THINK 2030

Science-policy solutions for a more sustainable Europe

21 November 2018

How to ensure a just and fast transition to a competitive low-carbon economy for the EU?

By: Rebekka Popp, Pieter de Pous and Jonathan Gaventa (E3G)

Led by:

E3G

Funded by:

This project has received funding from the European Commission through a LIFE grant. The content of this section reflects only the authors' views. The Commission is not responsible for any use that may be made of the information it contains.

THINK 2030

Science-policy solutions for a more sustainable Europe

Informing a science-based agenda for European environmental policy post 2020, Think 2030 is a new sustainability platform by IEEP that convenes a diverse range of stakeholders to discuss and propose solutions to Europe's most pressing sustainability issues.

DISCLAIMER

The arguments expressed in this report are solely those of the authors, and do not reflect the opinion of any other party.

Cover image: Shutterstock Standard License

THE REPORT SHOULD BE CITED AS FOLLOWS

E3G. 2018. "How to ensure a just and fast transition to a competitive low-carbon economy for the EU?" Paper prepared for the Think 2030 Platform

CORRESPONDING AUTHOR

Lead author: Rebekka Popp (Rebekka.popp@e3g.org)

Contributing authors: Pieter de Pous (Pieter.depous@e3g.org), Jonathan Gaventa (jonathan.gaventa@e3g.org)

Supporting author: Taylor Dimsdale (taylor.dimsdale@e3g.org)

ACKNOWLEDGEMENTS

We are grateful for helpful comments and constructive review by Eva Baños de Guisasola, Policy Adviser at CCRE/CEMR, Céline Charveriat, Executive Director at the Institute for European Environmental Policy (IEEP) and Taylor Dimsdale, Research Director at E3G. In addition, participants at the EESC/IEEP Think2030 workshop "The Social Dimensions for Sustainability" on October 22nd, 2018 provided valuable comments.

INSTITUTE FOR EUROPEAN ENVIRONMENTAL POLICY (IEEP)
Brussels Office
Rue de la Science, 4
1000 Bruxelles, Belgium
Tel: +32 (0) 2738 7482
Fax: +32 (0) 2732 4004

London Office
11 Belgrave Road
IEEP Offices, Floor 3
London, SW1V 1RB
Tel: +44 (0) 20 7799 2244
Fax: +44 (0) 20 7799 2600

The **Institute for European Environmental Policy (IEEP)** is a sustainability think tank. Working with stakeholders across EU institutions, international bodies, academia, civil society and industry, our team of policy professionals composed of economists, scientists and lawyers produce evidence-based research and policy insight.

Our work spans nine research areas and covers both short-term policy issues and long-term strategic studies. As a non-for-profit organization with over 40-years of experience, we are committed to advancing impact-driven sustainability policy across the EU and the world.

For further information about IEEP, see our website at www.ieep.eu. Twitter: @IEEP_eu.

Contents

1 Context

By 2018, the world has warmed by 1° C above pre-industrial levels and Europe is already facing wide-ranging climate-induced impacts such as heatwaves, droughts, wildfires, storms and floods with direct and indirect effects on ecosystems, the economy as well as human health and well-being in Europe. These climate-related extreme events caused almost EUR 400 billions of economic losses in the member countries of the European Economic Area over the period 1980-2013.[1]

In order to respond to this unprecedented threat the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) adopted in 2015 the Paris Agreement, which includes the long-term goal of holding the rise of global average temperature to "well below 2 °C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels".[2] So far, the combined emissions reductions that countries laid out in their Nationally Determined Contributions (NDCs) will result in an increase of 3 °C or more.[3]

Higher temperatures pose the risk of crossing multiple critical thresholds that lead to abrupt and irreversible changes in human and natural systems.[4] These tipping points include melting of polar ice sheets, and changes in ocean circulations and carbon reservoirs.[5] Some of these tipping points create positive feedback loops that would accelerate climate change even faster.[6] Although all EU countries are vulnerable to the effects of climate change, impacts will vary by region and include an increase in land temperatures, glacier retreat, decline of snow cover, changes in precipitation patterns, and increases in the intensity and frequency of extreme weather events, such as heat waves, heavy precipitation or storm.[7]

Europe is further vulnerable to climate change impacts outside Europe through its trade relations, infrastructure and transport, geopolitics and security risks, as well as human mobility related to migration and finance.[8] Scientists are increasingly becoming concerned that the world is likely to see profound and potentially irreversible impacts even at 2 °C degrees that can still be avoided at 1.5 °C. In fact, the IPCC clearly shows that a 2 °C limit is not safe but implies a high additional risk of extreme weather and disruption of natural and human systems.[9]

The magnitude of future climate change and its impacts from the middle of the century onwards crucially depend on the effectiveness of global climate mitigation efforts. With the Paris Agreement and the NDCs as its core, a mechanism has been put in place that enables countries to still close the gap to limit global warming to 1.5 °C, provided that existing efforts and commitments are accelerated. UNEP's 2017 Emission Gap Report shows that the existing gap between current and necessary efforts can be closed before 2030 by adopting already known and cost-effective technologies. But the report also emphasizes that missing the 2020 option of revising the NDCs would make closing the 2030

---

[1] https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016
[2] https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf
[3] https://climateactiontracker.org/global/temperatures/
[4] https://www.nature.com/articles/climate.2007.65; http://www.ipcc.ch/report/ar5/wg2/
[5] https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016
[6] https://www.e3g.org/library/the-eus-climate-strategy-needs-a-new-assessment-of-ambition
[7] https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016
[8] https://www.eea.europa.eu/publications/climate-change-impacts-and-vulnerability-2016
[9] http://www.ipcc.ch/report/ar5/wg2/

emissions gap “practically impossible”. [10] If the goals of the Paris Agreement are to remain achievable, there is an urgent need to accelerate short-term action and step up long-term national ambition.

The EU’s current commitments are a reduction of greenhouse gas emissions by 20 % in 2020, 40 % in 2030 and between 80 % and 95 % below 1990 levels in 2050. Although the EU is on track to meet its 2020 target as GHG emission are 23 % below 1990 levels, current efforts need to be enhanced to achieve the long-term goals of the EU for 2030 and 2050.[11] In fact, after stagnating between 2014 and 2016, EU emissions began increasing again in 2017.[12] Of special concern is the increase in emissions in the EU ETS sector, which can be observed for the first time since the economic recovery in 2010. Moreover, the current EU’s emissions reductions commitments are not consistent with holding warming below 1.5 °C or 2 °C. [13] Developments during 2018 in the European Union’s climate and energy policy are steps in the right direction. For example, the more ambitious renewable energy and energy efficiency targets adopted in June 2018 may increase the emissions reduction goal for 2030 from 40 % to around 45 % below 1990 levels. Having third highest emissions globally, it is key that the EU steps up its ambition in the next years.

The new Commission coming into place after the European parliamentary elections in May 2019 will have to deliver in putting the EU on a 1.5 °C trajectory through for example a revised, more ambitious Clean Energy Package, the EU 2050 Roadmap and corresponding policies. Implementing the Paris Agreement requires the EU to reach net zero emissions by 2050 at the latest. This decarbonisation process will imply fundamental changes in the way how people in the EU work, move, consume, eat, and live, and requires an EU that actively shapes and manages this transition. This change comes at a time when other mega trends in demography, technology and digitalisation are already reshaping the world as we know it. **The following paper argues that planning for a just transition for impacted regions and sectors should be a key priority for the incoming Commission in order to reach climate goals and ensure decent jobs for workers and a sustainable future for communities.**

---

10 https://wedocs.unep.org/bitstream/handle/20.500.11822/22101/EGR_2017_ES.pdf?isAllowed=y&sequence=1

11 https://www.eea.europa.eu/themes/climate/trends-and-projections-in-europe/trends-and-projections-in-europe-2017/overall-progress-towards-the-european

12 https://ec.europa.eu/eurostat/documents/2995521/8869789/8-04052018-BP-EN.pdf/e7891594-5ee1-4cb0-a530-c4a631efec19

13 https://climateactiontracker.org/countries/eu/

2 The Just Transition Concept and its Relevance for the EU

The implementation of the Paris Agreement requires a deep decarbonization of all sectors, leading to disruptive effects on high-carbon regions and sectors. Just transition is about capturing these complexities of the necessary transition towards a low-carbon and climate-resilient economy, highlighting public policy needs and aiming to maximize benefits and minimise risks for workers and local communities in this transformation. At the same time, the speed of such a Just transition needs to be in line with the Paris Agreement, to ensure that climate policies are ambitious enough to protect communities globally.

The concept has first been developed by trade unions in North America to provide a framework for discussions on the necessary social and economic interventions to secure workers' jobs and livelihoods in the shift from high-carbon to low-carbon, climate-resilient economies. Driven by the challenges posed by climate change, unions sought to align their efforts to provide workers with decent jobs with the protection of the environment. The concept was since endorsed and used by a rapidly increasing number of stakeholders, including local and federal governments (for example, Canada and Germany), civil society (for example, Greenpeace, WWF, Bankwatch, E3G), industry, and affected communities. In 2015, the International Labour Organization has set out "Guidelines on a Just transition towards environmentally-sustainable economies for all". Considering the "imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities" is further recognized in the UNFCCC process and the Paris Agreement as a key challenge for local transitions and the restructuring of real economy sectors.

The public policy needs for a just transition are however not only focused on minimizing the risk of unemployment for workers but increasingly recognize the opportunities a transformation to a green economy could provide to create decent, unionized jobs and a sustainable development in affected regions. Just transition incorporates a bundle of potential policies addressing the vulnerabilities of workers and communities, including bottom-up transition dialogues and democratic, participatory consultations in affected regions, local investments in low-carbon growth sectors and technologies, research and innovation strategies, reskilling and training, local economic diversification plans, targeted infrastructure investments, recultivation of local environments, and social protection measures (see, for example, ITUC's "Climate Justice: There are no jobs on a dead planet"). While most of these policies will be necessary components of any just transition process, it is widely acknowledged that specific transition strategies should be driven by local stakeholders and adapted to local needs.

Decarbonizing the global economy by 2050 requires a steeply accelerating pace of climate action. To build a bridge between the interests of unions, businesses and communities affected by climate change, it is important that the Commission understands just transition as a supporting mechanism of climate action, i.e. a central component of the real economy implementation of the Paris Agreement, and not allow it to be used to block climate action. Just transition should thus not be seen in opposition

to Paris-compatible environmental policies but as a framework for a socially just and economically successful transformation. [14]

The 17 Sustainable Development Goals (SDGs) that the EU committed to represent a comprehensive agenda for just transition, including poverty eradication (Goal 1), clean energy for all (Goal 7), decent work for all (Goal 8), and climate protection (Goal 13).[15] Climate action can thereby become a driver for sustainable economic growth and social progress in the EU.

2.1 Drivers and Deterrents of a Just transition in the EU's Key Sectors

Initially, the just transition concept was used to frame the challenge to transform economies from fossil-based energy and production systems to decentralized, renewable ones. However, the implementation of the Paris Agreement requires a deep decarbonization of all real economy sectors, implying structural changes across all sectors. For this reason, international union associations (see ICEM, ITF, ITUC statements) and other stakeholders increasingly recognize the need for similar discussions and strategizing in, for example, transport and mobility, energy-intensive industries, building and construction, and agriculture. While differing in the expected type and quality of transition, each sector will have to plan for its transition to a low-carbon, climate-resilient economy and consider the economic, social and environmental implications of the upcoming transition. To this aim, a clear understanding of the trajectories of these sectors is essential for the Commission to advance a comprehensive transition agenda. The following analysis helps to identify barriers and opportunities for a just transition in the energy sector, the automobile industry and agriculture and shows that the EU has a role to play.

2.2 Transitioning the energy sector

Europe's energy system has gone through fundamental changes in recent years because of advances in renewable energy technologies and decarbonisation policies. By now, one third of the EU's electricity generation comes from renewables, showing that a transition in the energy sector is already taking place.[16] The EU committed do increase renewable energy by 20 % in 2020 and by 32 % in 2030 and it targets an increase in energy efficiency by 20 % in 2020 and by 32.5 % in 2030.[17] Coal still provides a quarter of EU electricity generation and remains the predominant source of electricity generation in several EU countries.[18] Consequently, CO2 emissions from coal make up three-quarters of the emissions from the EU electricity sector.[19] A recent study shows that an almost complete coal phase-out by 2030 for OECD countries is necessary to stay within the temperature limit.[20]

To comprehend the scale of the transition needed in the energy sector, it is worth considering the number of people employed in the sector. In the EU, the coal sector provides jobs to about 240,000 people, with 180,000 employed in the mining of coal and lignite and 60,000 working in coal- and lignite-fired power plants. The EU country that records the highest number of coal mining jobs is Poland with about 115,500 people employed in coal mines and related businesses, however, representing only

---

[14] See E3G (2018) Funding the Just Transition to a Net Zero Economy in Europe for a review of the current debate on just transition in the EU context

[15] https://www.un.org/sustainabledevelopment/sustainable-development-goals/

[16] https://ec.europa.eu/eurostat/statistics-explained/index.php/Renewable_energy_statistics#30.25_of_electricity_generated_come_from_renewable_sources

[17] http://europa.eu/rapid/press-release_STATEMENT-18-3997_en.htm

[18] https://sandbag.org.uk/wp-content/uploads/2018/01/EU-power-sector-report-2017.pdf

[19] http://bruegel.org/wp-content/uploads/2017/11/PB-2017_05_SimoneTagliapietra-1.pdf

[20] http://climateanalytics.org/files/eu-coalstresstest-report-2017.pdf

0.71% of Poland's total employment. In all other countries, less than 30,000 people are employed in the coal industry, always representing less than 0.6 % of total national employment. Looking at the regional level, employment in the coal industry represents below 1 % of total regional employment, except for Silesia in Poland where coal mining jobs represent 5 % of regional employment with 50,000 people employed in the industry.[21] Compared to other sectors, the scale of the challenge is, thus, relatively small and impacts will be regionally concentrated.

The transition needs to be complemented by measures that decrease the economic, social and environmental costs of the energy transitions, particularly in regions heavily dependent on jobs in the coal sector, with measures targeted directly at the impacted workers but also the wider community. In contrast to other sectors, the coal sector is dependent on financial support from national and regional governments to implement transition measures. Many coal mines and power plants are facing changed economic conditions, and a reduction in profit from operating coal mines and power plants. For instance, the EU carbon price rose to a new record high of € 25 in September 2018. Next to higher carbon prices, recently introduced tougher EU air pollution standards (BREF), limiting toxic emissions of plants, will require costly upgrades in European coal plants between € 8-14.5 billion. In addition, operating costs of these plants with more effective filters are also projected to increase.[22] EU pollution standards and climate laws provide an opportunity for a wave of 'climate lawsuits' or strategic litigation where civil society and individuals ask governments for compliance, higher climate ambition or compensation for existing climate impacts.[23] Improving data on climate impacts and accountability of actors supports these lawsuits, which may cause high litigation and compensation costs for coal industries.

Although many transition measures will have to be targeted at workers and communities, they also need to consider land and environmental remediation. Doubts have been raised that energy companies are building up reserves for recultivation and landscaping in areas after brown-coal mining.[24] Moreover, ownership structures, and their liabilities will need to be considered when devising these measures. For instance, German energy company LEAG is owned by two Czech companies one of which is owned by one of the top ten wealthiest individuals in the world but who have, however, when they purchased LEAG from Vattenfall, ensured LEAG itself alone would be liable.

The fate of these coal jobs needs to be put in perspective with the transition in the energy sector creating jobs new industries like renewables. The latter already employs over 1 million people and according to estimates by Greenpeace and the European Renewable Energy Council is projected to grow with another 2.7 million more jobs in the next 20 years. The largest employers are the wind, solar PV and solid biomass industries. Irrespective of fossil or renewable, employment in the energy sector remains male dominated[25] with only 22.1% employed being women.[26]

---

[21] http://bruegel.org/wp-content/uploads/2017/11/PB-2017_05_SimoneTagliapietra-1.pdf

[22] https://climateanalytics.org/briefings/about-80-of-eu-and-german-virtually-all-polish-coal-plants-non-compliant-with-new-eu-2021-air-pollution-regulations/

[23] See for example EEB (2018) on BREF; Germanwatch; Independent

[24] https://crm.klima-allianz.de/civicrm?page=CiviCRM&q=civicrm/mailing/view&reset=1&id=178

[25] See for example; https://eige.europa.eu/gender-mainstreaming/policy-areas/energy

[26] https://www.eea.europa.eu/publications/renewable-energy-in-europe

2.3 Transitioning the automobile industry

Since 2016, the transport sector is responsible for a quarter of Europe's CO2 emissions.[27] The EU committed to reduce greenhouse gas emissions from the transport sector by 60 % in 2050 compared to 1990 levels. To achieve this, the Commission published a strategy for low-emission mobility which foresees increased efficiency of the transport system, a higher deployment of low-emission alternative energy for transport and the development of zero-emission vehicles.[28] The European automobile industry is currently faced with several major trends, with a shift from internal combustion engines to electric vehicles being one of them. The EU does not have a goal on electric vehicles, however, current proposals for CO2 standards for new passenger cars and vans are having a similar effect. The shift from internal combustion engines to electric cars is further accelerated by a growing number of European countries that implement diesel bans in areas suffering from heavy air pollution. Aside from a trend to the electrification of transport, the sector is experiencing a shift towards more autonomous cars and from individual car ownership to shared mobility services.[29] It is important to note that decarbonisation is only one factor influencing the development of employment in the automobile sector. For instance, the growing automation of the auto industry will result in job losses regardless of the low-carbon transition.[30]

Compared to the coal industry, the scale of the transition required for a decarbonization of the transport sector and its impacts on the automobile industry are very different as a much higher number of jobs are involved. 13 million Europeans work in the automobile sector in manufacturing, services and construction, representing 6.1 % of total EU employment. 2.5 million of these work in direct manufacturing, making up 8.3% of EU employment in manufacturing.[31] Also in the car industry, most employees are male with only 24% of employees being women.[32] The country with the highest employment in the automobile industry is Germany with about 850,000 workers. In France, Poland, Romania, the UK, Czech Republic, Italy and Spain the industry provides between 100,000 and 200,000 jobs.[33] Compared to the coal industry, the jobs in the automobile industry are much more dispersed geographically. For instance, there are 227 automobile assembly and production plants in the EU. Although many of these are in Germany (43), France (35), the United Kingdom (33) and Italy (24), other European countries are also home to the automobile industry.[34]

The impact of the transition to clean mobility on these jobs depends primarily on the type of vehicle produced but also on the location of future manufacturing as parts of the value chain may be moved outside of Europe.[35] Different vehicle types require varying degrees of labour intensity. For instance, an ECF commissioned report projects that building a battery electric vehicle (BEV) will be less labour intensive than building the gasoline and diesel vehicles they will replace, whereas constructing hybrids and plug-in hybrid electric vehicles is expected to be more labour intensive.[36] Projections of the same report show that in the 2020s internal combustion engines will still make up the largest share of new vehicle sales. However, after 2030 their share will decline, and battery electric vehicles will begin to

---

[27] https://ec.europa.eu/eurostat/statistics-explained/index.php/Greenhouse_gas_emission_statistics
[28] https://ec.europa.eu/transport/themes/strategies/news/2016-07-20-decarbonisation_e
[29] https://www.e3g.org/library/a-just-transition-for-all
[30] http://www.camecon.com/wp-content/uploads/2018/02/ECF-Fuelling-Europe_EN_web.pdf
[31] https://www.acea.be/uploads/publications/ACEA_Pocket_Guide_2018-2019.pdf
[32] See for example; https://www.catalyst.org/knowledge/women-automotive-industry
[33] https://www.acea.be/statistics/article/employment
[34] https://www.acea.be/uploads/publications/ACEA_Pocket_Guide_2018-2019.pdf
[35] http://www.camecon.com/wp-content/uploads/2018/02/ECF-Fuelling-Europe_EN_web.pdf
[36] http://www.camecon.com/wp-content/uploads/2018/02/ECF-Fuelling-Europe_EN_web.pdf

dominate the market.[37] Interestingly, hybrid electric vehicles will also be prominent in the end of the 2020s and beginning of the 2030s, facilitating the reskilling process as workers will work with both the old and new technologies in parallel. In contrast to the energy sector where the transition is already taking place, the transition in the automotive sector is only slowly taking shape, offering ample opportunity for the EU to manage the transition and its effects.

The transition to electricity and hydrogen will create new jobs in construction, electricity, hydrogen, services and most manufacturing sectors but it will also reduce jobs in manufacturing combustion engines and the fuels sector providing the gasoline and diesel needed to power them. Over all, the net impact is estimated to be positive with 206,000 net additional jobs created by 2030.[38] There is further research needed on the distribution of impacts, especially when it comes to the Diesel supply chain which will be affected the earliest.

The car industry, in comparison to the coal industry, has higher financial resources to fund transition measures and assume responsibility for just transition programmes and reskilling of workers. German Volkswagen, for example, delivered a record profit of € 2.7 billion in 2017.[39] However, the transition also depends on the corporate strategies of individual companies. For instance, the European automobile sector has been reluctant to embrace e-mobility and appears to be falling behind developments in countries, such as China, India, Norway or the state of California.[40] Moreover, to date Europe has only one plant producing battery cells for electric cars with several companies and car manufacturers now beginning to develop plans to develop their own battery cells.[41] Currently, Asian companies dominate the market of the production of lithium-ion battery cells and, thus, have an advantage regarding current battery cell chemistries as they can easily expand existing production sites at relatively low cost. Opportunities for the EU may emerge when an industrial policy is put in place that encourages the development of new battery technologies and reduces hesitation among European companies.

2.4 Transitioning the agricultural sector

The agricultural sector accounts for roughly 10 % of EU emissions.[42] Compared to other sectors, it is highly exposed to climate change as farming conditions directly depend on climate conditions. In recent years, the agricultural sector has been increasingly affected by climate-induced extreme weather events, such as hail, heavy rainfall, floods and droughts, leading to reduced yields. Therefore, high adaptation needs already imply changes to existing farming practices. In the EU, around 10 million people work in agriculture, accounting for 4.4 % of total EU employment. Although higher than in energy and car manufacturing, share of women in farming is with 35% still well below the 45% in the total working population.[43] In Romania, Bulgaria, Greece and Poland employment in agriculture account for more than 10 % of total employment, whereas in more than half of the member states it

[37] http://www.camecon.com/wp-content/uploads/2018/02/ECF-Fuelling-Europe_EN_web.pdf
[38] http://www.camecon.com/wp-content/uploads/2018/02/ECF-Fuelling-Europe_EN_web.pdf
[39] https://www.ft.com/content/a6e96424-18b2-11e8-9376-4a6390addb44
[40] https://climateactiontracker.org/countries/eu/
[41] https://www.reuters.com/article/us-autos-batteries-europe-factbox/factbox-plans-for-electric-car-battery-production-in-europe-idUSKCN1J10N8
[42] https://ec.europa.eu/eurostat/statistics-explained/index.php/Greenhouse_gas_emission_statistics
[43] See; https://ec.europa.eu/eurostat/statistics-explained/index.php/Farmers_in_the_EU_-_statistics#Socio-demographic_characteristics

accounts for considerably less than 5 % of total employment.[44] In most Member States employment has been declining over the last 50 years.

Agriculture has already been through a major transition towards more energy intensive, specialized and mechanized production systems. Consequently, production takes place in fewer, larger and more capital-intensive farms. In contrast to the energy and transport sector, the EU agricultural sector is under full EU competence and regulated by the Common Agricultural Policy (CAP), which influenced past and current developments through European subsidies in particular. Even though the CAP has been frequently reformed, it has become near impossible to effectively integrate climate and other environmental objectives[45] into the system and thereby adjust the policy and farm practices to the new realities. Also the latest CAP proposals from Commissioner Hogan have been severely criticised by the European Court of Auditors[46]. The CAP has thus tended to inhibit rather than encourage and enable structural change towards agricultural practices that reduce their impact on the climate.

Regarding governance arrangements, the agricultural sector stands out for another reason in the context of just transition. It is one of the few sectors which is particularly well represented in the EU governance system with its own Ministries, Parliamentary Committee, and, at the EU level, a Council Formation and Directorate General.[47] This has made it particularly difficult to initiate and agree on effective new policy proposals that drive a process of change. Most decision makers involved see it as their job description to maintain the status quo and maximize the amount of subsidies they can bring home to their constituency. Over time these constituencies have come to consider these subsidies as an entitlement, or even a fundamental right.

The transition of agricultural practices is also complicated by the fact that there exists little consensus on what the process of transitioning to climate-friendly, sustainable farming practices would look like, with views ranging from high tech climate smart scenarios to a shift towards organic production. It is therefore not only a question of how fast the sector will adjust but also in which direction, making it much more difficult to assess the impacts on employment of such a process.[48]

That said, the sector is already facing changing consumption patterns that will require adjustment. For instance, the demand for organic products is steadily increasing with already established Western European markets experiencing growth of 5.4 % between 2015 and 2016 and Easter European sales recording a growth rate of 8.8 % in the same period.[49] The proportion of the total utilised agriculture area within the EU farmed organically correspondingly increased from 5.6 % to 6.7 % in the period from 2012 to 2016.[50] Another major trend is the emergence of largely or completely meat-free diets, including the development of new technologies that produce plant-based alternatives.[51] While reliable EU-wide figures are largely absent, the British Vegan Society found that Britain's vegan population has

---

[44] https://ec.europa.eu/eurostat/statistics-explained/index.php/Farmers_in_the_EU_-_statistics

[45] European Court of Auditors; https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=39853, http://eeb.org/not-fit-for-purpose-ngos-present-fitness-check-of-the-common-agricultural-policy/

[46] https://www.eca.europa.eu/en/Pages/NewsItem.aspx?nid=11067

[47] https://www.e3g.org/library/a-just-transition-for-all

[48] https://www.e3g.org/library/a-just-transition-for-all

[49] https://www.statista.com/topics/3446/organic-food-market-in-europe/

[50] https://www.eea.europa.eu/themes/agriculture/intro

[51] https://www.e3g.org/library/a-just-transition-for-all

increased from 150,000 to 542,000 from 2006 to 2016.[52] Moreover, Europe has become the largest market for meat substitutes and accounts for 39 % of global sales.[53]

This trend is particularly relevant as various studies that have looked into the climate impact of farming and livestock like GP and RISE, have concluded that a 50 % reduction in livestock capacities will be necessary for farming to help achieve existing climate goals for 2030 and 2050. In fact, RISE identified a safe operating space for livestock and found that in order to reach EU climate targets, livestock in the EU needs to be reduced by 74 % in 2050.[54] In addition to reacting to broader societal trends and delivering mitigation and adaptation co-benefits, such a transition in the livestock sector would have positive benefits on biodiversity due to a reduced land area needed for growing animal feed, which would free this up for other purposes.

A group of scientists including biologist Edward O. Wilson have argued that in order to save biodiversity, 50 % of the surface of the Earth should be set aside for nature conservation.[55] Cristiana Pașca Palmer, Executive Secretary of the Convention on Biological Diversity, picked this goal up and suggests that 50% target should be broadened to include efforts to conserve, restore and transform land to more lower-impact use by local communities.[56] Also the climate benefits of biodiversity, in the form of nature based or ecosystem based mitigation is increasingly gaining traction for example through a cooperation between IUCN and the German government with the so called Bonn Challenge, a global effort to bring 150 million hectares of deforested and degraded land into restoration by 2020 and 350 million hectares by 2030. This would generate an estimated $170 billion a year in net benefits and would allow carbon storage of 1.7 gigatonnes of CO2 annually[57]. And a group of NGO's that has come together in the Climate Land Ambition and Rights Alliance (CLARA) has calculated in its 'Missing Pathways to 1.5 Degree Celsius report' how a combination of avoided deforestation, forest restoration and expansion can store 14.77 Gigatons of CO2 eq per year globally by 2050[58].

The development of a more joint up strategy around land use, food and farming and an assessment of its impact on employment and reskilling needs is something that will require significant further efforts.

2.5 An EU Role in Just transition

This brief review of energy, automobile industries and agriculture suggests that we are only at the beginning of the transformation they will be going through. Efforts to avoid catastrophic climate change are one reason this transformation is happening, and the EU plays an important role in driving this process forward, as a global rule maker, a party to international conventions, a community of law based on fundamental rights and by the sheer size of its market.

The impact this will have on employment differs per sector with some jobs such as coal mining or manufacturing of parts in the Diesel supply chain, expected to disappear entirely, whereas other jobs, for example in crop farming, extensive grazing, renewable and energy services or assembling of cars

---

[52] https://www.theguardian.com/lifeandstyle/2018/apr/01/vegans-are-coming-millennials-health-climate-change-animal-welfare

[53] https://www.foodnavigator.com/Article/2017/08/24/Europe-leads-in-innovation-as-meat-free-demand-grows

[54] http://www.risefoundation.eu/images/files/2018/2018_RISE_LIVESTOCK_FULL.pdf

[55] https://eowilsonfoundation.org/half-earth-our-planet-s-fight-for-life/

[56] https://www.theguardian.com/environment/2018/apr/13/make-half-the-world-more-nature-friendly-by-2050-says-un-chief

[57] Friends of Europe, 2018 scaling disruptive technologies to achieve energy transition

[58] https://www.climatelandambitionrightsalliance.org/report/

are likely to remain and grow. In all cases however a reskilling and supporting of workers towards new employment opportunities is something that will require active support. It will also require close coordination across levels of governance (EU, national and local) and policy fields, in particular industrial, energy, climate and social policies.

The review shows how incumbents in each sector function as another barrier to a process of just transition, with research having shown why dominant market players struggle to adapt to disruptive innovations[59] and instead use their political muscle to push for polices that cement their dominance at the expense of new entrants.

[59] Rebecca Henderson; https://www.jstor.org/stable/2393549?seq=1#page_scan_tab_contents

3 Political priorities for the next Commission

The political priorities for the next European Commission will be formally adopted in a special Council meeting in June 2019 after the elections of the European Parliament in May. These political priorities will guide the EU's political agenda during a period in which the EU will need to decisively double its climate protection efforts if the world is to have a chance of avoiding the catastrophic climate impacts that come with every percentage point increase beyond 1.5 °C.

It is therefore essential that the European Commission makes ambitious climate and environmental policy one of its central priorities and as well as align its other priorities in the areas of security, finance, economic stability, foreign policy as well as social and employment policy to this imperative. These new political priorities should lead to the following new initiatives in EU policy, governance and finance.

Make the EU 2050 Roadmap a powerful tool for change: An initial proposal for a new long-term climate strategy is expected in November 2018 before COP 24 in Poland and the current Commission must adopt the strategy by March 2019. European heads of states and government are expected to endorse the strategy by early 2020 to meet the deadline set out in the Paris Agreement. This means the new Commission will have to put the roadmap high on the agenda to ensure that it leads to the adoption of the necessary new policy initiatives. A process must be organised that will update the document (ensuring it will include a net zero target by 2050, a mapping of sectoral transition pathways, i.e. composition and regional distribution of work force, future skill needs, future developments of markets, including declining sectors but also opportunities for future growth), providing clarity on how regulators and other authorities must use the roadmap and making clear how its fits into national and European governance systems. Thereby the EU long-term strategy can become a powerful tool for change, considering that roadmaps are only as influential as the frameworks they are embedded in.[60]

Maximise the potential of the EU budget to contribute to the transition to the green economy: The EU budget is the EU's main direct financing tool to support just transitions in European regions. Although there is no dedicated 'Just transition' fund foreseen, the new EU budget with its proposed envelope of € 1.279 trillion, its cross-cutting nature and its EU-wide reach, has the potential to financially support the needs of affected regions and communities.[61] To effectively support future-facing industries, green development models, innovation, job creation and reskilling of workers in these areas the budget needs to reflect these priorities across relevant legislative proposals, for example through ringfencing climate action and a ban on fossil fuel subsidies. Just as important though the new Commission will need to play an active role in overseeing the new EU's budget's spending to ensure it is used to its full potential.

Raise ambition of EU 2030 climate and energy targets: The EU needs to plan for a more ambitious upward revision of its 2030 Climate and Energy targets. For instance, CAN Europe and other stakeholders call for at least 55 % greenhouse gas emissions reductions, at least 45 % renewable energy and at least 40 % energy savings.[62] Setting these goals at a more ambitious level will ensure the

[60] https://www.e3g.org/library/the-politics-of-climate-roadmaps-lessons-for-the-eu
[61] E3G (2018) Funding the Just Transition to a Net Zero Economy in Europe
[62] http://www.caneurope.org/energy/climate-energy-targets

necessary balance between the need to provide planning security to member states, its regions, industry and workers as well as to ensure that the just transition process takes place within a time frame when the impacts and costs of climate change are still manageable.

An effective European Social Pillar in support of Just transition: With the adoption of the European Pillar of Social Rights in 2017 the EU has set a first step towards strengthening the EU's role in social protection. In particular the recognition of citizens' rights to education, life-long training and support in seeking employment should help the social pillar to become a key instrument in delivering on just transition. As a first step, the Commission should as part of its monitoring of the implementation of the Social Pillar assess its contribution to just transition strategies, both through its online scorecard as well as through the annual Country Specific Recommendations under the European Semester.

Promote quality jobs in the green economy: The EU should more strongly promote the quality of employment in the green economy and set up a high-level group bringing together renewables, clean tech, unions and NGO's to develop recommendations to this end.

Reform EU governance: Developing a supportive policy framework for a transition process that is both just and fast requires the development of innovations in governance that reduce the political clout of incumbents in favour of disruptive innovators. Reducing the lobbying power of incumbents should be a central goal of the new Commission and be reflected in a re-organisation of the Commission's structure and its decision making. The effective re-nationalisation of the CAP for example, has created an opportunity to shift the responsibilities of DG-AGRI for rural development policy to DG Regional Development, with a role for DG-CLIMA and DG-ENVI to ensure coherence with climate goals. Oversight to the phasing out of currently ineffective direct payment through a just transition programme could then be managed by DG Employment.

Turn Coal Regions in Transition Platform into a vehicle for driving change: With the establishment of the Coal Regions in Transition Platform in 2017, the European Commission has put just transition high up on the political agenda, providing a platform for exchange and knowledge-sharing across Europe. While discussions in the platform currently focus on transitions in European coal regions, it is set out to expand to broader shifts from high-carbon to low-carbon economies. To turn the platform into a vehicle for driving change, the Commission should give the platform a clear climate mandate, including a foresight component. This also requires a balanced composition of members to guarantee equal representation of interests. Similar examples include the Danish Disruption Task Force or the Scottish Just transition Commission.