Call for Papers "The European Green Deal: moving to action

Opportunities and challenges for the European citizens"

The European Green Deal as the key factor for the industrial transition in Europe

Author: Asier AREITIO

Brussels, November 2021

© Institute of European Democrats, 2021

Rue Montoyer 25
1000 Brussels
Belgium

Web: www.iedonline.eu

This Research Paper was elaborated on the basis of independent research. The opinions expressed here are those of the Contractor and do not represent the point of view of the Institute of European Democrats.

With the financial support of the European Parliament

EXECUTIVE SUMMARY

This paper wants to analyze how green innovation can try to reach some of the objectives set by the European Green Deal in two of the main industrial sectors of the European Union, agro-alimentary and transport. Furthermore, this paper shows how the EU cannot act as the unique green actor in the geostrategic world, and analyses how trade deals can be one of the solutions to influence different international actors to adopt these future looking green policies. Concrete policies are proposed for each of the specific topics, and transversal more general policies are proposed at the end of the paper.

Social Media summary

Green innovation, support of industrial transformation and trade negotiation are the key element this paper analyses to fulfil the European Industrial transition to the European Green Deal.

Keywords

#Greendeal #Hydrogen #Agriculture #transformation #train #trade #innovation

Shortbio

Asier Areitio, current president of the YDE, has a bachelor in business administration and a bachelor in laws on the UPV/EHU. He is committed to the European politics and has taken part in many movements in favour of the integration and federalism of the EU. Nowadays he works in a public-private hedge fund focused on the investment for the creation of technological or innovative start ups on the territory of Biscay.

Table of Contents

Table of Figures

Table of acronyms

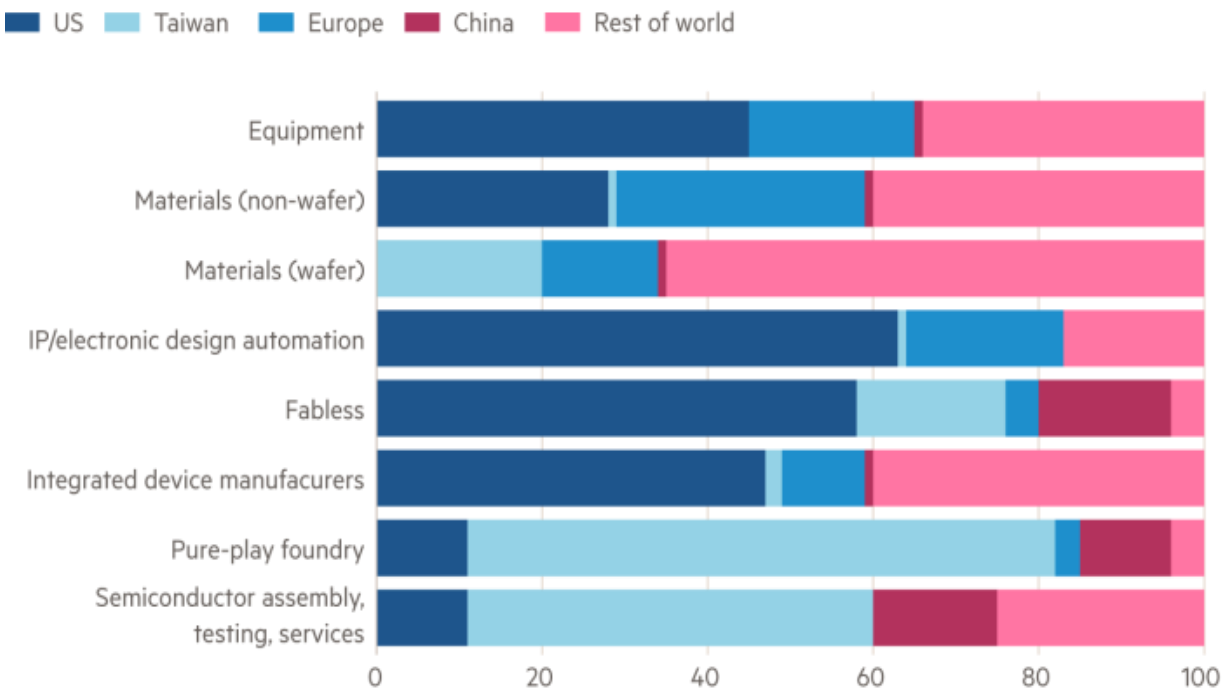
- EU-European Union
- SDG-Social Development Goals
- UN-United Nations
- EC-European Comission

Introduction

The approval of the European Green Deal, with his maximum goal of becoming the European Union (EU) on a climate neutral territory by 2050, has shaken the status quo of the main European industries. The demands made by the European green deal are shown as a "twin ecological and digital transition" that will require new technologies, with investment and innovation to match, creating new products, services, markets and business models. This transition will shape new types of jobs that do not yet exist which need skills that we do not yet have. And they will entail a shift from linear production to a circular economy (European Commission, 2020)

The approval of this deal has been conditioned and even put in doubt due to the COVID-19 crisis. This situation has shown how geostrategic operations lead during decades from countries out of the EU has ended with the production and strategic autonomy of determined industrial components (semiconductors, batteries, raw materials etc.) breaking the stock, and as a matter of fact, the production capability in certain European main industries, as the automotive or the steel manufacturer.

Figure 1. Sales, based on company HQs, (2018) (%)



Source: McKinsey for the Financial Times, 2021

Assuming the need of creating an industrial model that can lead the ecological transition and digitalization at a global scenario, the European Institutions and the state and regional governments should implement new policies and a coordinated structural plan. This plan should be cantered on competition, free markets, world top level research and technology, and a strong single market that lowers obstacles and eliminates red tape while not being naive in the face of

Unfair competition, we, as Europeans must resist the simplistic temptations that come with protectionism or market distortions.

The aim of this paper is to analyze some of the structural problems that the main European classic industries will face, and to propose policies that can tackle those situations. With the objectives menctioned on the previous paragrapghs, this paper will use two point of views to treat the topic. On the first hand, the Disruptive green innovation as a factor to boost the new green production projects analysing different economic areas such as the alimentary or the transport industry, and on the other hand the use of the Trade legislation as a tool to influence foreign countries and actors. Finally, this paper will resume the political proposals made along the paper and add 3 global initiatives that could influence all of the economic and political sectors of the EU.

Disruptive green innovation

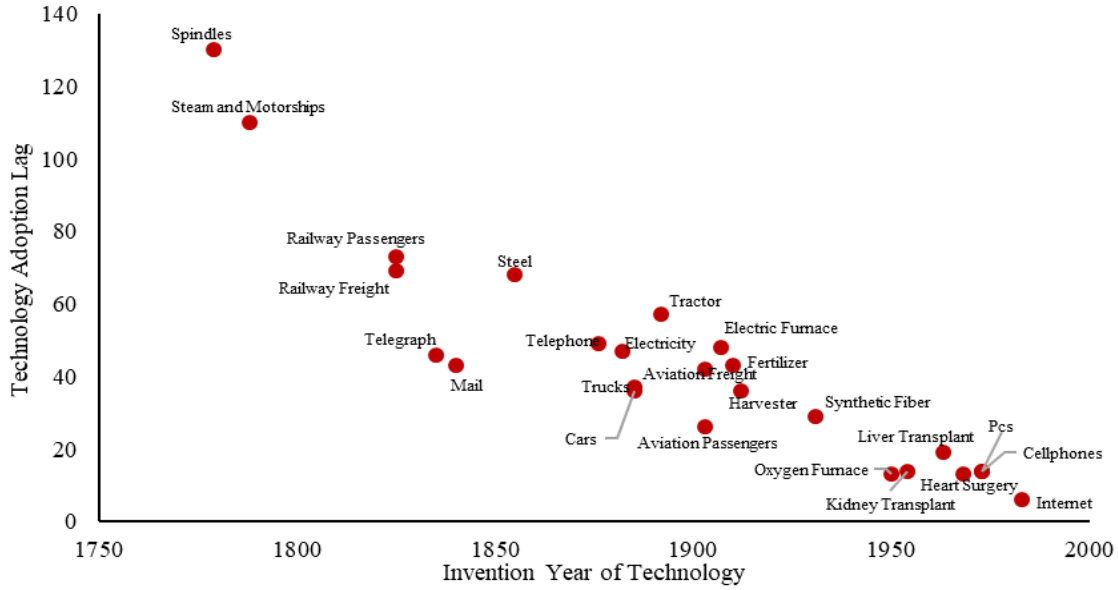
The goals set by the European Green Deal ask for new production models on which carbon emissions, pollution rates and green impact equal almost zero by 2020. These conditions can only be reached by new production models led by disruptive technological changes (Interguvernamental Group of Experts on Climate Change, 1996) that can change the whole production model and strategies of the main European Industries.

The working frame that can allow this disruptive change to occur must be based on working models, technologies and resources that are yet unknown. In that sense, investigation and promotion of new Business Models will be much needed.

As a matter of fact, institutions (European, State level institutions and local authorities) play a significant role, being the main support for disruptive green innovation; by creating the conditions for innovative, green, European companies to flourish and on the other hand by promoting the transition of classic European Industry to greener and more efficient ways of production, or new productions, which will require public aid in order to avoid the so called “green investment gap” (Clements, Eyraud, & Wane, 2013).

Finally, it is worth to mention that current technological advances and disruptive innovations are adopted and integrated in such a short period of time (observe the figure No.2) that these needed disruptions would be assumed by industries and citizens in the period the European Green Deal establishes, even having enough time to visualize transitions and changes among what nowadays would be considered disruptive.

Figure 2. Lag of adoption for new Techonology Invention, years (1750-2000)



Source: Gill, 2020

1. Agro food-tech industry

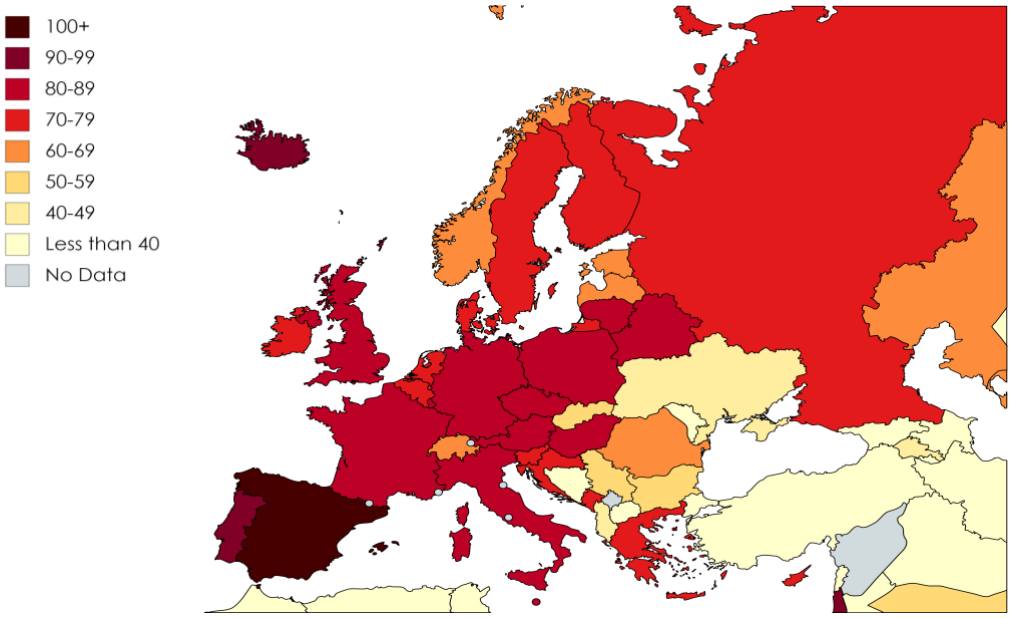
COVID-19 has shown some of the shortcomings of European main industries, but has also shown how some classical industries, which had been forgotten by the main economic future plans, are still essential for the European and worldwide citizens. Among these classical industries it is worth mentioning the agro food industry.

It is indeed one of the few industries that have achieved to maintain the consumption levels previous to the pandemic (Carmona Rubio, 2020). Moreover, first sector is a strategic sector for the European Union for two main reasons:

1. Key factor to sustain the food supply chain among the European Union, mainly in agricultural products which are not easily imported, as meats or dairy products.

   In this sense, the meat market represents a potential industry. On the one hand, we can see (3rd figure) how meat consumption rates are high in the EU, compared to other countries of Europe or Africa. On the other hand, all of the member states of the European Union, except from Malta, are able to self produce their meat consumption and to export part of their production (Bojnec & Fertö, 2014).

Figure 3. Yearly meat consumption per Capita, (2018)



Source: Estatista

2. Protecting and enhancing natural ecosystems (Briamonte, Pergamo, Arru, Furesi, Pulina, & Madau, 2021). Agro production system determines different topics such as, land use, chemical use, antibiotic use, or spices which are planted. On that sense, The European Green Deal has set the following goals for its final term:
    - Using a quarter of the land for organic farming
    - Reducing the use of chemical pesticides by half
    - 50% of reduction in sales of antibiotics for animal breeding
    - 20% reduction in fertilizer use.

Once we have observed and analyzed the impact and relevance of the agro food industry for The European Union and the development of it sustainability programs, it is the objective of this paper to propose the following politics:

1.1 Farm to fork Euro-Region model

The EU´s new Farm to Fork (F2F) strategy is lauded as the biggest step given in the European food policy making. Though the strategy has various defined steps (which are not the topic of this paper), there still is a big unresolved matters of concepts like “food sustainability” or “sustainable food system”. Therefore, many experts point there is a big gap between policy objectives and the legal actions frame the EU, as an institution, can adopt (Schebesta & Candel, 2020).

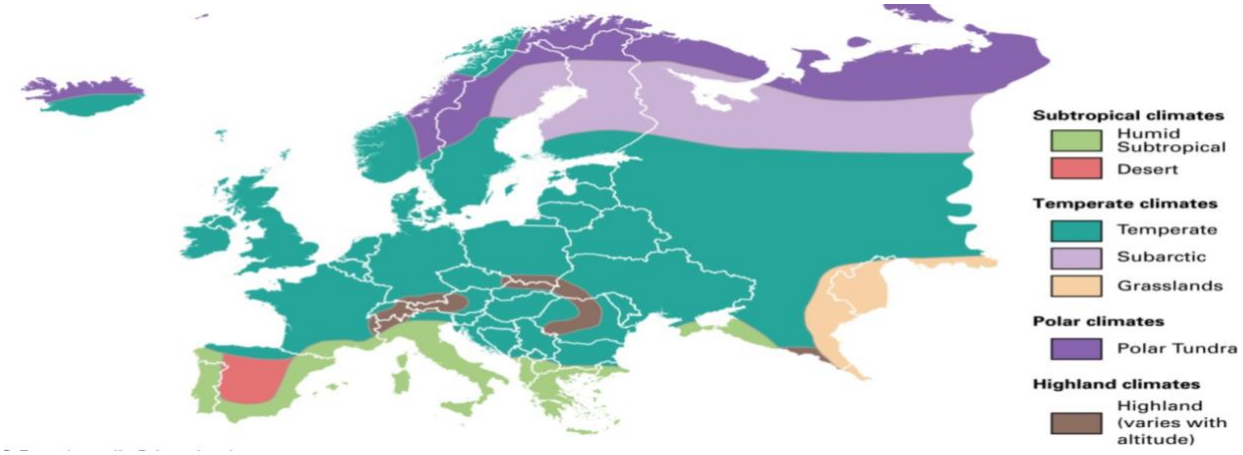
Figure 4. Farm to Fork strategy´s Axes

Source: European Commission

As a matter of fact, implementing a food production/agricultural strategy at an EU level carries two major problems. On the one hand, state level policies still influence food policy, especially regarding topics such as the health controls or border controls; on the other hand, this legal

frame´s does not merge with the climatic areas of the European Union as we can easily observe on Figure 6.

Figure 5. Climate Regions of Europe (2020)



*Source: Britan**n**ica Enci**clopedia***

Therefore and with the objective of tackling the exposed problems, we propose introducing the figure of Euro Regions and cross-border cooperation areas to enable the F2F strategy. These figures would play as safe and fair –trade zones, as local products would be easy and equally consumed on the whole region. In addition, these regions should cooperate on different food related material such as investigation, digitalization and green entrepreneurship.

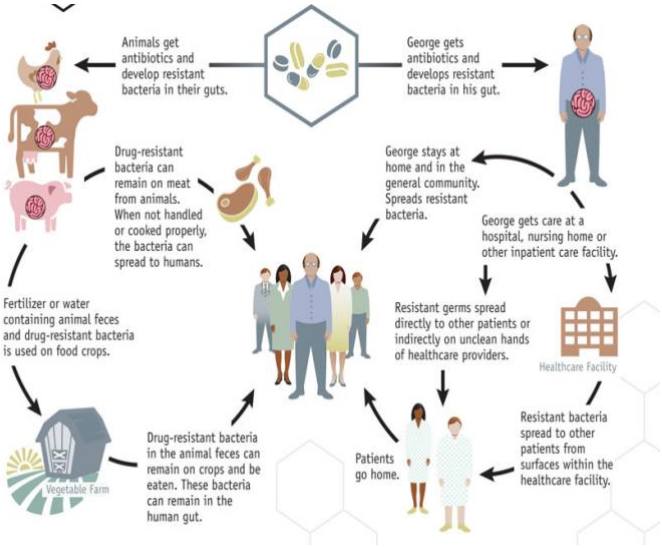
Finally, it is needed to impose a stimulus of local product consumption, bothon price and marketing campaigning. This need, is created by the fact that such a strong regulation as the one already implemented by the European Green Deal, and this policy proposal, would surely create (if not stimulated) an augment of external agricultural products consumption, due to their lower regulations and standards. (Beckman, Maros, Jelliffe, Baquedano, & Scott, 2020). This economic stimulus could be managed in a three ways strategy, tax lowering for local producers, marketing campaigning and consumer rewards for local product consumers.

1.2 Common vet antibiotic policy

The European Union has the competence to regulate part of the veterinary sector of the EU. As a consequence of this ruling we can observe the existence of the veterinarian European passport or the European animal prescription form. This last topic is closely related with the agro-food industry.

Antibiotic use in farm animals is one of the main health problems the EU will have to face in the close future. This resistance process is created, long story short, by the consumption of meats coming from animals that have been drugged with antibiotics. This "second hand" antibiotic extended consume produces a drug-resistance to some bacteria that can spread from animals to humans.

Figure 6. Antibiotic resistance process



Source: NFID, 2021

In addition to this personal health issue for European citizens, this extensive use of antibiotics on the agro-alimentary industry demands a big amount of chemical components, with its unavoidable climate and pollution impact.

Therefore, this paper proposes the following policy implementations established by Sweden before entering the European Union. This political phenomenon known as "The Exception" (Larsson, 2021) is based on one of the main European foundational values: the cooperation.

Sweden is nowadays the unique country in the EU that has totally banned the use of antibiotics in the farm animals that are destined for human consumption. This political decision began in the early 1950s, when antibiotics had been a common ingredient in purchased feed, and several farmers worried about the long-term consequences of regular group treatment. Some pioneers started experimenting with excluding routine treatments with antibiotics, paying a higher price for antibiotic-free feed. Through personal contacts, researchers at the Swedish National Veterinary Institute contributed with advice (Larsson, 2021). The engagement was mainly driven by environmental concerns. As one of the pioneering farmers expressed his worries: "What happens with the soil in the long run, when manure from pigs fed with antibiotics is spread out on it[1]?"

Swedish society took conscience on this matter with various publications and experts recommendations and they based the strategy on a two way road. On the one hand, a national investment plan on animal use antibiotic and medicine research, with the goal of obtaining safer and less impactful antibiotics, and on the other hand the compulsory "gradual" reduction of the use of current antibiotics.

This policy could also nowadays be engaged in the EU. The resources granted by the implementation of the European Green Deal, and with the Next Generation EU plan. The policy demands investments in both of the pillars previously mentioned. Even if new drugs represent 'rocket science', and reducing consumption represents simple 'implementation', this second structural change will modify the production chain, and will require public financing to cover the new costs produced by these changes.

Finally it is worth mentioning, that this policy implementation will have to be accompanied by the legislation on trade agreement, in order to maintain free and fair competence among European and Non-European agro sectors, as we will analyse later on in this paper.

2. Transport industry

The European Commission (EC) concerned by the pollution caused by the transport industry globally, has worked on the "Sustainable and Smart Mobility" strategy, with the aim of cutting emissions by 90% thanks to a greener, smarter and more affordable mobility.

These three objectives require transversal policies such as digitalisation, innovation and resilience plans. On the following points, this paper will analyse two of the main points on which institutions are working in order to make the Sustainable and Smart Mobility strategy plan work.

2.1 Hydrogen European plan

Hydrogen has become one of the biggest hopes not only for the EU, but worldwide, as a tackle technique against transport pollution. Hydrogen can be used as feedstock, a fuel or an energy carrier and storage, and has many possible applications across industry, transport, power and

[1] Interview of a farmer in mid-Sweden, 2019-04-25, *apud* Waluszewski, A., Cinti, A. & Perna, A. Antibiotics in pig meat production: restrictions as the odd case and overuse as normality? Experiences from Sweden and Italy. *Humanit Soc Sci Commun* 8, 172 (2021). https://doi.org/10.1057/s41599-021-00852-4

buildings sectors (European Commission, 2020). In addition to this transversality, Hydrogen does not emit CO2 and almost no air pollution is created when used.

Among the different applications that hydrogen has for many of the industries of the European Union, its application on transport can be focused on two different working lines. Hydrogen as a vector for renewable energy storage and hydrogen as a fuel or repurpose of fossil fuels.

These two working ways lead to two different mobility ways, electrified mobility, based on Hydrogen storage batteries and to hydrogen fuel cell mobility. As a matter of fact, this situation, rather than a problem, shows an advantage to the mobility sector (Wilbeforce, 2017). The existence of two different ways of using hydrogen for mobility will expand the offer of 0 emissions mobility, lowering the price of this mobility model, and will create bigger competence among producers and among the investigators of the two different models.

Figure 8. EU Hydrogen Highway (2012)

Source: Hydrogen Cars Now (2012)

Nevertheless, these two strategies are still incipient strategies worldwide and require lots of investment plans on investigation development of the product. This situation represents an opportunity for the European Union for different reasons.

First, as we can see in the Figure 8 on the frame of the use of Hydrogen as fuel, there still is no big net of distributors in the EU; even if this is the region worldwide with more hydrogen charging points (Statista, 2021). Therefore, the European Union has the chance to develop future leader companies on the distribution of Hydrogen worldwide (Manoharan, 2019).

Second, Spain and Portugal represent a territory that can lead the Hydrogen production and become the main suppliers of Hydrogen for the EU (Murray, 2007). This strategic production capability represents a chance to tackle the Energetic dependence of the EU. As a matter of fact, different pioneer programmes have already been developed in the Iberia region as the Energy Intelligence Centre on the Basque Country, the Spanish Hydrogen corridor or the joint Lithium plant for Portugal and Spain.

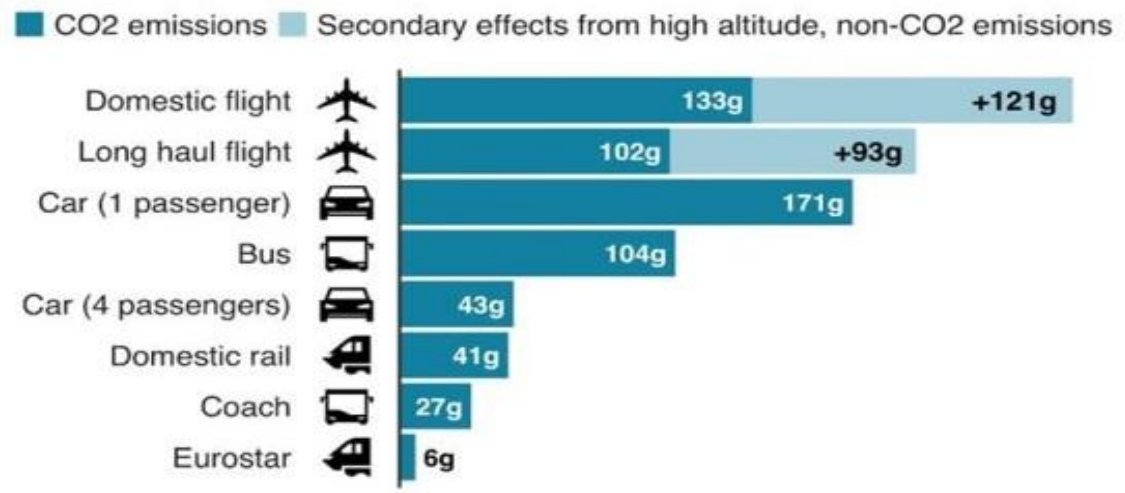
Finally, as previously mentioned, disruptive innovation will be needed to face this unknown situation. In this area specially, there is a long way to run. Therefore, we propose to create European Research centres in those areas closely related to the car manufacturing industry (Northern Italy, German industrial area, France car manufacturer central area, etc.). That centre should be specialized on the research related to hydrogen in the strategy used by the car manufacturers on the area on which they are established.

Out of this production strategy, from the point of view of the consumer, tax cuts should be implemented at a European level. Though European tax harmonization has not arrived yet, there is room to legislate around the Tax to the Added Value and to reduce it to the minimum on those 0 emissions or green emissions cars.

2.3 European high speed railway strategy

It is well known that the most pollutive mobility way, passenger per kilometre is the airplane. On the Figure 9 we can observe how domestic and long haul flights represent the two transport ways with the biggest CO2 emissions.

Figure 9. Emissions from different modes of transport (passenger per KM)



Source: BEIS, 2019

Figure 9. Night train proposal by German Greens
Source: Railtech, 2021

As a matter of fact, the individual use of the car represents the third position of this ranking, and it is the transport way that has the biggest emissions globally in Europe. These two pieces of information lead us to a conclusion; we need a collective way of transport that can connect the European Union, avoiding the emissions of flights. The answer to this question is the Eurostar. This high speed railway is the least pollutant transport and has a capacity to carry 558 passengers. This paper proposes the creation of a European Railway Company and of a European High speed train infrastructure. As a matter of fact, at German Elections (September 2020) the Greens in Germany made a proposal of creating a night train that covers travels to and from the main European cities, with the map we can see in the Figure 10.

Even if this is already a disruptive proposal, this paper defends that this service should be a 24/7 service, not just a night train service.

To conclude, the creation of this European Railway Company, legislation is going to be needed in order to ensure the use of it. As an example, Spain's 2030 recovery plan, previews the ban of Domestic flights, as a measure against the pollution. As a consequence, these flights will have to be, most likely, substituted by high speed trains. This measure, good intentioned, will have no effect if it just applies to Spain. It would have no sense banning a Bilbao-Seville flight of 702 km, but allowing a Bilbao-Paris flight of 723 km. Therefore, this policy should be legislated with a European approach, banning all of EU internal flights of less than 1500 kilometres, as long as you can make that same trip by high-speed train.

External action

The issues and policies previously mentioned are of no use if the European Union is the unique actor globally implementing them. The EU nowadays represents no longer than the third part of what China represents, and the half of what the USA in terms of trade transactions yearle (Statista, 2020)

Therefore, the EU has to influence other global actors with a double objective, tackling the global pollution emissions, and protecting its own industry by demanding same regulation and green standards to the competitors out of the Union.

Since the early 1990s, the EU's trade agreements have included a 'human rights clause' requiring the parties to respect human rights and democratic principles. More recently, beginning with the 2008 EU-Cariforum Economic Partnership Agreement, they have also included 'sustainable development' chapters, which contain obligations to respect labour and environmental standards (Barters, 2013). These kinds of regulations are needed now, more than ever, in order to make the European Green Deal work.

Observing the history of the EU´s different trade deals, we can observe how the European Union has been able to introduce some of its biggest demands onto other political actors. Creativity is obviously needed to introduce different dispositions that can be accepted by those global actors, while fulfilling the interest of the European Union.

The relation between trade and sustainable development is a highly discussed topic of academic debate. Scholars often argue that trade between developing and developed countries leads to the redistribution of environmentally damaging production, being the underdeveloped countries the producers of the environmentally damaging goods, while green washing the developed countries (Foramitt, 2019). As a matter of fact, the inclusion of these kinds of clauses on the trade agreements has been a discussed topic, but they have shown an efficacy that other similar clauses have not shown until nowadays (Sicurelli, 2020).

This paper wants to propose different green dispositions that can be implemented in EU trade agreements, while are not catalyst to green wash different countries of the globe.

- Maximum marginal CO2 emission per unit. This disposition would be based on the CO2 emission that is needed to produce and transport a good. The EU could negotiate how much of CO2 can be produced for each of the items that are part of the concrete trade deal, and to forbid all of the products that do not respect that maximum figure.

- Bann of concrete production techniques on imported goods such as palm oil use or pesticide and antibiotic use.
- Green trade corridors. These corridors would be represented by green transport ways that could be negotiated and used to export and import between the EU and the other side of the trade deal.

Policy recommendations

The policy recommendations in order to move into action on The European Green deal that this paper defends are classified in two kinds. First, the transversal political proposal among which we underline the creation of an European Social Development Goals (SDG) Taxation plan. On the frame of the European Tax harmonization campaigns, this is a chance to implement green taxation norms. This taxation plan should be included in all of the harmonized taxes, including tax cuts and economic benefits related to measurable improvements on the UN´s SDGs. This taxation methods already exist in Europe and we have global references such as the professor Mariana Mazzucatto.

Secondly, the Creation and impulse of sovereign venture capital public funds, specializing Euroregions among different innovative industries. As different examples there could exist the Aquitaine-Basque-Navarre machine tool region, the Benelux financial region, or the Mediterranean innovative tourism region. This sovereign fund should focuse on investment plants related with the goals of the European Green deal, and should play the role of promoters in new start ups and venture builders.

Third, and lastly on the transversal policy recommendations, the European Commission should be forced by European Treaties to include green dispositions to all of the new European Trade Agreements, and supervision of the existing agreements, to adopt them to the European Green Deal standards.

Regarding specific area policies, this paper, on the frame on mobility makes two proposals, First, on individual mobility the Creation of the Iberia hydrogen corridor to ensure the Hydrogen production for the European Union, and to avoid external pressures of producers out of the EU. Second, on collective mobility, the creation of a European Railway company that could operate on free trade on the existing railways, and that could also implement and own new railway infrastructures.

Finally, regarding the food industry, Europe should work on the elaboration of a European Impact plan against the trade of meat infested with animal antibiotics, by a European level common policy and by the supra European trade prohibition of this kind of meats among the EU.

Conclusion

The main conclusion of this paper is that the European Union needs to be innovative and original on its policy making regarding the European Green Deal. This new situation and the existence of new challengesdemand policies that have yet not been implemented by European institutions.

In addition, the situation to be tackled will require new technologies and the digitalization of some of the most traditional sectors of the European economy. In that sense, funds must be destined to the investigation of new technologies, and new working models will have to be created. On that sense, the clusterization of some of the European supranational regions, and the creation of investigation hubs on different areas (mobility, hydrogen, agriculture, fishery, etc.) represent a chance for this problem.

Nevertheless, the EU has to play a significant geopolitical role in the worldwide geopolitical table, to be able to influence other actors by trade deals, but also to become self-sufficient in different goods like semiconductors or hydrogen in the future.

Finally, we, as European Citizens must adopt a cultural change, giving more importance to what we consume and trying to support the consumption of goods that respect these green policies.

Therefore, the author of this paper believes that European institutions need to be more ambitious and get out of the box on law redaction on this area. Innovative legislation is so much needed in order to avoid green washing techniques both in taxation and impact measuring.

In addition, a proper green transtition will demand of big investment plans in all of the sectors that will have to transtitionate, in order to help smaller producers to tackle the cost additions and production changes.

Finally, we, European Citizens, as individuals can not expect our institutions to take care of the whole green transtition. Consumer support of green products and individual actions in terms of mobility and waste management are key factors for the European Green Deal to success.

Bibliography

Barters, L. (2013). *Legal Issues of Economic Integration.* Netherlands: Wolter Kluwer.

Beckman, J., Maros, I., Jelliffe, J. L., Baquedano, F. G., & Scott, S. (2020). Economic and Food Security Impacts of Agricultural Input Reduc-tion Under the European Union Green Deal's Farm to Fork and Biodiversity Strategies. *United States Department of Agriculture, Economic Research* , 8.

BEIS. (2019). *Defra Greenhouse Gas Conversion Factors.* London: BBC.

Bojnec, S., & Fertö, I. (2014). *Meat export competitiveness of European Union countries on global markets.* Budapest: Institute of Economics, Hungarian Academy of Sciences.

Briamonte, L., Pergamo, R., Arru, B., Furesi, R., Pulina, P., & Madau, F. (2021). Sustainability Goals and Firm Behaviours: A Multi-Criteria Approach on Italian Agro-Food Sector. *Sustainability* , 13.

Carmona Rubio, N. (2020). *El campo en tiempos de coronavirus: una vuelta a lo esencial.* Sevilla: Universidad de Sevilla.

Clements, B., Eyraud, L., & Wane, A. (2013). Green Investment: Trends and determinants. *Energy Policy* , 852-865.

European Commission. (2020). *A hydrogen strategy for a climate-neutral Europe.* Brussels: European Commission.

European Commission. (2020). *A New Industrial Strategy for Europe.* COM(2020), Brussels.

Eurostat. (2019, 11 18). *EU production and trade of antibiotics.* Retrieved from https://ec.europa.eu/.

Eurostat. (2019). *From farm to fork.* Brussels: Eurostat.

Foramitt, M. (2019). *Is the future of the EU trade green?* Gothenburg: University of Gothenburg.

Gill, I. (2020). Whoever leads in artificial intelligence in 2030 will rule the world until 2100. *Brookings* .

Hydrogen Cars Now (2012), *European Union Hidrogen Higway*, available at https://www.hydrogencarsnow.com/index.php/european-union-hydrogen-highway/

Intergubernamental Group of Experts on Climate Change. (1996). *Tecnologías, Políticas y Medidas para mitigar el Cambio Climático.* New York: United Nations (UN).

Larsson, H. D. (2021). *Den gröna vändningen: En ny kunskapshistoria om miljöfrågornas genombrott under efterkrigstiden.* Göteborg: Kriterium.

Manoharan, Y. (2019). *Hydrogen Fuel Cell Vehicles; Current Status and Future Prospect.* Russellville: Arkansas Tech University.

McKinsey for the Finacial Times. (2021, July 21). Semiconductors: Europe's expensive plan to reach the top tier of chipmakers. *Financial Times* .

Murray, M. L. (2007). Towards a hydrogen economy in Portugal. *International Journal of Hydrogen Energy* , 3223-3229.

Railtech (2021), *Plan for European night train network presented by German green party*, available online at https://www.railtech.com/policy/2021/09/17/plan-for-european-night-train-network-presented-by-german-green-party/?gdpr=accept&gdpr=accept

National Foundation for Infectious Disease (2021), What is Antibiotic Resistance?, available at https://www.nfid.org/antibiotic-resistance/what-is-antibiotic-resistance/

Schebesta, H., & Candel, J. J. (2020). Game-changing potential of the EU's Farm to Fork Strategy. *Nature Food* , 586-588.

Sicurelli, D. (2020). Promoting sustainable development through trade? EU trade agreements and global value chains. *Rivista Italiana di Scienza Politica* .

Statista. (2021). *Statista*. Retrieved from https://www.statista.com/statistics/1026719/number-of-hydrogen-fuel-stations-by-country/

Wilbeforce, T. (2017). Developments of electric cars and fuel cell hydrogen electric cars. *International Journal of Hydrogen Energy* , 25695-25734.