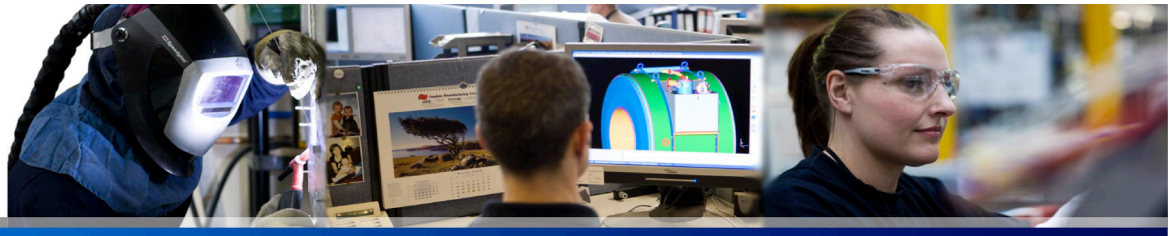
EUROPEAN FORUM for MANUFACTURING



BRINGING EUROPE TO A GLOBAL LEADERSHIP ON BREAKTHROUGH TECHNOLOGIES

Wednesday 9 December 2020
18h30 - 20h00
Virtual Meeting

WELCOME & INTRODUCTION

Ondřej KOVARÍK MEP, (Renew Europe, Czech Republic) Economic & Monetary Affairs Committee;
Opinion Rapporteur on Artificial Intelligence in Education, Culture & the Audiovisual Sector;
Substitute: Civil Liberties, Justice & Home Affairs Committee;
Delegation for the Relations with Canada

As Chair for the event, he welcomed fellow contributors to the European Forum for Manufacturing which would focus on this very important topic of Bringing Europe to a Global Leadership on Breakthrough Technologies. The programme would begin with an Impulse Statement to stimulate discussion, followed by brief presentations by MEPs and discussion with manufacturers.

IMPULSE STATEMENT

'Which Technological Priorities for Europe's Strategic Autonomy?'

André LOESEKRUG-PIETR, Executive Chairman, JEDI - Joint European Disruptive Initiative, the European Darpa,; Former Special Adviser to the French Minister of Defence

New technologies are steadily changing the way we work, travel, communicate and relate to each other. They are the backbone of the 21st century in economic and social terms. They also exert a major influence on the strategic autonomy of state actors – that is, the ability to freely take decisions and actions in an interdependent world without being subject to foreign interference[1].

Several in Europe recognized early the radical challenges posed by adoption of emerging technologies by groups or countries trying to undermine or threaten the European Union, its citizen or its way of life, and their ability to have asymmetrical and highly destabilizing impact. It is critical to raise awareness about it at the highest levels of political leadership and throughout EU and national administrations and engage into highly innovative

approaches to ensure that Europe is both well prepared and increasingly anticipating future emerging threats.

In a world characterized by a high level of global economic interdependence and by the importance of scale, preventing these emerging threats can only be achieved at the European level for the countries of the old continent. European strategic autonomy in critical technologies refers to the ability of European actors to own a degree of control over strategic technologies, i.e. technologies playing – or about to play – a critical role in the functioning and resilience of our economies and societies. This also includes technologies that may have a significant impact on our political models, institutions and values. "Owning a degree of control" does not automatically imply that Europe should replicate and develop a whole industry for each of these technologies. Nor should strategic autonomy in critical technologies be understood in absolute terms. It should rather be understood as a flexible concept, as a capability that actors can and must extend as far as they can to increase their freedom of decision and action.

European strategic autonomy in critical technologies starts with identifying them in the first place. The following selection of three technological categories on which Europe should focus its efforts is proposed: critical infrastructures, strategic technological sectors, and lastly selected key technological bricks ("pillars"), without which a sufficient level of control over infrastructures and technological sectors could not be achieved[2].

1. L. Poirier, *Essais sur la strat gie th orique*, Paris, Fondation pour les tudes de d fense nationale, 1982.
2. A. Loesekrug-Pietri, "Technology Strategies in China and the US, and the Challenges for European Companies", Ifri 2020

Critical infrastructures

The first fundamental pillar for strategic autonomy is the control, protection and strengthening of our critical technological infrastructures.

Submarine cables*:* Submarine cables use fiber-optic technology, whereby information is encoded in waves of light transmitted by lasers across thin glass.

Carrying more than 90% of international communications traffic and, as of 2017, transporting $10trn of financial transfers every day,[3] submarine cables represent a critical information and communication infrastructure. Any damage to these cables has major consequences for telecommunications and therefore for the economy of countries affected by a breakdown. Non-state actors control over those cables is growing strongly (Google, Facebook).

5G & 6G networks: The shift of cellular communication networks from the 4th to the 5th and then 6th generation (5G and 6G) of cellular network standards will have a major impact on our societies. For 5G alone, it is estimated that it will contribute to roughly 5.3% of gross world product growth over the next 15 years[4] and reduce energy consumption across industrial sectors by 15%.[5]

The 5G and 6G networks will be a game changer for the competitiveness of European industries, but will also play a critical role in healthcare, energy management and the military. Their disruptive character makes them a strategic asset that Europe cannot afford not to control.

Satellites*:* The multiplication of devices using satellite positioning systems such as GPS or Galileo, the development of space imagery services for defence and industry, and the vital role of telecommunications are increasing our dependence on satellites.

Their protection is thus of strategic importance. Europe is facing two main security challenges related to satellites. The first relates to protecting them from the growing risks of collision with

space debris. The second relates to potential crisis situations in space. By successfully conducting an anti-satellite missile test on 27 March 2019, India became the fourth country capable of destroying an enemy satellite, after the US, Russia and China.[6] Other coercive actions that could be conducted in space include blinding or obscuring the sensors of an observation satellite, jamming or intercepting a communication satellite, using a space maintenance device manoeuvring to damage equipment, or blinding it from the ground with a laser.

3. Wayne Nielsen et al., "Submarine Telecoms Industry Report, 7th Edition", Submarine Telecoms Forum, 2019. https://subtelforum.com/products/submarine-telecoms-industry-report/.
4. "Mobile Industry Generates $565 Billion in Additional Global GDP by unlocking the Right 5G Spectrum: GSMA Study", GSPA website, released on 12 December 2018, consulted on 9 September 2020, www.gsma.com/newsroom/press- release/mobile-industry-could-generate-565-billion-in-additional-global-gdp/.

5. Börje Ekholm, "3 ways to boost innovation in the 5G digital economy", World Economic Forum website, released on 15 January 2020, consulted on 9 September 2020. www.weforum.org/agenda/2020/01/3-ways-to-boost-innovation-in-the- 5g-enabled-digital-economy/.
6. Ashley J. Tellis, "India's ASAT Test: An Incomplete Success", Carnegie Endowment for International Peace website, released on 15 April 2019, consulted on 11 September 2019. https://carnegieendowment.org/2019/04/15/india-s-asat-test- incomplete-success-pub-78884. restricted circulation Andre Loesekrug-Pietri, JEDI 2

Data centres & cloud computing*:* The amount of data generated by human activity grows at an ever-increasing rate. The International Data Corporation (IDC) estimates that the global volume of data, generated by both individuals and companies, will grow from 59 zettabytes (ZB, equivalent to 1021 bytes) in 2020 to 175 ZB by 2025.[7]

For now, 90% of the data generated globally is stored and managed in data centers, with the remaining 10% stored in objects such as smartphones and personal computers. While the growth of the Internet of Things and of edge computing will decrease the importance of centralized data centers.[8] One issue of particular importance for European strategic autonomy is their location, which determines the legal regime that applies to these data – and thus our degree of control over them.

High Performance Computing*:* Increasingly needed to harness big data and facilitate scientific discoveries that need large computational efforts, such as cryptography, materials science, artificial intelligence technologies and climate modelling, supercomputers can be considered as a strategic resource for research performances and competitiveness.

Critical energy grids: Energy grids are critical for the daily functioning and resilience of our societies. As the 2015 hacking of the Ukrainian power distribution grid highlighted, a main concern about this type of infrastructure has been the cybersecurity threats attached to the increasing digitalization of European energy systems.

Strategic technological sectors

Technologies are evolving at an ever-faster pace. Identifying the main sectors where disruption and technological acceleration are most likely to occur, and that have major societal, economic and strategic impact, is critical.

Artificial intelligence (AI) systems: AI systems,[9] especially deep learning, are undoubtedly the technological repertoire that has recorded the most substantial advances in recent years, mainly thanks to the increase in data and computing capacities, and the improvement of algorithmic and learning techniques.

Due to their consequences and pervasiveness, AI systems and their related technologies are critical for the strategic autonomy of Europe. They have met the conditions for a qualitative leap in many areas of human activity: by 2030, AI-powered technologies could, for instance, increase

labour productivity by an average of 30% compared with 2015[10] and contribute $15.700trn to the global economy.[11]

7. David Reinsel, John Gantz and John Rydning, "Worldwide Global DataSphere Forecast, 2020–2024: The COVID-19 Data Bump and the Future of Data Growth", *The International Data Corporation*, April 2020.
8. IRDS, "International Roadmap for Devices and Systems – Systems and Architecture", 2020 edition, p.3-4, https://irds.ieee.org/editions/2020.

9. Artificial intelligence systems are defined by the EU panel of experts on AI as "software – and possibly also hardware systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal. AI systems can either use symbolic rules or learn a numeric model, and they can also adapt their behaviour by analysing how the environment is affected by their previous actions". Using the classification of Goodfellow et al., there ar e four main types of AI systems: Rule-based systems, Machine Learning systems, Representation learning systems and Deep learning systems.

For more information see: EU Commission's High-Level Expert Group on Artificial Intelligence, "A definition of AI: Main capabilities and scientific disciplines", made public on 8 April 2019, consulted on 7 July 2020, p.6, https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=56341
and Ian Goodfellow, Yoshua Bengio and Aaron Courville, Deep Learning (The MIT Press, USA, 2016), p.2-5.

10. James Manyika et al., "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages", *McKinsey Global Institute report*, November 2017. www.mckinsey.com/global-themes/future-of-organizations-and- work/what-the-future-of-work-will-mean-for-jobs-skills-and-wages.

11. "The Mobile Economy 2019", *GSMA Intelligence Report*, 2019, p.43.
www.gsmaintelligence.com/research/?file=b9a6e6202ee1d5f787cfebb95d3639c5&download.

Information and communication platforms: Information and communication platforms, and more specifically social networks, have fundamentally transformed our ways of interacting with others and of informing ourselves, as well as our consumer behaviour. A 2019 survey conducted by Eurobarometer in 34 countries – including the 28 EU member states – indicated that 64% of Europeans were using social networks once a week, and 48% using them every day or almost every day. This number rose to 87% for the 15–24 age group, suggesting that the importance of these communication platforms will rise in the near future.[12]

As highlighted by the Cambridge Analytica affair, the impact of these platforms on citizens' perceptions, formation of public opinion and on our democratic life should not be underestimated.

Face recognition and contact-tracing systems*:* While they inspire with good reasons anxiety among European populations, surveillance technologies may also be beneficial in our societies. These benefits will not be restricted to law enforcement but also spread to other sectors, such as healthcare. Contact-tracing applications are considered as having played an important role in limiting the Covid-19 epidemic in South Korea.[13] Face recognition can be used to track a patient's use of medication, support pain management procedures, detect genetic diseases and support impaired individuals.

State actors have expressed growing interest in these technologies. The AI Surveillance Index developed by the Carnegie Endowment for International Peace identifies at least sixty- four countries that are incorporating facial-recognition systems in their AI surveillance programs, the majority of them being advanced democracies, including seven European member states.[14]

Quantum technologies*:* Quantum technologies will revolutionize our way of performing information computing activities, currently based on the binary logic of Boolean algebra. The quantic paradigm is expected to carry out, on an exponential basis, much more efficient algorithms for solving important problem classes,[15] to enable the development of very accurate sensors, and, with quantum cryptography, to improve the security of our communications.[16]

12 . "Media use in the European Union", Standard Eurobarometer 92, survey requested and coordinated by the European Commission's Directorate-General for Communications, Autumn 2019, p.6 and 21. https://op.europa.eu/en/publication-detail/-/publication/c2fb9fad-db78-11ea-adf7-01aa75ed71a1/language-en/format-PDF/source-164536003

13. Heesu Lee, "These Elite Contact Tracers Show the World How to Beat Covid-19", *Bloomberg* website, last updated on 27 July 2020, consulted on 7 September 2020. www.bloomberg.com/news/articles/2020-07-25/these-elite-contact- tracers-show-the-world-how-to-beat-covid-19

14. "AI Global Surveillance Technology", Carnegie Endowment for International Peace website, consulted on 7 September 2020, https://carnegieendowment.org/publications/interactive/aI-surveillance, and Steven Feldstein, "The Global Expansion of AI Surveillance", Carnegie Endowment for International Peace paper, September 2019. https://carnegieendowment.org/2019/09/17/global-expansion-of-ai-surveillance-pub-79847.

15. IRDS, "International Roadmap for Devices and Systems – Executive Summary", 2018 edition, p.16. https://irds.ieee.org/editions/2018.
16. "Science & Technology Trends 2020-2040 – Exploring the S&T Edge", *NATO Science & Technology Organization report*, 2020, p.19.

Genomics technologies: "Living technologies" may have the greatest impact on our century. Gene-editing technologies such as CRISPR/Cas9 -,recently celebrated by the Nobel Prize - and gene drives are particularly powerful. These tools, separately, can dramatically modify a gene pool, including genes responsible for malformations and serious diseases.[17] RNA messengers have been massively highlighted by the Covid-19 pandemic and may disrupt the way and speed with which we develop new vaccines.[18]

Genomics technologies will significantly change our health-management disease diagnosis and treatment. Their high disruptive potential and the bioethical questions arising from their use makes them of strategic interest for Europe and its populations.

Clean energy: One of the most pressing challenges faced by our societies today is to limit global warming. To achieve this goal, the production, transportation, distribution and use of clean energies – that is, energies that do not emit any greenhouse gas (GHG) when in use and that were produced through non-polluting methods – will be absolutely critical. Beyond their immediate interest for de-carbonization, clean energies can also be a strategic asset, an opportunity to increase European energy autonomy.

Technological pillars

Not all technologies have the same importance. In order to remain technologically sovereign, it will need to master the most critical ones, those which are at the core of several sectors and with the biggest strategic and economic impact. Focus and significant investments will be required.

<10 nm semiconductors: Semiconductor-based devices are *the* building components of our information-processing systems. They are used everywhere, from high-performance computing systems, connected devices, cars, smartphones, to the infrastructure of our communication systems.

AI accelerators*:* One of the essential technological pillars fuelling AI development is AI specific computing hardware (called AI accelerators). The last decade has seen the rise of these devices, especially Graphics Processing Units (GPUs) and Application Specific Integrated Circuits (ASICs) such as Google's Tensor Processing Unit (TPUs).[19]

17. Xu Xun, "We are witnessing a revolution in genomics – and it's only just begun", World Economic Forum website, released on 24 June 2019, consulted on 7 September 2020. www.weforum.org/agenda/2019/06/today-you-can-have-your- genome-sequenced-at-the-supermarket/.
18. See for example Willy Shih, "Could COVID-19 Spur a Revolution in Vaccine Development?", *Forbes* website, released on 16 February 2020, consulted on 11 September 2020. www.forbes.com/sites/willyshih/2020/02/16/could-the-covid-19- spur-a-revolution-in-vaccine-development/#5f30b3b07c8c.

19. IRDS, "International Roadmap for Devices and Systems – Application Benchmarking", 2020 edition, p.10, and Li Du and Yuan Du, "Hardware Accelerator Design for Machine Learning", in Machine Learning – Advanced Techniques and Emerging Application, edited by Hamed Fahradi, IntechOpen, UK, 2018. www.intechopen.com/books/machine-learning- advanced-techniques-and-emerging-applications/hardware-accelerator-design-for-machine-learning.

5G antennas: 5G small cells are critical for the effective deployment of the 5G network, constituting the low-powered access point connecting mobile devices to the broader cellular networks. One of the advantages of these small antennas in comparison to 4G macro-cells is that they enable the densification of the radio access network. This leads to increased performance in terms of coverage, capacity and quality of service, especially in dense urban areas.[20]

Natural-language processing: Natural language processing (NLP) based on AI refers to the set of tools enabling information-processing systems such as computers to automatically recognize, understand, interpret and alter human language. This has enormous implications in terms of development of autonomous systems and decision-making, be it in healthcare, in industry, in energy or in the defence sector. Through its ability to automatically extract information or to recognize what is expressed in a comment or sentence, NLP will constitute a strategic shift in the ability of actors to take informed, real-time decisions and understand situations.[21]

AI-powered cybersecurity protocols: AI algorithms can greatly benefit the cybersecurity of information and communication networks at four levels: the use of biometric log-ins instead of passwords; earlier and faster detection of cyberthreats and malicious activities; continuous updates on the evolution of threats through monitoring and analyzing cyberspace; strengthening cybersecurity capabilities by adapting the authentication framework and blocking access to a user behaving suspiciously.[22]

Next-generation batteries and green hydrogen-related technologies: Among clean energy options, electricity and hydrogen produced by renewable sources of energy are considered by many observers as among the best solutions to decarbonize our societies.

In terms of storage, both batteries and hydrogen offer solutions to store, transport and even use the energy produced by renewable sources. Indeed, one of the shortcomings of wind and solar energy is that they are intermittent, making energy storage solutions – and, thus, hydrogen and batteries – necessary for their adoption. In terms of transport and end-uses, both electric batteries and green hydrogen – that is, hydrogen produced by electrolysis powered by renewables – are considered as important and complementary solutions to decarbonize hard-to-abate sectors. With regard to green hydrogen and its derivatives (ammoniac or synthetic fuels), they are in addition considered as a powerful alternative to fossil fuels in several industries, as well as in the heavy aerial, maritime and terrestrial transportation sectors.[23]

20. "Setting the scene for 5G: opportunities and challenges", *International Telecommunications Union Report*, 2018, p.10. www.itu.int/pub/D-PREF-BB.5G_01-2018.

21. William D. Eggers, Neha Malik, Matt Gracie, "Using AI to unleash the power of unstructured government data", *Deloitte Insights*, released on 16 January 2019, consulted on 10 September 2020. www2.deloitte.com/us/en/insights/focus/cognitive-technologies/natural-language-processing-examples-in-government- data.html.

22. Naveen Joshi, "Can AI Become Our New Cybersecurity Sheriff?", *Forbes* website, released on 4 February 2019, consulted on 10 September 2020.
23. See for instance International Energy Agency, "The Future of Hydrogen – Seizing Today's Opportunities" report prepared for the G20, Japan (June 2019), available at https://www.iea.org/reports/the-future-of-hydrogen, and Cédric Philibert, "Perspectives on a Hydrogen Strategy for the European Union", *Etudes de l'Ifri*, Ifri Center for Energy & Climate, April 2020. www.ifri.org/sites/default/files/atoms/files/philibert_hydrogen_strategy_2020.pdf.

Conclusion

The concept of what is a "critical technology" is pervasive, covering technologies used in sectors ranging from healthcare through industry to the decarbonization of our societies. It is also a concept in constant evolution; the technological sector is evolving at an ever-faster pace, generating new ideas and paradigms that we could not have imagined.

Europe has a great number of assets and a true potential in several strategic technologies discussed above: it has a very strong research and development activity in the quantum and green energy technological sectors, it is the home of 5G world industry leaders, and the continent that is the most advanced in the realm of robotics and is a space world power. But despite these advantages, it remains significantly dependent from the United States and increasingly from China for most of its critical digital infrastructures, be it data centres, cloud computing, information and communication platforms, but also for supercomputers, AI and autonomous systems, synthetic biology or submarine cables.

To tap into its potential, protect its assets, and gain a true geopolitical influence, Europe needs a significant political push - and a revolution in mindset. Progress cannot be achieved without the adoption of a strategic perspective on the technological sector. Acknowledging the urgency of the situation, the new Commission made several steps in this direction. Despite these first good efforts, these efforts remain too little or too slow – in relative terms to the "warp speed" with which technology evolves.

The true challenge remains the need to achieve significant progress to reach scale (through the completion of single digital markets in the technology and digital space), inefficient funding mechanisms that rely sometimes more on "spray and pray" than on focused and result-driven approaches, coupled with an overall absence of independent impact assessments of policies, preventing agility and improvements. Lack of cohesion and cooperation among Member States (as highlighted in the AI, quantum or hydrogen space where most member states have their own strategy), hinders the capacity to anticipate while there is an absolute imperative to focus on the *next big things*, on the strategic issues of the near- and medium-term future rather than on the battles of the past. European-based leading- edge technologies cannot be developed without the scale of the Single Market. And a European strategic autonomy cannot be achieved without strong capabilities in leading-edge technologies that will shape the future.

Innovation is moving fast, with the key success factors being foresight, agility and speed. So must be the EU if it wants to keep up in the technological race of the 21st century.

(*This paper has been reproduced in its entirety at the request of the speaker)*

MEP INTERVENTIONS

Vlad-Marius BOTOȘ MEP (Renew Europe, Romania)
Internal Market Committee
Opinion Shadow Rapporteur on New Industrial Strategy for Europe
Opinion Rapporteur on the Strategic Innovation Agenda of the European Institute of Innovation and Technology (EIT) 2021-2027: Boosting the Innovation Talent and Capacity of Europe

Today you are asking me to talk about the way the European Union can become the world leader in disruptive technologies.

This is a very complicated matter, because we have to face the truth first.

The European Union is not the leader at this moment. The United States of America is the world leader in disruptive technologies because of decades of tradition in private investments in new areas. We might have specialists in new technologies, but we do not have a European Silicon Valley, for instance.

China, with massive states investments, with a directed economy is taking the second place and the European Union is coming only third.

It will be hard to beat USA and China in this game, but we have proofs that it can be done.

I will explain right now. Romania, for instance, has one of the fastest broadband internet connections in the world, 5th, with 151,87 Megabits per second. USA and China are not even close and a lot of the European countries are far behind. The mobile connection is different and I think this is where we can find the real problem. In the big towns in Romania the internet connection on the mobile is very good, but in the countryside there is a different story. We can meet the same situation in a lot of the European countries.

The fragmentation of the market, the huge differences in the infrastructure, are the main reasons for not having the European Union on the top, but individual countries from the Union.

This will be the same with other disruptive technologies. If we are not making the same laws in all the European Union, if we do not make sure that we really have a Single Market and continue with different legislation in each country, we will definitely have no chance to compete with USA and China.

So the first and the most important thing is to set aside our differences and to work together in creating a big market for all the actors in this domain. Here I do not mean only factories, but services too and education. It should be very easy to cooperate, to move from one country to the other, to offer your services and your expertise all over the European Union.

The second part of the solution, in my opinion, should be the encouraging of the investments in the disruptive technologies. We should find mechanisms to enhance private investments in this sector. We can take the example of Romania in the case of IT, or the example of Estonia in innovation.

We can find solutions if we enhance our cooperation with the sectors, if we listen to what they need and make sure that they get the same conditions in the whole Union meaning the same laws, the same definitions, the same regulations.

I am also thinking about electric cars and the way everybody talks about Tesla, but we have right here in the Union better batteries, electric cars with better autonomy. We have the potential to be number one in the disruptive technologies, we just need to have the vision.

Ismail ERTUG MEP (S&D Germany),
Transport Committee: Opinion Shadow Rapporteur on Framework of Ethical Aspects of Artificial Intelligence, Robotics and Related Technologies;
Substitute: Industry, Research & Energy Committee
Delegation for relations with China

- These are interesting topics and I share some views from André Loesekrug-Pietri

- But we are not so bad, at least when it comes to the industrial investments and battery industries. This is not the topic of today
- €25 bn. were already invested in Europe in 2020 that is twice as much as in China
- It is right that we have to be better and faster in specific areas as already mentioned by Mr Loesekrug-Pietri and Mr Botos

- I think that clean hydrogen will be one of the key technologies when it comes to decarbonisation.
- Only clean hydrogen is, in the long run, really sustainable and climate neutral
- When we look at the industry sector, stakeholder's opinions are merely divided. Some have positive meanings whereas some remain negative.
- I firmly believe on the necessity of all those new technologies for the future. The European Union is big, so is the energy demand in the EU. I guess we have to support and finance this kind of technologies.
- We will need a lot of it first, for our industry (not to forget), I do not want to omit that our steel industry, for example, is in a global competition. We need competitive pricing to the others when it comes to energy.
- So, I do not want to reiterate that Chinese prices are really low because we know why. They have full support from the state; especially the loans and all grants are financed by the state.
- However, European industries have to compete with them. To do so, we need clean hydrogen for the steel industry in particular.
- Regarding the mobility sector, I would say trucks and airplanes will play the number one role, at least when it comes to the direct use of hydrogen.
- We have followed it a few weeks ago, when Airbus has announced that they want to invest in hydrogen. That was a good starting point, but we all know that we have to invest more in research and development.

- We have to create an ecosystem within the European Union when it comes to this kind of technologies. We need the infrastructure. All these issues are well known
- However, clean hydrogen will also be the basis for the majority of the so-called electric fuel.
- This is predominantly important for aviation, as the lifespan of a plane is far longer than the one for the car. So, we will need synthetic kerosene to make flying less harmful for the planet. This, in the long run should be our main initiative
- When I talk about initiatives, we all know that the European Commission is already announcing the 50 or 55 pieces of legislation, it will come forward with in 2021.
- It is very exciting. It does mean a lot of activity around mobility, industry with the ENVI Colleagues within the parliament.
- We want to work on this initiative as soon as possible

- I also believe that we can produce a lot of hydrogen in Europe, which needs huge investment.
- But, the vast amount of it will need to be produced in countries where the production of renewable is as effective as possible.
- For instance, in South America, also in a large part of Africa or Ukraine to some extent.
- We have hot discussion on this specific topic in some Member States, for instance in Germany, even within my party: The Social Democrats.
- In any case, we need both. We need high amount of investments within the European Union and we have to find out how to cooperate with those regions in our neighbourhood that are politically stable and share a certain level of our values at the same time.

- I am optimistic when it comes to the 2.4-Gigawatt project by the European Commission. It will not be possible in the next five years, but now from 2020 to 2030 within these 10 years window, we have to make all the strategic investments for the future, for the long run.

- Therefore, I am not so pessimistic, but I know where the constraints and the limitations are.

- I always say that the biggest problem of the European Union is the Member States and after more than eleven years experience in the European Parliament I can approve that, this is true.

Dragoș PÎSLARU MEP (Renew Europe, Romania)
Economic & Monetary Affairs Committee
Rapporteur on Establishing a Recovery & Resilience Facility; Employment Committee
Opinion Rapporteur on a Framework of Ethical Aspects of Artificial Intelligence, Robotics and Related Technologies; Opinion Rapporteur on the InvestEU Programme;
Delegation for Relations with the United States

- We share the vision that disruptive innovation should lead us to a better society. We are already making the future, working to build the future together.
- I am a member of multiple Committees and Co-Rapporteur on The Recovery & Resilience Facility, where we had this historical moment of solidarity to put €750 billion for the future and for recovering from the pandemic.
- We do have the will and I think Europe, after a period of malaise and the Brexit, is actually coming together
- We are actually more united in designing, and shaping the future than in the past.

- We had the Green Deal which was decided even before the pandemic. And the Green Deal is about economics, a competitiveness and supremacy of Europe in a foreseeable trade bloc.
- It is not only about saving the forest, it is actually about decarbonisation, new materials, solutions to become more competitive and less dependent on raw materials and on cheap labour
- It is a very important part that we are achieving
- If you take the Green Deal and add the Digital Transformation that is going to happen, you will see again that we are starting, indeed with some delays, in comparison with some of the other blocs, but we are starting to talk seriously about data economy, about AI, about digital being embedded in society.
- Regarding this discussion, if you were in the Parliament you could see how there is this amazing domino effect.
- Butterfly effects too, starting with first we need a strategy and right now everything is actually constructed on that.

- I am in four Committee and things are happening in Committees.

- In ITRE, where I am a member we have this New Industrial Policy of the EU.
- We have this concept of Strategic Autonomy or fourteen (?) ecosystems.
- We have this important view that we need to build the value chains,
- We need to achieve the single market, because that is going taking down the transaction costs and everything.
- We are moving in the right direction with the SMEs Strategy as well, and with the Hydrogen strategy as well. So, we are actually in the right direction.

- As for the Employment and Social Affairs Committee, we are talking about Skills.
- This becomes a vital issue, with a new Skills Agenda.
- We talk seriously, right now about vocational, education training and bringing it into the mainstream. This is in the centre of our attention. We are moving forward in that direction.

- In the ECON Committee; we have discussions on the Digital Ecnomy – with 6 Pillars: including green, competitive, social, children and youth.

- In the FISC Committee, we are talking about the OCDE approach that Europe wants to take onboard in terms of taxing the activity where it happens and obviously that will have a large impact on GAFA adding up to the competition policy that Margrethe Vestager is putting forward.

- We are moving together in different Committees and there are a lot of consultations with stakeholders
- Indeed, they might be differences in terms of speed, but we are right now building seriously a future, which has the multifaceted views, that is actually going in the right direction.
- It is not perfect it's true, there are a lot of sterile discussions as well, but in the Parliament right now we have majorities that are unprecedented on topics. We have seen the resolution on Green Deal, we have seen the number of pro-votes that we have on Digital and all the other topics.
- These things broad together we actually created this will and are working together.
- I am really optimistic, I understand the constraints but I feel that right now Europe is in a very good place.
- We have learned some lessons during the pandemic, it actually helped us embed the digital in our daily life as never before and I think that actually we are getting there.

- We in the Parliament are actually more or less trying to lead in this practical process and obviously I will be more than grateful to hear the industry view in this debate.

Q&A and DISCUSSION WITH MANUFACTURERS

Discussion points included those raised by: Benedikt Kuttenkeuler, Siemens; Paolo Falcioni, APPLiA; Philip Cole, WindEurope; Karl Pihl, Ericsson; Oliver Blank, ZVEI; René Schroeder, Eurobat,; Malte Lohan, Orgalim; and Jerome Bandry, CEMA.

CONCLUDING REMARKS

Antony Fell, EUROPEAN FORUM FOR MANUFACTURING, Secretary General

We have had a very stimulating and productive evening. I would like to thank Ondřej Kovaríc MEP for his outstanding chairmanship, André Loesekrug-Pietri, Director, JEDI – The Joint European Disruptive Initiative, the MEPs, and European Manufacturing Representatives for their valuable contributions.

The next EFM meeting will focus on 'Advanced and Smart Manufacturing – Digitalisation as an Enabler for Industry Transformation' on 27 January 2021.

I now formally conclude this virtual meeting.