economic difficulties in accessing essential services, among others in the fields of housing, energy, electronic communications, transport, water, healthcare and social services.

5.6. Lack of access to SGIs may depend on a range of factors: it may be economic, geographical, social (unequal treatment), physical (due to disability) or the fact of being inappropriate to needs and/or technical progress (mismatch/inadequate level of quality and/or safety). Digital technologies can help overcome some of these challenges.

([11]) COM(2018) 773 final.

5.7. In the case of healthcare services, digitalisation has the potential to deliver better disease prevention, diagnosis and treatment. Tools such as the electronic health record (EHR) may allow consumers constant access to their medical history and pharmaceutical prescriptions. Mobile health apps and online medical consultations may provide excellent support for patients and consumers in their efforts to maintain their health and prevent illness, especially for those who live in remote areas. However, the benefits of digital health products and services entail serious risks when it comes to patients' privacy, security and safety, as breaches of personal health records and data stored in healthcare settings may become more frequent. The EU should develop a comprehensive regulatory framework to ensure a harmonised approach.

5.8. Given the growing use of digital health services and products, not least in a cross-border environment, it is also key to harmonise the approach to liability for such services and products across the EU. Legislative measures such as strong market surveillance and law enforcement, as well as efficient redress tools for digital health products and services, must be put in place to contribute to the effective protection of EU consumers.

5.9. The EESC urges the EC to develop an appropriate framework for national healthcare systems to share for research and innovation developed by EU institutions and companies the health data of EU citizens in accordance with GDPR, i.e. under strict conditions of privacy and anonymity.

5.10. In the case of SGI, operators should deliver services digitally while still keeping other channels open for those who are disconnected by choice or necessity.

5.11. SGI in public transport are crucial to improve quality of life and meet basic EU objectives. Wide discretion is necessary for public authorities to provide, commission and organise SGI.

6. **5G**

6.1. ***Rolling out of 5G on the Single Market***

6.1.1. Public authorities have started to take measures to facilitate the introduction of 5G on the Single Market, including 5G spectrum assignments. In the coming months, European mobile operators should prepare to deploy and perform tests under 'real' conditions, as the first 5G smartphones and terminals are expected to be available in the first half of 2019. However, only twelve Member States have completed or launched at least one spectrum auction as of early December 2018.

6.1.2. At international level, all countries are competing to be among the first to launch 5G nationwide. The EU is also competing. The five major vendors of infrastructure include two European suppliers, two Chinese, and one Korean. No major European company is among the first to produce 5G devices and chipsets.

6.1.3. The EESC warns that the competiveness of European industries such as transport and automotive, energy, chemical and pharmaceuticals, manufacturing, including SMEs, and finance industries, where Europe is a leading power, will depend on the capability to integrate and use 5G services.

6.1.4. The EESC is aware that scientists have issued warnings about the dangers that electromagnetic radiation from 5G may pose to human health and the environment, particularly high-volume, deep penetration radio-frequency signals in buildings and other enclosed spaces. The EESC calls on the Commission to commission a biological impact assessment of 5G radiation and the risk of interference with other frequency ranges.

6.2. ***5G investment needs***

6.2.1. Investments by market players in Europe for 5G are estimated at EUR 60-100 bn annually for the next five years. They will provide all main European socioeconomic drivers with gigabit connectivity. Improved connectivity in rural areas will require a further EUR 127 bn investment.

6.2.2. 5G will raise mobile and internet technology to the status of a General Purpose Technology affecting productivity and economic activity across a broad range of industries handling a greater number of devices and higher volume of data, enabling the massive use of IoT and developing Mission Critical Services.

7. Specific remarks

7.1. Further, the EESC asks the EU Institutions to take in deep consideration the following challenges on which the Committee has already worked and will continue to work in the future as important issues to address in the context of this Opinion:

— Internalise all external costs through positive and negative incentives ([12]);

— Energy Taxation Directive in accordance with CO_2, NOx, SOx ([13]);

— A distributed energy solutions system ([14]);

— ETS market stability for the next ETS trading period (in 2021), and measures post-2020 ETS ([15]);

— A grid digital information exchange platform to manage electricity flows ([16]);

— Energy Big Data management ([17]);

— Social and economic challenges involved in phasing out coal ([18]);

— Small modular nuclear reactors (50-300 MW), cheaper and easier to install. EU standards required ([19]);

— Long-distance high voltage grids linking continents: a Euro-Asian perspective ([20]);

— Security of supply and investment protection ([21]);

— Energy efficiency ([22]);

— Precertification of products ([23]);

— Cloud rules ([24]);

— EU manufacturing platforms ([25]);

([12]) OJ C 190, 5.6.2019, p. 24; OJ C 110, 22.3.2019, p. 33.
([13]) OJ C 228, 5.7.2019, p. 37.
([14]) OJ C 34, 2.2.2017, p. 44.
([15]) OJ C 424, 26.11.2014, p. 46; OJ C 288, 31.8.2017, p. 75.
([16]) OJ C 34, 2.2.2017, p. 44; OJ C 345, 13.10.2017, p. 52; OJ C 262, 25.7.2018, p. 86.
([17]) Final study on The ethics of Big Data: Balancing economic benefits and ethical questions of Big Data in EU policy context; OJ C 242, 23.7.2015, p. 61.
([18]) OJ C 303, 19.8.2016, p. 1.
([19]) OJ C 237, 6.7.2018, p. 38; OJ C 341, 21.11.2013, p. 92; OJ C 110, 22.3.2019, p. 141.
([20]) OJ C 228, 5.7.2019, p. 95; OJ C 143, 22.5.2012, p. 125.
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— Telecoms and data network ([26]);

— Data flow must be secured and trusted ([27]);

— Data ownership and data rights ([28]);

— Data storage in the EU ([29]).

Brussels, 17 July 2019.

The President
of the European Economic and Social Committee
Luca JAHIER

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([27]) OJ C 440, 6.12.2018, p. 8; OJ C 227, 28.6.2018, p. 86.
([28]) OJ C 288, 31.8.2017, p. 107; OJ C 81, 2.3.2018, p. 209; OJ C 237, 6.7.2018, p. 32.
([29]) OJ C 345, 13.10.2017, p. 52; OJ C 227, 28.6.2018, p. 11.