Young Voices on a Sustainable European Future

POLICY PAPER

German-Baltic Conference Riga 2022

dbjw

Federal Foreign Office

German-Baltic Conference

The German-Baltic Conferences bring together young European leaders to envision truely European solutions for a joint future. In four Clusters Youth Ambassadors develop ideas to be discussed with decision makers on regional, national and European level. In parallel the partner organisations of the German-Baltic Youth Exchange Network (GBYEN) use this opportunity for expanding their crossborder networks.

German-Baltic Youth Foundation - *dbjw*

In light of joint responsibility for the European history *dbjw* strives to win young Europeans to contribute to a peaceful and cooperative future. To accomplish this goal the *dbjw* offers loans, grants educational seminars and networking opportunities. We stand in for democracy, human rights, and rule of law.

Acknowledgement

Table of Contents

Executive Summary

This Policy Paper was created during the German-Baltic Conference 2022 in Riga., were 27 *Youth Ambassadors* from 14 different European countries between 18 and 30 years of age participated. In preparation, they had the opportunity to listen to online expert lectures and partake in discussions on four different Cluster topics surrounding sustainability. Afterwards they were split into four Cluster groups, each guided and moderated by a *Head of Cluster*. During the conference in Riga the participants had two days to prepare a presentation of their Cluster work and finalize abstracts of their policy paper contributions. The final policy paper presented here was then finished within two weeks after the event took place.

The Climate Crisis affects us all and we all have an impact on our environment. Sustainability is therefore currently one of the most relevant topics to be discussed by the general public as well as governments. The importance of which is often pushed by the younger generations, whose lives will be affected by the environmental changes most prominently.

While choosing sustainability as the overarching theme for the German-Baltic Conference in Riga we focused on a holistic understanding of this term. We understand sustainability as a broad concept that allows us to envision new systems to be implemented today that benefit a prosperous future for ourselves here in Europe, in the world and for future generations. Since the systems that brought Europe to its current status quo, which are based on constant expectations of growth, profits and expansion, are harmful and cannot be maintained, it requires the creativity as well as scientific understanding of young people to create new ideas for the future of Europe.

The four Cluster topics that formed the framework for the groups work were intended to cover a wide variety of aspects connected to sustainability while still providing a concrete starting point for discussions. The Youth Ambassadors then had the task to collectively decide on a specific topic of interest and focus their contribution to the policy paper on their concerns, ideas, and desires for the future.

Cluster A: Sustainability and Consumption

The first Cluster was intended to look at what impact our own behaviour can have on our environment by what we purchase, by how we treat the things we own and by how we get rid of the things we no longer want. The Cluster "Sustainability and Consumption" took up these questions and incorporated external factors set by companies, state regulations and public services that form the framework for our individual decisions.

The Cluster A group decided to focus their policy paper contribution on the crucial role that advertisement plays on consumption behaviour. Their recommendations include banning advertisements for the most environmentally harmful products, prohibiting advertisement in publicly owned space, creating an independent European agency for advertisement control and reclaiming the existing advertising space with awareness campaigns.

Cluster B: Sustainability and Digital Systems

The idea for the second Cluster focused on technological developments, which are discussed as the solutions for a better future. Prominent examples are electric cars, paperless offices or the improvement of plane aerodynamics. While many of them can be beneficial for a carob emission free future, it was important for us to discuss "Sustainability and Digital Systems" as the paradox of new innovations and their often hidden impacts as well as the huge resources, these technologies take up.

The Cluster B group decided to focus their policy paper contribution on tackling the problem of bottlenecks within electrical grids that hinder the transport of all the electrical renewable energy being produced. They propose to optimise the existing electrical grid system by exploiting natural weather occurrences to cool power lines and maximise the use of existing green energy plants. Their recommendations therefore call for policies to encourage unified inter-regional data collection and communication as well as cooperation between electric grid operators all across Europe.

Cluster C: Sustainability and Nature

The third Cluster was supposed to encompass the aspects of sustainability that are most commonly associated with the term. The environmental factors discussed ranged from CO_2 emissions and renewable energy to the protection of biodiversity and other resources.

The Cluster C group decided to focus their policy paper contribution on the great pressure that the mass consumption of personal electronic devices places on the environment due to their reliance on rare earth elements (REE) and other precious metals. The Cluster proposes changes to the acquisition of new REEs and precious metals, the product design of electronic devices, establishing an effective and inclusive right-to-repair policy and greater obligations for recycling.

Cluster D: Sustainability and Democracy

The last Cluster had the intention to address the social components and communal efforts needed to secure a good and life-worthy future. Recent developments in Europe, such as the brutal war against the Ukraine, make it even more evident that the freedom, stability, and independence of European countries are not given but need to be actively maintained. Against threats from outside as well as inside we wanted to address "Sustainability and Democracy" highlighting the necessity for civil society and how each one of us can help maintain and further democratic values in Cluster D.

The Cluster D group decided to focus their contribution to the policy paper on political instruments for younger generations that can help them express their opinions in order to be considered by national governments. They propose a youth citizen assembly as an ideal tool to raise awareness about climate-related issues as well as to foster the participation of young people in decisions about climate policies. Their recommended model involves 100 randomly selected participants representing the youth of a given society that come together once a month over a six -month period to get input by experts, discuss selected topics and find compromises and propositions for the national parliament.

All ideas and recommendations summarised here are detailed in the following policy paper. The *dbjw* is proud of the contributions of all Youth Ambassadors and will undertake anything within their power to distribute these ideas among politicians and decision makers on regional, national, and European level, because

#EuropeShallHearYou.

Larissa Leiminger (Cluster Coordinator)

Seduced to consume? Policy recommendations for stricter regulations on advertisement

Abstract - Cluster A "Sustainability and Consumption"

Achieving sustainability requires a radical rethinking of society's consumption patterns. Not only is it necessary to consume in a more sustainable way, but also to reduce consumption itself. Advertisement plays a crucial role in influencing consumption behavior, while being a core element in our economy and our lifestyle.

This policy paper argues that new regulations on advertisement in the European Union (EU) are necessary to reduce consumption, since we might not realize how many advertisements we are exposed to and how influential it is for our consumption lifestyle.

The authors of this paper identified two major challenges. First, advertisement pushes consumers towards over-consumption tendencies by creating needs and invading the public sphere. Second, a number of advertising campaigns rely on so-called green and eco-friendly claims, misleading the consumer into a false sense of sustainability. Also, a lack of regulation on the use of eco labels gives a competitive disadvantage to the companies that produce truly eco-friendly products.

In the long-term objective of creating an advertisement-free society and driven by those observations, the following paper prescribes 3 recommendations:

1. Banning advertisements for the most environmentally harmful products, such as flights, and prohibiting advertisement in publicly owned space.
2. Creating an independent European agency for advertisement control with the goals of setting, implementing and monitoring environmental regulations in advertisement, providing a platform to citizens and businesses and introducing a European-wide labeling system clearly stating the environmental impact of advertised products.
3. Reclaiming the existing advertising space with awareness campaigns about the environmental impact of consumption.

Given the prescriptive approach to the topic, the paper constitutes an essential read for the policymakers, who are especially interested in social and political processes that lead to prominent sustainable changes.

Keywords: sustainability, consumption, advertising, policymakers, recommendations

I. Introduction

Our society is built on constant economic growth and increased prosperity. However, growth and economy need resources, which are limited on earth. The earth-overshoot-day, the day where we have consumed more resources than the earth is able to regenerate that same year, is constantly moving forward in the calendar. In 1971, this day was reached on 25th of December. In 2022, it was already on 28th of July (Global Footprint Network 2022).

According to a study, an average American home contains 300.000 items (Mac Vean 2014) and it is fair to assume a similar number for the average European house. We buy twice as many material goods as 50 years ago (Becker 2018). The awareness that we cannot keep consuming like this is constantly growing. Less consumption will be key to attain sustainability (Bekele 1998, Hickel and Kallis 2020, Kjellberg 2008, Sachs et al. 2003). More and more scholars and experts call for re-orienting our consumption towards de-growth and sufficiency (Alexander 2015, Kallis et al. 2012). Not only is it necessary to consume in a more sustainable way, but also to reduce consumption itself. Advertisement plays a crucial role in influencing consumption behavior, while being a core element in our economy and our lifestyle (Kjellberg, 2008).

In our consumption society, advertisements are all around us. When listening to the radio, watching TV, using the internet or even outside in public space. We are exposed to up to 5.000 advertisements a day (Yankelovich 2004). Advertisement is defined as "any paid form of nonpersonal presentation and promotion of ideas, goods or service" (Kotler 1988: 587) or as "the making of a representation in any form in connection with a trade, business, craft or profession in order to promote the supply of goods or services" (Directive 2006/114/EC). Besides providing information and announcing products, services or ideas, advertising has the function to influence the targeted person to consume (Bundeszentrale für politische Bildung 2016, Fennis and Stroebe 2016). An aspect of influencing potential consumers is done by targeting their emotions. Through the usage of certain colours, pictures or music advertising aims at making someone feel the need to consume to get closer to their goals and wishes, to be happy (Bundeszentrale für politische Bildung 2016). Therefore, the authors of this paper are recommending new regulations on advertisement in the European Union (EU) to reduce consumption and face the challenges of climate change.

After giving an overview about the problems of consume-increasing and misleading advertising, the current legal framework in the EU is presented. Subsequently the authors give recommendations for policies on how to regulate advertising in order to achieve a more sustainable way of consumption.

II. The correlation between advertisement and consumption

By consuming greenhouse gases (GHG) are emitted, largely contributing to climate change and crises resulting from it. The main way to reduce our GHG emissions would be to consume less products, yet advertising is making us consume more, ultimately leading to over-consumption. Therefore, the authors of this paper want to target advertisement to tackle this issue.

Advertising is omnipresent in our daily lives, whether as videos or images, distributed by mail (paper or virtual), on social networks and websites or displayed in public spaces. In 2017, an average consumer was exposed to approximately 110 minutes of advertising per day (Kivijarv 2018). Moreover, to be more efficient, i.e. to push the consumer to consume more, consumers are targeted and analysed to be proposed adapted products. According to Kantar's Beyond Age study, building targets based on consumers' life experiences and behaviors rather than their age could quadruple the targeting effectiveness of certain marketing campaigns (Lamari 2022).

Advertising is present everywhere and is effective and powerful. However, the point we want to raise is that advertising encourages the consumption of products that can be polluting. Indeed, new research by Greenpeace and the New Weather Institute reveals the extent of the climate impact from cars and airline adverts: at a global level, car advertising could be responsible for some 570 million

tonnes of CO2, that is 27 million tonnes higher than Australia's entire GHG emissions in 2019. Airline advertising globally may be associated with about 34 million tonnes of CO2 (AirportWatch 2022). Finally, the Intergovernmental Panel on Climate Change (IPCC) Report lists regulation of advertising as an example of a policy measure that can have a "major influence on mitigative capacity". This concludes that advertising can be effective in reducing emissions if it is controlled.

Therefore, we need to regulate advertisement in general, and in particular for "environmentally unfriendly" products which are products that harm the environment over-proportionately.

III. Informed or misled? Challenges related to misleading advertisement practices

In recent years, an increasing number of consumers is taking into consideration the environmental impact of products they purchase. The sustainability of products as well as sustainability policies applied by companies are becoming increasingly often a key criterion for consumers. Hereby, advertisement can play a key role in "orienting" consumers towards environmentally friendly products. However, in many cases consumers do not have sufficient access on reliable information about the environmental impact of a product or its sustainability. Furthermore, an increasing number of companies use misleading advertisement, promoting their product or service as being more environmentally friendly than it actually is, in order to attract consumers.

The EU defines misleading advertising in its Directive on misleading and comparative advertising (Directive 2006/114/EC) as

"any advertising which in any way, including its presentation, deceives or is likely to deceive the persons to whom it is addressed or whom it reaches and which, by reason of its deceptive nature, is likely to affect their economic behaviour or which, for those reasons, injures or is likely to injure a competitor" (Directive 2006/114/EC).

The use of false or insufficiently provable statements on advertisement has become more widespread in recent years, especially regarding environmental claims. The practice of so-called "green-washing" describes thereby situations in which companies make a product, policy, service or activity appear to be more environmentally friendly or less environmentally damaging than it really is (Garrett 2022). "Green-washing" in advertising relates to two problems. First, consumers may be manipulated by false, ambiguous or misleading environmental claims. This not only deprives them of the opportunity to actively contribute to sustainability through their consumption decisions, but also this risks that their trust in information about the environmental impact of products or services will be lost in the long term. Secondly, and closely related to the first point, companies that actually produce or sell truly environmentally friendly or climate-neutral products are disadvantaged if the use of environmental claims or labels on advertisements is not sufficiently regulated (European Commission 2022a).

Therefore, the authors of this paper recommend adopting stricter EU-wide rules on the use of environmental claims and labels in advertisement. Both consumers and companies benefit from stricter rules in the long term: thanks to a better availability and reliability of environmental information of products or services, consumers can make more informed decisions and change their consumption patterns; companies that produce climate-neutral or environmentally friendly products increase their level playing field and incentives for sustainable practices are strengthened.

IV. Current legal framework on advertisement

So far, there are few regulations within the EU in place concerning advertisement. The field is mostly covered by the Directive 2006/114/EC on Misleading and Comparative Advertising, although it only sets the very ground rules for advertising within the EU. The directive defines advertisement in Art. 2 (a) as

"the making of a representation in any form in connection with a trade, business, craft or profession in order to promote the supply of goods or services, including immovable property, rights and obligations".

Misleading is anything that in one way or the other deceives consumers. At the same time, comparative advertisement needs to meet stricter requirements.

In March 2022, the European Commission published a proposal for a new directive on empowering consumers for the green transition aiming to regulate the use of environmental claims in advertisement and reducing corporate greenwashing (European Commission 2022b). This proposal is currently under discussion.

Apart from EU-wide regulation, member states of the EU are free to exceed these minimum standards set out by the directive with their own national legislation.

V. Policy recommendations

1. Banning advertisements for the most environmentally harmful products, such as flights, and prohibiting advertisement in publicly owned space

Banning specifically harmful advertisements

In the objective of achieving an advertising-free society in the long-term, we suggest reducing the amount of advertisement progressively in the short-term. As a first, targeted step we recommend banning advertising for carbon-intense products, including but not limited to petrol or fossil fuelled cars, gas- or oil-based heating systems, food products with an over proportionate carbon footprint (e.g. red meat) as well as plane and cruise travel. It is hypocritical to promote such products while attempting to achieve a sustainable society.

Bans on advertisement for tobacco, alcohol and unhealthy products already exist and show that such prohibitions are legally feasible, achievable and effective. Germany, for instance, has already implemented a ban on tobacco advertisements on

TV, in the press or in the cinema as well as on the internet (Bundesregierung 2021). Similar laws have been adopted in most other European countries. The United Kingdom, for instance, banned advertising for unhealthy food on TV before 9 pm (UK government 2021) and advertisement with gender stereotypes for children are forbidden in Spain (Euronews 2022).

Bans on advertisement for environmental and climate protection reasons have already been adopted in the city of Amsterdam in 2021. Since that, advertisement for petrol and diesel fuelled cars and flights are forbidden in public space (Bearne 2021).

Based on those examples, we recommend banning advertisements for environmentally harmful products in the EU:

- petrol or fossil fuelled cars
- gas- or oil-based heating systems
- food products with an over proportionate carbon footprint (e.g. red meat)
- plane travel
- cruises

In the longer perspective, the agency described in recommendation 2 will help define which additional products will fall into this category. The agency will develop a mechanism for determining and labelling the carbon footprint of every product and service. This can improve transparency and provides a more comprehensive data basis for future advertising bans.

Banning advertisements in publicly owned spaces

While some advertisements need to be banned due to their environmentally harmful nature in the first place, we recommend banning advertisements in publicly owned spaces in general. Examples of banning advertisement in public spaces at the municipal level, such as in Sao Paolo (Brazil) with its "Clean City Law" in 2006 or in Grenoble (France) and Chennai (India), show that such bans can be implemented quickly and efficiently (Berlin Werbefrei 2022).

2. Creating an independent European agency for advertisement control with the goals of setting, implementing and monitoring environmental regulations in advertisement,

providing a platform to citizens and businesses and introducing a European-wide labelling system clearly stating the environmental impact of advertised products

For better regulating advertisement in the long-term, we recommend creating an independent European agency which will carry the following tasks:

1. Finding adequate techniques for better measuring and comparing the carbon footprint of products and services

As mentioned in recommendation 1, we suggest that in the long-term advertisements must contain a reference to the carbon footprint of the advertised product or service. The independent European agency should develop in close cooperation with scientists a comprehensive way for measuring the carbon footprint of products and services along their whole production and transportation chain. A comprehensive data base should be created which could then be used for further regulations. This measure will also help in building a strong relationship between scientists and politicians.

2. Once the aforementioned data base is set up, the agency should create a unique green label for eco-friendly products and services. Only products and services under a then to be defined threshold of GHG emissions can obtain this label. A comprehensive communication campaign should inform the general public about this label and its requirements.

3. In the long term, the agency should be provided with the necessary tools to monitor the certificated organisations and businesses in order to control their adherence to the requirements.

4. The agency should furthermore evaluate whether on EU level tax rates can be decreased for eco-friendly companies and businesses.

5. To facilitate communication between citizens and authorities, the agency should provide a bottom-up platform for civil society and NGOs for ensuring eco-friendly proper advertisement.

By fulfilling the aforementioned tasks, the agency could help resolving the problem of greenwashing and progressively setting higher standards of sustainability for advertised products. Furthermore, the public platform will separate official institutions with direct bottom-up communication and will give citizens the possibility to complain and control advertisement.

3. Reclaiming the existing advertising space with awareness campaigns about the environmental impact of consumption

One of the key issues that have been highlighted in the present policy paper is the lack of information, the lack of trust in information and the lack of awareness regarding the issue of green-washing, sustainability and consumption of goods, services and products.

Therefore, we believe that it is of the European responsibility to fund, implement and enforce an awareness campaign for these issues.

In light of our previous observations, we recommend the following actions to be taken:

1. Designing information campaigns aimed at reducing consumption and raising awareness about sustainability, green-washing and how to consume properly at the global scale

This shall be done by reaching out to local, national and global NGOs and activist groups to ensure cooperation at every level, and designing together an ambitious, efficient and far-reaching campaign, adapted at the local level.

This campaign should contain precise, accurate and science-driven information validated by the European agency as described as in Recommendation 2, and validated by the independent group (NGO/Activist group) in question.

2. Mandating the use of disclaimers about consumption, sustainability and greenwashing on ALL advertisement

This shall be done in the form of short and efficient awareness messages in order to inform and remind the potential consumer reached by the advertisement of good practices, green-washing, responsible consumption and sustainability. Such disclaimers shall be legally required to be printed, showed, displayed and communicated on every advertisement published on any support and media, including but not limited to, print, television, radio, mobile, internet and social media advertisement.

Similar disclaimers are already legally required in different countries for several products, when advertising is not prohibited altogether, regarding high

sugar content products, alcohol, tobacco, medicine, betting services among others. The industry and institutions being familiar with such disclaimers should facilitate their implementation and enforcement.

3. Reclaiming the support and areas currently lent to advertising in publicly owned spaces and media to display the awareness campaigns

Referring to Recommendation 1, the supports and areas currently lent to advertising in publicly owned spaces and media shall be used to display and communicate the awareness campaigns recommended in the above first recommendation.

This would ensure the public gains back trust in information in the public space and is no longer subject to false claims, greenwashing or misinformation.

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Youth Ambassadors of Cluster A

Oscar Peyre
Bohdanna Duma
Frida Mühlhoff
Karolina Pańko
Zoé Poupardin
Andrea Baumgartner
Jannis Krüßmann
Marlena Lindauer

Head of Cluster A

Jonas Nitschke
Andrea Baumgartner

Experts of Cluster A

Renata Dagiliūté
Krista Kupits

Data-Driven Energy Grids: Reducing the Energy Crisis

Abstract - Cluster B ''Sustainability and Digital System''

What's the point of deploying more cars when the road is full? Similarly to a traffic jam, electric grids sometimes are suffering from bottlenecks, and cannot transport all the electrical renewable energy that is being produced. We propose to optimise the capacity of transmission lines by using data to be able to utilise cold weather as natural cooling for the systems which allows for higher load flows.

Current electricity grids are not adapted to transfer renewable electricity in an optimised manner, leading to the over-use of non-renewable energy. Where a line, running from a green energy source, cannot transport enough energy due to the worry of overheating, a polluting source might have to jump in and produce electricity to compensate.

We propose to optimise the existing electrical grid system by exploiting natural weather occurrences to cool the power lines and maximise the use of existing green energy plants. To do so, data about the weather, the wind and temperature needs to be collected and analysed, to ensure that the maximum amount of energy can be dispatched without risks. If applied, emissions can be lowered by utilising the status quo - and being consequently more cost effective than the implementation of alternative measures.

We are therefore going to expand on the possibility of utilising the already existing data about weather conditions and with minimal additional censoring infrastructure to be able to increase the electrical power transmission through the infrastructure while utilising the cold weather as a natural cooling system.

With this proposal, we call for policies to encourage unified inter-regional data collection and communication. Further, we request electric grid operators to cooperate with other grid operators, to aid optimal usage of renewable energy all across Europe.

Keywords: energy, smart grid, renewable energy, transmission line, voltage, energy production, electricity, wind energy, energy data collection, energy production monitoring, data visualisation, data science

I. Introduction

What's the point of deploying more cars when the road is full? Similarly to a traffic jam, electric grids sometimes are suffering from bottlenecks, and cannot transport all the electrical renewable energy that is being produced. We propose to optimise the capacity of transmission lines by using data to be

able to utilise cold weather as natural cooling for the systems which allows for higher load flows.

Current electricity grids are not adapted to transfer renewable electricity in an optimised manner, leading to the over-use of non-renewable energy. Despite renewable energy plants producing green electricity, in some cases, not all of it can be utilized at full capacity, due to overheating of an electric line. This then creates a necessity to use e.g. fossil fuels: Where a line, running from a green energy source, cannot transport enough energy due to the worry of overheating, a polluting source might have to jump in and produce electricity to compensate. Therefore, we produce more emissions than necessary; Green energy is being stopped from being used not due to a production difficulty or shortage, but due to transmission difficulties.

We propose to optimise the existing electrical grid system by exploiting natural weather occurrences to cool the power lines and maximise the use of existing green energy plants.

By optimising the existing electrical grid system, we are able to maximise the usage of already existing renewable energy plants. Not only would this lead to more effective use of already implemented infrastructure, but it would also allow to lessen the necessity of redispatch measures carried out with costly and unsustainable energy sources.

Therefore, emissions can be lowered by utilising the status quo - and being consequently more cost effective than the implementation of alternative measures.

In this proposal, we are therefore going to expand on the possibility to utilise the already existing data about weather conditions and with minimal additional censoring infrastructure to be able to increase the electrical power transmission through the infrastructure while utilising the cold weather as a natural cooling system.

II. Background

In this chapter, we first describe how the market-based dispatch of power plants work and then elaborate why this dispatch is not always physically implementable and must be re-dispatched by the Transmission System Operator. We end with why this is costly and environmentally harmful.
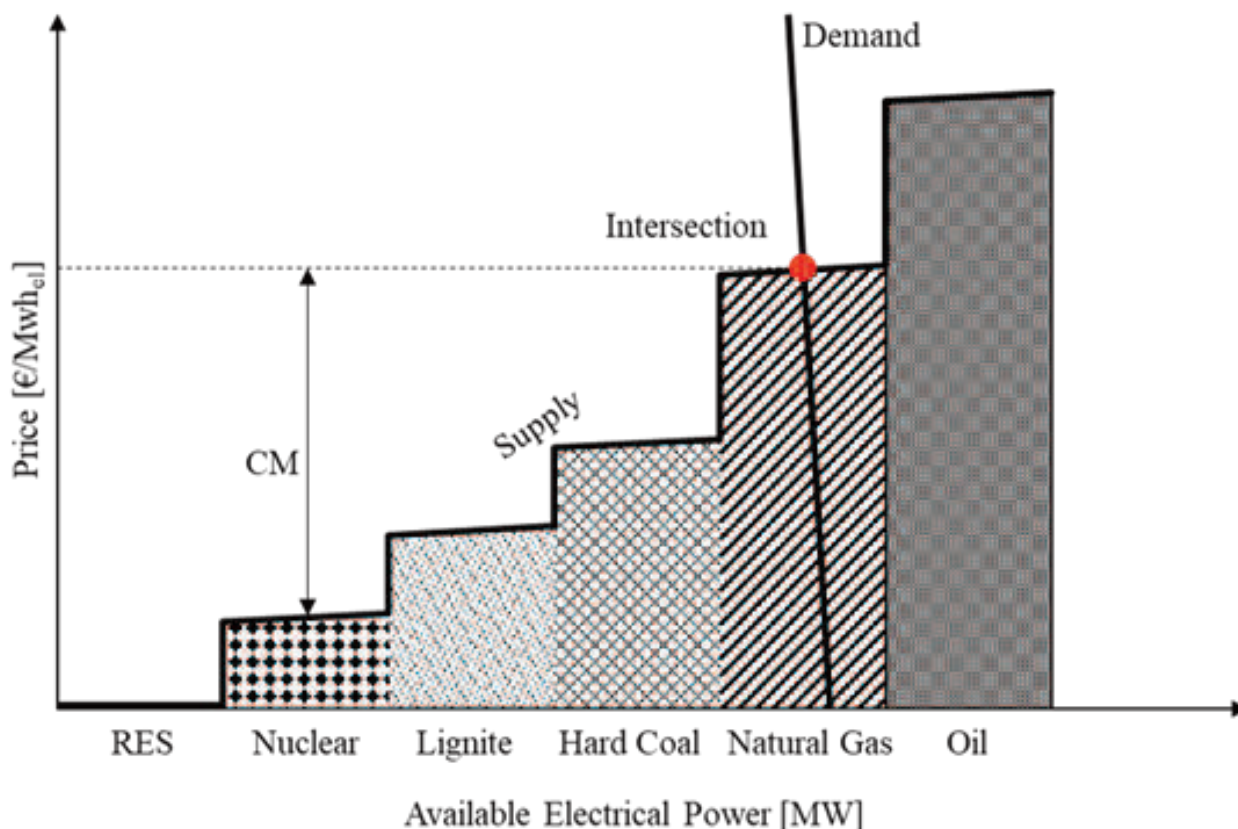

Figure 2-1: *Merit-order based pricing in electricity markets*

The dispatch of power plants in the European electricity system is determined by market-based principles, more specifically by the intersection of the demand curve and the supply curve. The supply curve consists of available generation capacities and their respective marginal costs, which reflects the assumption that a power plant operator would offer electricity as soon as he can get a positive Contribution Margin (CM). Costs for fuels and carbon dioxide (CO_2) emissions are the main drivers of a generator's marginal costs. As most renewable energy generators, like wind or solar, do not have to pay for any fuels nor CO_2 allowances, their marginal costs are close to zero [9]. The demand curve shows the power that consumers demand at a certain price. Figure 2-1 illustrates how the price in electricity markets is formed by combining simplified supply and demand curve characteristics. The power plants left of the red point are being dispatched.

The market-based dispatch of power plants is, however, not always physically implementable as certain transmission lines would get overloaded. This is particularly the case if all producing units are geographically located close to each other.

In these cases, Transmission System Operators (TSOs) have to overcome these congestions through remedial action, most prominently so-called redispatch. These are measures with which TSOs alter the dispatch which previously arose at the electricity market based on the short-term operating costs as outlined above. TSOs request one or more power plants before a bottleneck to reduce their generation (negative redispatch) and one or more power plants behind the bottleneck to increase their generation (positive redispatch) to resolve the bottleneck. Figure 2-7 shows the process of a redispatch schematically. The TSO requests one power plant to reduce its power output and the other one to increase its power output. This alters the power plants' dispatch that was previously decided in the market.

Redispatch is necessary in many countries in Europe to keep the electricity system in a safe operation condition. The necessity for redispatch in Germany is mainly caused by a lack of transmission capacity. The main driver for this is the uneven distribution of generation capacities and loads. While renewable generation capacity with low marginal costs is disproportionately located in the North, load centres are more concentrated in the South [19]. However, existing generation capacities in the South, particularly hard coal, natural gas power plants, have higher marginal costs, resulting in a posterior position in the merit-order. Consequently, the market determines that disproportionately generators in the North are dispatched to cover the zone's load.
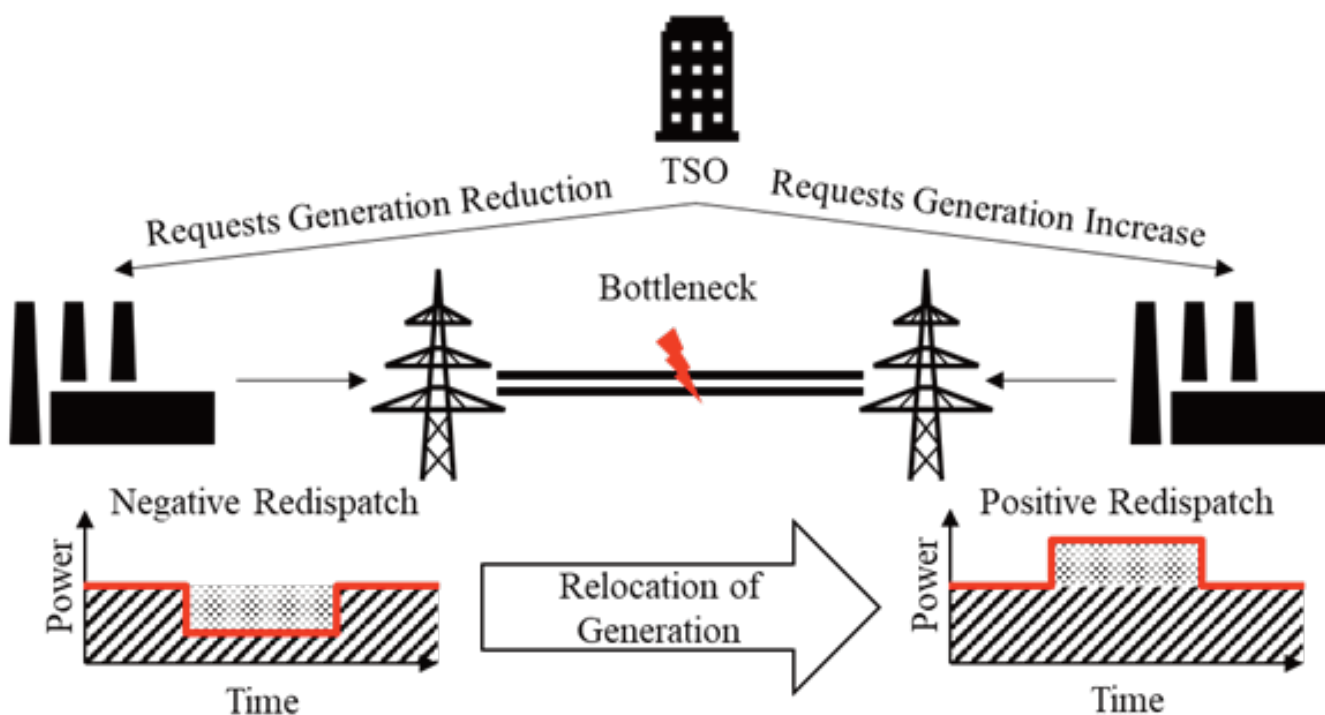

Figure 2-7: *Schematic illustration of negative and positive redispatch*

This high necessity of redispatch is bad due to two reasons: First, it is very costly. In Germany, the total costs for congestion management accounted for 1.2 bn €. The figures for 2022 are not yet published but it can be assumed that the costs due to the exacerbated fossil fuel prices sharply increased. Second, redispatch is environmentally harmful as quite often wind turbines are curtailed and thermal generation is ramped up.

While massive investments in the transmission system are made, it is questionable if the speed of grid extension is high enough to cope with required speed to make the energy system climate-neutral. Hence, next to grid investments, additional measures become necessary to reduce the need of redispatch and thereby reduce both, the curtailment of wind and societal costs for electricity.

III. Solutions

In this part, we will discuss our proposed solution briefly in detail.

Electrical overhead lines that transport electricity from plants to cities and communities are limited in the amount of electricity they can transport. If more energy is dispatched into the line, the heat it creates leads to the line to expand, and therefore hang lower. Due to safety reasons, the line should not hang too low, and therefore, there is a limit on how much electricity can be dispatched through it.

Due to the limited capacities to transmit electricity, there is a limit on the dispatch of energy from wind powered generators in the northern parts of Europe, such as the northern German regions and the Baltics.

As we already know, that this phenomena will become more frequent due to the concentration of renewable energy production in the northern region, there is an urgent need to increase the maximum power transferred in the North-South grid.

As heating is the main reason to limit the electricity dispatch, more energy can be transmitted if the line is cooler - for example, during cold weather conditions. By collecting and analysing weather data, the use of the power grid can be further optimised, allowing for more renewable energy to be transmitted without the worry of the overhead line expanding to hang dangerously low.

This is called Dynamic Line Rating (DLR) and relies on live data collection. That means, to put this strategy in practice, a significant database imported from weather stations, local sensors on the power lines and predictive models must be put together to execute this process safely.

This has already been implemented at a certain level in Germany, Belgium, France and other European countries. In that sense, what we propose is to scale up those already existing strategies, so Germany and central European nations can take advantage of the full potential of renewable energy production and reduce the need for fossil fuel based energy sources.

IV. Further consideration

1. Status-quo:

The main input data needed to implement the project is straightforward enough: temperature data. For Europe, we have the European Centre for Medium-Range Weather Forecasts (ECMWF) and the German ICON-EU model by the Deutscher Wetterdienst (DWD) - these datasets are used both for present monitoring and future modelling.

The second main input is wind behaviour (speed, direction), mainly at a height of 100m - which is the usual height of wind turbines and transmission lines - and differs considerably from wind behaviour on the surface due to friction.

Also, long-term aggregated temperature and wind data from Copernicus, the International Energy Agency (IEA), and the European Environment Agency (EEA) are useful for a bigger picture (and as input for models), as well as the European Wind Atlas, a joint academic database developed by 30 partners from 8 European countries between universities and weather research institutes.

2. Future considerations:

Additional investments in power grids are unavoidable, but they are lengthy and costly. The solution we propose is a short-term and cost-effective solution to better utilise the existing infrastructure by using data in addition to the required investments.

The proposed solution is only one piece of the larger puzzle and there are other methods that need to be used to stabilise the transmission network in Europe.

Inevitably, more transmission lines will have to be built, usually from north to south, as renewables, as described, are more likely to be found in northern regions near the sea or even offshore. As explained, the North Sea and the Baltic Sea play a central role in this. With heavy industry primarily located in southern Germany at least for Germany the most energy currently is needed in these parts. Because of this storage is key for this region.

Another important task is to make efficient use of the available energy. Therefore, electronic devices and appliances need to be energy efficient. With the advent of electric vehicles and the electrification of many areas of life, savings are hard to come by, so efficiency should be the focus.

Apart from that, smart use would also be a piece of the puzzle. This means that electricity should be used heavily by households and businesses, especially during off-peak hours when demand is below average. For example, doing the laundry at night when prices are cheaper and demand is not too high. This also applies to companies that can shift high energy consumption to night shifts, especially through Industry 4.0 and automated processes.

V. Call to action

Electricity production and dispatching is a complicated process that is handled by both public and private actors, tightly interconnected across different states and countries within the EU. For our proposed solution to work, to optimise the electric grid through data most efficiently, cooperation between these actors is required.

Therefore, the inter-regional data collection ought to be unified and communication should be aided.

Further, the electric grid operators need to be urgently recommended to collect the data and cooperate with other grid operators to improve the energy usage for all European citizens.

By drawing from shared data, the optimisation of the power grid can be furthered and the use of renewable energies can be elevated further.

VI. Future Possibilities

As shown, data can play a key role in stabilising the transmission systems in Europe. However the proposed solution for transmission systems is only one area where data can help. With Data and intelligence the entire electricity supply can be leveraged. With weather data the millions or Solar panels and all kinds of renewable energy sources can be together with Artificial Intelligence easily managed and forecasted.

The data are already used in order to choose the best location for new wind & solar parks. In the end such a system should be integrated in a smart grid where all energy suppliers and users are included like solar & wind power, nuclear power plants, industrial plants, cities & communities as well as private houses and electrical vehicles.

VII. Conclusion

In this proposal, we have laid out the issue of non-optimised electric grid usage: A problem that little political energy has flown into. By applying a data-driven solution, the existing power grid can be further optimised, to maximise the usage of renewable energies in the short-term.

To achieve this, electric grid operators need to be encouraged to collect e.g. weather data, and cooperate with other grid operators across Europe. By drawing from shared data, the optimisation of the power grid can be furthered, leading to more green energy consumption and less emissions.

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Youth Ambassadors of Cluster B

Simona Jakaitė
Eduardo Larrubia da Silveira
Felix Kaminski
Josias Knöppler
Cassandra Grützner
Evelina Barbanti
Germano Tietbohl-Martinelli

Head of Cluster B

Andreis Gustavo Malta Purim

Experts of Cluster B

Ali Arshad
Lauma Zihare

Creating a sustainable digital future: Reshaping the value chain of rare earth elements and precious metals for mass consumer electronics

Abstract - Cluster C "Sustainability and Nature"

Our growing mass consumption of personal electronic devices, such as smartphones, is placing a great pressure on the environment due to the reliance on rare earth elements (REE) and other precious metals. The value chain that entails the mining, processing, use, and disposal of these elements leads not only to the destruction of ecosystems and the exploitation of human labour but also to the precarious dependence on unreliable strategic suppliers like China. As part of the wider sustainable transition, we must thus re-evaluate the value chain.

We follow a comprehensive approach examining the value chain of REE and precious metals from an ecologically, economically and socially sustainable perspective. We propose changes to the acquisition of new REEs and precious metals and the product design of electronic devices, as well as establishing an effective and inclusive right-to-repair policy and greater obligations for recycling.

Keywords: recycling, rare earth elements, value chain, sustainability

I. Introduction

Modern electronic devices, such as mobile phones, contain more than 40 elements of the periodic table, including multiple Rare Earth Elements (REEs), but only a fraction of these are recycled (UNEP, 2013). One third of the 60 most economically valuable metals are recycled at rates greater than 50%, but for REEs the recycling rates are tremendously lower at below 1% (Atwood, 2012).

What are the economic, political, and environmental impacts of the use of REEs and other precious metals for the production of electronic consumer goods sold in Europe? And what could be done at the European Union level to mitigate the associated effects by making the value chain more sustainable? To answer these questions, this policy paper is structured as follows: The first chapter outlines the importance of REEs in modern society as well as the many social, economic, and political impacts. The second chapter consists of various proposals aimed at improving the environmental footprint of electronic devices along the entire value chain.

Our work is aimed at enhancing Sustainable Development Goal 12 on responsible consumption and production patterns (United Nations, 2017).

II. Why is the current handling of REEs and precious metals a problem?

Thanks to their "incredible technological utility", REEs and precious metals are crucial components of many devices indispensable for today's consumer society (Atwood, 2012). Individual consumer goods, such as mobile phones or laptops, contain rechargeable batteries that rely on precious metals like lithium for electric conductivity (US Department

of Energy, 2017). Important end uses of REEs include the production of magnets built into harddrives, microphones, and headphones, as well as those used for LED displays (Marscheider-Weidemann et al., 2021). Given the projected electrification of modes of transport and energy production systems, the need for those elements is projected to rise significantly in the coming decades.

REEs and precious metals are key for a transition towards a green economy, but their current use, along the whole value chain, is far from sustainable. While REEs and precious metals are relatively abundant in the Earth's crust (US Geological Survey, 2021), these concentrations are seldomly high enough to be mined. The first step, the extraction of REEs, involves altering ecosystems through the logging of forest to access drilling spots and the mining process itself involves the use of acids to separate the metals from the ore (Bonifacio and Clarke, 2016). The result is toxic mud, which often contains traces of radioactive material, which must be stored in artificial ponds to prevent the contamination of soil and groundwater (Bai et al., 2022). The lack of sufficient environmental standards (or their implementation) in many producing countries - including China - as well as protective measures for labourers increases the damage done to both the environment and human beings (Earth.org, 2020). Furthermore, shipping REEs around the world for processing causes additional CO2-emissions. Given the way electronic consumer goods are designed and constructed, their lifespan is rather short (seldom less than a couple of years). Because repairing these products is generally not economically viable or desired by customers and producers, the devices and the REEs and other precious metals within them are thus disposed of.

Aside from the environmental and social impacts, the REE and precious metal industry has been dominated by one main producer - China. With a global market share of around 65% which amounted to 168.000 metric tonnes rare earth oxides in 2021 (US Geological Survey, 2021), China has been the leading producer of REEs since the 1980s thanks to its superior processing capacities at highly competitive prices and the largest known reserves worldwide (Voncken, 2016). Even when mined elsewhere, REEs are almost exclusively processed in China via solvent extraction, the most common separation method given that there are just a couple of processing plants outside the country (Jacques et al., 2014). Therefore, Europe has developed a strategic dependence on one main provider, China, which has a history of poor environmental and human rights standards related to the mining industry within the country (Kaimon, 2014), as well as current violations by Chinese owned mining corporations that operate in other parts of the world (PREMICONGO, 2018). China has also engaged in unfair trade practices and overcapacities which have made it challenging for this industry to develop in a competitive way outside of China, leaving the EU reliant on an unpredictable and unfair trade partner (Eurometaux, 2021). Europe's dependence on REE imports originating from China thus puts its economic development and political stability at risk and might make it susceptible to blackmail. Policy makers got a first taste of this during the REE crisis (2009-2013) that involved a sudden increase in prices caused by a limit on exports imposed by China.

III. Proposals for a smaller environmental footprint along the whole value chain

To reduce the environmental impact of every-day electronic devices, it is necessary to take a look at the whole value chain. This encompasses the extraction of materials and the product design, as well as the ways to increase the longevity of the product and the materials it contains via repairing and recycling. This chapter's aim is to present proposals for each step of the REE and precious metal value chain.

1. Acquisition of new REEs and precious metals

The EU has just experienced the consequences of relying on one main producer of natural resources with the Russian invasion of Ukraine and the subsequent energy crisis, and it is now time for the EU to become more resilient and self-sufficient with the REEs and precious metals industry to avoid a similar situation in the future. We propose that the EU diversifies their suppliers by partnering and supporting mining companies outside of China, such

as the US based companies Rare Element Resources and UCore Rare Metals and the Australian based company Lynas Rare Earths (Chang, 2022). Additionally, the EU ought to develop their own domestic refining facilities to decrease dependence on the dominant refining facilities based in China and increase the opportunity to source raw material from countries other than China (Venditti, 2022). Finally, we recommend the EU build resilience by building strategic REE and precious metal reserves in a similar way to their building of strategic reserves for chemical, biological and radio-nuclear emergencies (ECHO, 2022).

Due to the destruction of terrestrial mining and the impacts on human rights, one suggestion has been to mine the deep seabed - an environment, which has been perceived as alien to life for a long time (Kim, 2017; Miller et al., 2018; Feichtner, 2019; Greenpeace, 2019). In recent years, however, we have come to understand that the deep seabed is teaming with a variety of unique life, often endemic to the areas they inhabit (Lodge et al., 2014). We know that deep seabed mining will have a negative environmental impact to an unknown extent, including biodiversity loss, ecosystem destruction, noise pollution and vibrations, sediment plumes, changes in chemical characteristics of the water column, invasive species due to intentional and unintentional relocation of species, release of sequestered carbon negatively impacting climate change, negative effects on fishing industries, leakage of methane gas, increases in ocean acidification, and the release of toxins and contamination from mining processes (Kim, 2017; Miller et al., 2018; Greenpeace, 2019; WWF, 2020). Because of the unknown nature of the deep sea, as well as the known likelihood of environmental impacts, we recommend the EU takes a precautionary approach to the use of the deep seabed and implement a moratorium on all mining related activity within this domain. Currently, Poland, Germany, France, Belgium, Bulgaria, Slovakia, and the Czech Republic among other non European states have been granted exploration licences to scout out the potential for deep seabed mining (ISA, 2022). We propose an immediate halt to all further action in relation to these contracts, and that no EU states apply for new licences with the International Seabed Authority. When new information becomes available in the future, the topic of deep seabed mining can be revisited.

2. Product design

Manufacturers allegedly design products with a purposely shortened lifespan to increase repeat revenues. While it is often hard to prove such practices, there have been some class action lawsuits e.g. Apple that ended in out-of-court settlements (Ecoconsumers, 2021). In regard to this legal issue, we urge the EU to look into legal possibilities to sanction such planned obsolescences on a broader scale and work together with lawyers and consumer protection authorities and organisations

We strongly support the proposals of the EU Commission to require 80% of the battery capacity after 500 resp. 1000 charging cycles in case the battery is not exchangeable.

However, we encourage the EU legislation to go even further by adopting a directive on modular design and banning digital devices that do not live up to these standards of interchangeability and standardisation. For instance, smartphones with non-exchangeable batteries would be banned in the European market. In return, this pushes the manufacturers towards creating more sustainable products which must not be fully disposed of as soon as the component with the shortest lifespan is faulty but instead this part can simply be replaced. Attention must be paid to the connectors, fasteners, joints and the availability of spare parts. For more detail, we advise the EU to follow scientific guidelines and principles established in the EU Prompt Research project (Dangal, 2020).

Moreover, we place emphasis on the principles of transparency and information. In the process of purchasing a new electronic device, it is necessary that the customers have easy access to information in order to base their consumerist decision on facts, such as the average runtime and the wear and tear of the battery. Uniform labelling on the energy efficiency, the materials used in the composition of the product and expected useful life - the amount of time that an item is estimated to function - would be an assist in educating customers.

The European Commission (2020a) proposed a regulation to increase recycling rates of industrial batteries - as those used in electric cars -, the resusage, the use of recycled raw material as well as

the disclosure of used materials in form of a product passport. We support this proposal and would like to see a similar concept applied to batteries in consumer electronic devices.

We also think that the standardisation of compounds used in consumer goods would be a feasible approach to facilitate the recycling of End-of-life devices. Because of the broad variety of different compositions the current recycling often leads to so called downcycling, i.e. the original quality of the material is not reached and thereby might not meet the criteria for its intended purpose. Thus we assume that the limitation to a certain number of standardised compounds will increase the quality of the recycled material.

3. Right to Repair

In the sustainability and circular economy debate, the motto "Reduce, reuse, recycle and repair" is well known, even though it is questionable whether all users have the right tools and knowledge to do this.

It is a widespread tendency that consumers break, throw away, and buy products again. In order to break this unsustainable chain, recently the European Union has included its right-to-repair policy in strategic documents with a specific section related to the electronic sector: the European Green Deal (European Commission, 2019), the New consumer Agenda (European Commission, 2020b) and the New Circular Economy Action Plan (European Commission, 2020c). New updates and implementation about this policy should come up by the end of this year. This regulation is in force since 2021 and mainly involves that producers create home appliances and, in general, electronic devices easy to repair even by non-experts.

Some advantages of the right-to-repair are a tendency, which gives to consumers the chance to fix by themselves their electronic devices, so the high repair costs and the long time to do it should be eliminated. This regulation creates an awareness pathway with the goal to make the circular economy a reality. Many researches have highlighted that circular economy and, implicitly, the right-to-repair produces additional employment (Doran, 2018) and it also strengthens the social economy (Gore, 2022). The increase in employment growth in the repair and recycling sectors is matched by a decrease in the mining and fossil fuel sectors (Club of Rome, 2020). Therefore, we demand that the right-to-repair should be more inclusively legislated and thus be applicable to personal electronic devices.

4. Recycling Responsibilities

Recycling all the components of electronic devices including REEs and other precious metals is crucial on the way to establishing a circular economy and to reaching sustainability. Some major metals of electronic devices like copper are already being recycled on a large scale. However, in these material-centred recycling processes many minor components like REEs, being part of complex mixtures of compounds, get lost (UNEP, 2013) Recycling methods for REEs exist on laboratory-scale and are constantly developed. So far, they are not economically viable (Ryen and Fortkamp, 2016).

In order to promote recycling of REEs and other precious metals, we propose to establish quotas of recycled REEs and other metals that need to be used in the production of new electronic devices, and sanctions for all companies not adhering to them.

With regard to the circular economy, it is important to understand that broken electronic devices and End-of-Life products are no waste but precious resources (European Union, 2022). Only that way the discarding of electronic waste can be prohibited. By recycling the REEs contained in electronic devices in the EU, a domestic resource pool of REEs could be created. This would decrease the EU's dependence on China, and ensure the supply of producers in the EU requiring REEs, especially in times of crisis.

We propose to build a centralised EU recycling system with recycling facilities for electronic devices. Recycling will become economically viable more easily if there are only a few large recycling facilities across the EU provided with a large amount of material from all EU member states. That way the electronic devices of member states with smaller populations can also be recycled. The individual recycling plants should be specialised on different chemical recycling processes and be supplied with material of the required composition. Modular design of electronic devices, which has also been proposed in this paper, will facilitate dismantling and

distributing parts of electronic devices of different chemical compositions to different recycling facilities. Digital product passports will help to develop and adjust the recycling processes to be as efficient as possible. To close the cycle, the recycled elements can be sold to and used by the producers to meet the proposed quotas.

IV. Conclusion

The current use of REEs and precious metals is unsustainable and needs urgently to be improved in order to ensure a healthy environment, less exploitation of humans and an autonomous European Union, which is free of strategic dependencies. To address the full value chain we proposed four recommendations:

- more diverse and sustainable acquisition of REEs
- a recycling oriented product design
- a more inclusive right-to-repair
- the development of an effective EU recycling system for REEs.

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Youth Ambassadors of Cluster C

Chiara Ferri
Selma Cafferty
Alexandra Ehresmann

Sarah Dhiel
Caecilia Lucius
Saara Mia Sarapuu

Head of Cluster C

Leonard Eckhoff

Experts of Cluster C

Franziska Lederer
Steffen Dierlich

Sustainable Democracy for a Sustainable Environment

Abstract - Cluster D "Sustainability and Democracy"

Our paper aims to present the reasons why we need to strengthen democratic systems in Europe in order to achieve more appropriate decision-making processes regarding climate policy. We focus on youth in particular; not only because this paper is the outcome of a youth conference, written by high school and university students, but also because we claim that youth participation is missing from politics, in terms of inclusion, interest, and possibilities. While representative democracy favors the participation of older generations, younger generations are more affected by the climate crisis. This is an imbalance we want to tackle.

Our objective is to develop political instruments for younger generations to express their opinion that is then taken into account by national governments. For that, we propose to organize a youth citizen assembly. While citizen assemblies (involving all age groups) have been widespread for a long time and known as an important instrument for deliberative democracy, we realized that assemblies targeting especially people under 30 years old have not been commonly used. We claim that such a youth citizen assembly could be an ideal tool to raise awareness about climate-related issues as well as to foster the participation of young people in decisions about climate policies. This is especially important because these policies impact in the first place their future lives and hence we find it crucial to give younger generations a possibility to shape climate policies.

Our model of a youth citizen assembly involves 100 randomly selected participants representing the youth of a given society by using quotas. They come together once a month over the course of six months to get input by experts, discuss on selected topics and try to find compromises and propositions. The overall outcome of the assembly can be a law framework that is then handed over to the national parliament. We claim that while the parliament is not obliged to adopt the propositions, they must read and discuss them and provide an explanation in case a proposition is rejected.

Keywords: deliberative democracy, citizen assembly, youth political participation, climate policies

I. Description of the context and problematization

Our governments are failing to tackle climate change. No country, whether in Europe or worldwide, has yet implemented a suitable plan to meet the goals of the Paris Agreement and to limit global warming to 1.5 °C (UNFCCC 2022). In consequence, our governments are failing us - the youth.

One of the reasons why current climate policies are frighteningly unambitious might be that they are mostly developed by older generations sitting in parliaments, not as much affected by climate change as younger generations. We argue that by

including the youth in the decision-making we could see policies more appropriate to the urgency of the climate crisis.

While we doubtlessly acknowledge democracy as the best political system, we should not hesitate to address its current flaws: The under-representation of young people. In terms of climate change, this is not only a pity, but an actual danger. Our parliamentary democracies share certain characteristics, making it hard for the youth: Hierarchical structures in political parties require you to work your way up - this often takes years. Young people go through education, not allowing them to "work" in politics such as adults can do (IPU 2016). Young people are regularly not taken seriously due to a lack of experience. The average age of an MP in Estonia is 51 years, in Germany it's 47 (IPU Parline 2022).

Therefore, we suggest a new instrument in decision-making: A citizen assembly of young people discussing, developing and assessing climate policies. This shall serve as a supplement and counterweight to older generations in the parliament. By enabling a representative group of young people to have a say, we might be able to make decision-makers more aware of the urgency of the climate crisis.

While fostering more sustainable policies, we also believe this is an easy tool to make our democracy more sustainable: Giving young people a platform to be heard can reduce the disenchantment with democracy and strengthen democratic values in the long term.

Thus, the policy recommendation we thrive to give in this policy paper evolves around the following research question: **How can governments use youth citizen assemblies to promote more appropriate decision-making in climate policy?**

II. Theoretical considerations on citizen assemblies

Why citizen assemblies? How are citizen assemblies a good tool for participation?

Citizen assemblies have been around for more than 2000 years, as they were an important tool for direct participation in democratic decision-making in Ancient Greece. Due to this long historical tradition, they can be considered as an essential part of contemporary democracy as they provide an additional check on government policymaking and allow for engaging more citizens in politics.

Citizen assemblies are a forum for citizens to raise their voice, share their concerns and offer constructive feedback to government officials in order to achieve better policy making. Their debates are based on independent and diverse opinions from a representative sample of the population and their recommendations are presented transparently, making the citizen assemblies an empowering tool to raise interest in public affairs (Merkel et al. 2021).

As citizen assemblies are a direct form of political discussion, they are able to offer supplementary solutions to the shortcoming of our current democracy. They focus on finding long-term answers to urgent problems such as climate change instead of coming up with short-term policies (Merkel et al. 2021).

Consideration about only including youth

Inclusion of the youth in the citizens assemblies presents advantages and drawbacks that should be assessed in order to maximize the output of these initiatives. First, it addresses the current issue of political aversion and disinterest by offering an institutionalized platform for the youth to express its opinion. Greater balance between the population is brought as decision makers tend to belong to an older generation. Second, recommendations formulated by young people can give new perspectives to decision makers and enable them to grasp the urgency and eco-anxiety felt by the younger generation. Aforementioned, the youth feels and is the most concerned by the issues of climate change and usually does not feel understood by its leaders. Nevertheless, including youth can be a source of lack of expertise and experience that might lead to bold or non-realizable proposals, consequently it would need to be assessed prior to the assembly for a comprehensive understanding of the dyna-

mics and actors involved in climate policy making (Welsh 2022).

How do citizen assemblies (CA) foster political inclusion?

The participation in citizen assemblies is based on random selection, allowing for a representative sample of the population. With this selection procedure, a diversity of opinions is ensured. The representativeness in decision-making can raise trust and interest in politics, motivating even more citizens to take part. Citizen assemblies can overcome the problem of 'democratic fatigue', pushing for a system where decision-making is for the people and by the people (Merkel et al. 2021).

How can it offer more effective solutions to make climate change policy?

Youth citizen assemblies will most likely offer effective solutions, mainly due to the greater incentive of the involved population to act. For that they will be willing to focus on long term policies that are realizable as they will be the one living through the outcome of the implemented legislations. Youth might also bring new perspectives and solutions linked to new ways of living - such as digitalization - since they have been used to a fast evolving society.

III. Discussion and assessment of case studies

1. Ida-Viru noorte kliimakogu

The Ida-Viru Youth Climate Association is part of a project implemented in cooperation with twenty European non-governmental organizations as part of the 'Climate action by European citizens helps development', funded by the European Union.

The climate conference took place over three days in 2021, in the county of Ida-Virumaa. From all the 16-29 year olds living in the county, 40 were randomly selected. The chosen ones participated in discussions and evaluated the counties' energy transition plans and, when making proposals, the main focus was on how to reach a climate-friendly Ida-Virumaa and what needed to be done to achieve the desired result. The proposals of the Ida-Viru noorte kliimakogu are to be accepted by the Ministry of Finance headed by the Minister of Regional Administration and the Union of Local Governments of Ida-Viru (Kliimamuutused 2022).

In total, 42 proposals were made across five separate groups. The proposals were reviewed by scientists and representatives from the Ministry of Finance who gave feedback to the proposals based on their effectiveness, legal context and how the proposal would fit into the framework of the just energy transition. After consulting with the given experts, a total of 27 proposals were decided on by the youth assembly (Kliimamuutused 2022).

The assembly was the first of its kind in Estonia. Since then, a youth citizens assembly also took place in May of 2022 in the city of Tartu.

2. Climate Assembly UK

In contrast to the exclusively regional oriented citizen assembly in Estonia, the Parliament in the UK organized a country-wide citizen assembly in the beginning of 2020, the 'Climate Assembly UK'. The question discussed was how the UK can meet its legally binding target to reduce greenhouse emissions to net-zero by 2050. The four sessions took place over six weekends in the spring of 2020 though the fourth session had to be canceled due to the Covid-crisis (Climate Assembly UK 2020).

The British Parliament chose six designated Committees of affected policy areas as authority over the Climate Assembly and provided a budget of £520.000.

The 110 members were collected by sending out 30.000 letters and creating a pool of possible participants by registration. After that, random stratified sampling was used as a tool to select members representative of the British population (16 years +) using age, gender, educational background, ethnicity, location, area (rural/urban) and attitude towards climate change as criteria.

To ensure a broad turnout of participants, they were paid for their time spent at the sessions; childcare and a fully accessible venue were also provided.

The first weekend consisted of an introduction to climate change, where different experts gave input on various topics. The presentation of balanced evidence was assured by four Expert Leads, an Academic Panel and an Advisory Panel to the organizers of the assembly.

The results of the assembly were presented to the Committees and served as a basis for detailed work on the recommendations, as well as being thoroughly discussed in the House of Commons. Broad process evaluation was undertaken by two academics and the Centre for Climate Change and Social Transformation of the University of Cardiff evaluated the information on climate change that was presented to the citizens (Climate Assembly UK 2020).

This Climate Assembly serves our recommendation as an example because it took place on a national level, had a climate-related topic as its focus and most of the organizational criteria we are going to propose in our recommendations were met (control of balanced evidence, accessibility, representative selection etc.). The target groups differ, as we want to limit our members to the young generation, which was part of the concept in the Estonian project.

These examples show that citizen assemblies concerning climate issues have successfully been implemented in the past in different countries. It shows that professional organization and preparation are crucial to ensure adequate representation and fruitful outcomes. The results were accepted by national governments and form a good understanding of the public opinion concerning a certain topic. The long term political effect of these projects is yet to be determined, but through experience it has already become clear that civil society is interested in such formats.

IV. Policy recommendation: our model of a youth citizen assembly

1. Participants (size, selection, promotion)

The aim of the citizen assembly is to give young people an instrument to equally participate in climate politics, since they are the most affected but not well represented. As in the Estonian example, we would suggest an age limit from 16 to 29 years old, because they fit the prior description the most (Kliimamuutused 2022). While doing that, it can not be the goal to only represent already engaged, well situated youth, but to reflect the entire young generations.

Regarding the size, we recommend 100 young people, since this has proven itself to be able to represent society while still being organizable (Electoral Reform Society 2019). Young people shall be randomly selected. The best way to do so shall be chosen by experts, to ensure that everybody gets a chance. This selection, however, shall be based on quotas to ensure representativeness. Gender, age, place of residency, income level of parents and/or themselves could be relevant criteria.

While the selection is random and can therefore not be influenced, we nonetheless argue that this citizen assembly should be accompanied by widespread promotion. The society, old and young, should know about this new instrument of climate policymaking. It might have a signal effect that firstly, young people are now heard, and secondly, that the way we did climate policies was so far unsatisfactory and massive change in decision-making and a new era of climate policies are on the way.

2. During the assembly (duration, input by experts, voting, division into sub-committees)

The assembly itself would contain a cycle of five sessions over the course of six months. This could mean for example a meeting during one weekend per month. We would recommend organizing one session between one and two days. This would enable all participants to be engaged with the respective topic and to work on policy recommendations more in-depth; yet we also consider that one or two days per month are neither a too heavy workload to be expected by the participants, so that their willingness to participate in the project would not be endangered.

The sessions would be moderated by facilitators and the participants would also get several inputs and insights by experts who would be present. We recommend hereby to strongly consider the balan-

ced information provided by the experts to avoid manipulation. This can be evaluated for example through an advisory panel.

The participants would be divided in sub-committees on several questions or topics defined beforehand. The sessions would then continue with discussions among the participants, aiming to find compromises on the stated topics on a consensual basis. The final decisions for setting up the outcome would be voted through a ⅘-majority (meaning that 80 % of the participants would need to support the idea).

3. Financial aspects

We don't aim to reflect too much on budgetary aspects since the goal of this paper is to provide an inspiration for organizing a youth citizen assembly in one or more European countries (or federal states). We would leave therefore the more practical aspects of how such a project can be financed to the governments of the respective countries. In our experience and impression, if the willingness and readiness of organizing any project is real, financing it shall not be a problem and the state budget would probably find a way to contribute to the organization.

Therefore we do not want to elaborate on the budget plan and spendings, yet we would like to emphasize that similarly to the Climate Assembly UK, we would advocate for a salary for each participant on the days they showed up and worked in the citizen assembly to create an incentive to be engaged with the project. Besides that, we would recommend providing free food, accommodation and childcare during the duration of the assembly.

4. After the assembly (outcome, legal framework, outreach, evaluation)

The expected outcome of the youth citizen assembly is a law framework (besides that we are also in favor of providing an extensive report on the work with an executive summary on the main points and requests). The aim of the law framework is to ensure that it has an effect on the national level. While we doubt that a 'normal' report would further impact politicians and even the public, the law fra-

mework could be handed over to the national or federal parliament.

Even though we would not make the law framework binding because we acknowledge that the youth citizen assemblies do not necessarily have to replace the role of the parliament, we still advocate for a mandatory plenary reading and discussion. Furthermore, we would request the parliament to issue an opinion on the law framework and, in case it is rejected, to provide an explanation why it cannot be implemented.

Media outreach and the information of the public is another important aspect. Here the cooperation with local journalists, social media presence and media representation is essential to reach out to citizens, to put pressure on politicians if needed and to spread the concept of the project.

Finally, after the first cycle of the youth citizen assembly, an extensive evaluation is necessary to assess the impact, the weaknesses and the further opportunities that might shape the future organization of such assemblies.

V. Outlook: adjustment to different countries and on European level

To be able to make citizen assemblies successful in different countries it is necessary to make adjustments according to various factors. First of all, the political structure of a country's policymaking must be taken into consideration. For example, in a federalist state such as Germany, it would be more realistic to hold assemblies in different federal states whereas it is easier for smaller countries to organize them at the national level. In some questions, it would, of course, be necessary to bring the results of the federal assemblies together if the topic refers to national law. Secondly, we might need to consider the different demographics in the process of choosing participants. In larger countries, the population might be more diverse and more quotas must be in place to ensure a fair pool of participants.

Planning even further ahead, it would be advised to involve the European Union in this project. Institutions of the European Union could make suggestions and offer help in planning, organizing or even

funding the citizen assemblies directly. This would make it easier to implement them for all the member states and strengthen democracy in the whole European area.

Hosting a citizens' assembly on the European level could be a future goal, but is currently off the table for us due to the difficulties that would encompass creating a resolution that'll be optimal for all member states. Instead, the European Union should, as mentioned above, promote and help to develop citizens' assemblies in all member states to create a strong basis for action being taken by the citizens directly. Should this prove effective, a potential citizens' assembly on the European level would be of greater use in the future than currently, due to the present lack of awareness by the general public and missing experience in certain countries regarding citizens' assemblies.

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Youth Ambassadors of Cluster

Jan Dachs
Duncan Barker

Anna Gruber
Emily Kohl
Otto-Taaniel Kärblane
Evaelle Dhainaut

Head of Cluster D

Anna Lelkes

Experts of Cluster D

Lukács Hayes
Inese Vaivare

German Baltic Youth Foundation
Am Berge 35
21335 Lüneburg
Germany

@dbjugendwerk on Facebook & Instagram
@europeshallhearyou on Instagram