FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

Reducing Russian energy dependance but REPowering the EU's Green Transition?

A case study on the extend of Climate Policy Integration in REPowerEU.

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Abstract

The Russian Invasion of Ukraine has caused a massive disruption in policy and politics. It has painfully made clear that ordinary expansionism and warmongering are still present in the 21st century. It has also painfully made clear how dependent the European Union is on Russian imports, and Russian fossil fuels in particular. While the EU sends weapons to Ukraine to help the people defend themselves, it still finances the Russian war machine by buying energy fuels necessary for its economy. In order to stop this dependency, the Commission, at the request of the European Council, launched REPowerEU. This encompassing plan aims to end energy dependency by focusing on accelerating the Green Transition. This is unique, as in past crises, climate policy objectives were usually pushed aside, caused by a focus on short-term goals. However, this time, EU-policymakers have managed to not only keep climate objectives in place, but even strengthen them. Targets and measures to increase the share of renewable energy, to save energy, to become more energy efficient, to increase to use of solar energy and to ease administrative procedures for renewable energy plants have all been strengthened or introduced. We also see that REPowerEU will increase investments in gas infrastructure. This is understandable from a short-term perspective to reach energy independence and to make sure that Russia has no more money to wage war. Even so, our analysis will show that policymakers seem too eager to invest, and current goals will result in an excess of LNG infrastructure of almost 250 bcm by 2030. On the topic of LNG, we see that policymakers should be cautious with increasing the demand of this type of gas, as it emits far more GHG's compared to pipeline gas. However, this does not show up in EU-statistics, as this excess of emission happens in the production phase in countries outside the EU. In order to determine just how much of the climate policy objectives are integrated into REPowerEU, we will use the concept of Climate Policy Integration (CPI). We will use the conceptual framework of Dupont (2016), looking at CPI in both the policy process and output. For our analytical framework, we will combine the framework of Dupont (2016) and Kettner and Kletzan-Slamanig (2020). Our analysis shows that REPowerEU contains high levels of CPI in the policy output and medium-high levels of CPI in the policy process. This is different from other studies, where CPI is mostly higher in the policy process. However, we argue that this can be explained by the very short time frame REPowerEU was drafted in, as this hampered the involvement of external pro-climate stakeholders. On the other hand, our results show that the recognition of the severity of climate change and of the interrelationships between the energy sector and the climate policy objectives has never been higher. This has manifested itself in the Commission becoming a pro-climate stakeholder. Our analysis shows that a lot of effort on achieving climate policy objectives has been lacking the past decades. However, it will also show that if we start now and put in a lot of effort, we can still achieve the EU's objective of becoming a climate neutral continent by 2050. The acceleration of the Green Transition by REPowerEU offers hope, though more measures are still needed.

Nederlandse Samenvatting

De Russische invasie van Oekraïne heeft de wereld door elkaar geschud. Het heeft pijnlijk duidelijk gemaakt dat expansionisme en oorlogsvoering nog steeds aanwezig zijn in de 21ste eeuw. Het heeft ook duidelijk gemaakt hoe afhankelijk de Europese Unie is van Russische import en van Russische fossiele brandstoffen in het bijzonder. Terwijl de EU wapens stuurt naar Oekraïne om de mensen te helpen zich te verdedigen, financiert het de Russische oorlogsmachine door brandstoffen die noodzakelijk zijn voor de economie te kopen. Om dit te stoppen, heeft de Europese Commissie REPowerEU gelanceerd op vraag van de Europese Raad. Dit uitgebreide plan moet een einde aan de energieafhankelijkheid maken door te focussen op de versnelling van de groene transitie. Dit is uniek, aangezien klimaatdoelen in vorige crisissen normaal opzij werden geschoven door een focus op kortetermijndoelstellingen. Echter, deze keer zijn beleidsmakers er niet alleen in geslaagd om de klimaatdoelstellingen te behouden, maar om ze ook te versterken. Doelen en maatregelen om het aandeel van hernieuwbare energie, energiebesparingen, zonne-energie en energie-efficiënte te verhogen en administratieve procedures te verkorten werden ingevoerd of versterkt. Aan de andere kant zien we ook dat REPowerEU investeringen in gasinfrastructuur zal verhogen. Dit is te begrijpen vanuit een kortetermijnperspectief om energieonafhankelijkheid te bereiken en om er voor te zorgen dat Rusland geen geld meer heeft om oorlog te voeren. We zien echter dat politici te graag willen investeren en dat de huidige maatregelen zullen leiden tot een overcapaciteit van 250 bcm LNG-infrastructuur tegen 2030. Beleidsmakers moeten ook voorzichtig zijn om de consumptie van LNG te verhogen, aangezien dit soort gas veel meer broeikasgassen uitstoot in vergelijking met gas uit pijpleidingen. Dit wordt echter niet getoond in de statistieken van de EU, aangezien het verschil in uitstoot gebeurt in de productiefase, die plaatsvindt in landen buiten de EU.
Om te bepalen hoeveel van de klimaatdoelen nu precies geïntegreerd zijn in REPowerEU, maken we gebruik van het concept *Climate Policy Integration* (CPI). We zullen ook het theoretisch kader van Dupont (2016) gebruiken, daarbij kijkend naar CPI in het beleidsproces en de beleidsuitkomst. Voor ons analytisch kader combineren we de werken van Dupont en Kettner en Kletzan-Slamanig (2020).
Onze analyse toont dat REPowerEU een hoge mate van CPI heeft in de beleidsuitkomst en middelhoge mate van CPI in het beleidsproces. Dit is verschillend van andere studies, waar CPI meestal hoger is in het beleidsproces. We argumenteren dat dit verschil verklaard kan worden door de hele korte tijdspanne waarin REPowerEU werd opgesteld. Dit bemoeilijkte de betrokkenheid van externe *pro-climate stakeholders*. Doch, onze resultaten tonen aan dat de bewustheid van de klimaatproblematiek en van de linken tussen klimaatbeleid en energiebeleid nog nooit zo groot is geweest. Dit manifesteert zich in de Commissie die een *pro-climate stakeholder* is geworden. Onze analyse toont ook aan dat er de voorbije decennia te weinig gedaan is om de klimaatdoelstellingen te halen. Echter, we tonen ook aan dat, als we nu starten en we veel inzet leveren, we nog altijd het doel van de EU kunnen bereiken om een klimaatneutraal continent te worden tegen 2050. De versnelling van de groene transitie door REPowerEU biedt hoop, hoewel meer maatregelen nog altijd nodig zijn.

Word of thanks

Writing a thesis is like finding your way through a maze. Sometimes, you walk in circles, other times, you reach a dead end. Luckily, I was not alone when walking through the maze. My mom, dad and sister where always there to support me. I fondly remember my mom and dad bringing me plates full of fruit to eat while I was working on my thesis. After all, a healthy mind is necessary to find your way out of the maze. I also have to thank my friends, who always supported me. In particular, I would like to thank Oleg and Gerben, whom I have asked countless times of their opinion on formatting and interpreting sources. They were also kind (or crazy) enough to proofread my entire thesis. They were my two trusted companions who walked with me through the maze.

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Confidentiality and Integrity

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The author declares that the research was conducted in accordance with the rules governing scientific and academic integrity. He has read, and acted in accordance with, the Code of Ethics of the Faculty.

List of abbreviations

Bcm: billion cubic meters of natural gas
CCS: carbon dioxide capture and storage
CO_2: carbon dioxide
CPI: Climate Policy Integration
DNSH: do not significantly harm
EBPD: Energy Performance Of Buildings Directive
EED: Energy Efficiency Directive
EGD: European Green Deal
EPI: Environmental Policy Integration
EU: European Union
GHG: greenhouse gas
IEA: International Energy Agency
IEEFA: Institute of Energy Economics and Financial Analysis
IPCC: Intergovernmental Panel on Climate Change
IRENA: International Renewable Energy Agency
LNG: liquified natural gas
Mtoe: million tonne of oil
NGO: non-governmental organisation
p.p: percentage point
RED: Renewable Energy Directive
RRF: Recovery and Resilience Facility
QMV: qualified majority voting

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Chapter 1: Introduction

On 24 February 2022, war returned to the European continent. The Russian Federation invaded Ukraine after months of military build-up, seeking the "demilitarization" and "denazification" of its neighbour. The invasion, labelled a 'special military operation' by Russia, has been condemned and declared illegal by a host of nations around the world.

The impact of this invasion goes beyond Ukraine. It has led, among others, to a disruption in the energy markets. For example, before the invasion, 40% of EU gas consumption came from Russia. This is even higher for some member states, like 65% for Germany (van Halm, 2022). This has caused a rise in energy prices. In order to combat these high energy prices and decrease its energy dependency on a warmongering state, the EU introduced REPowerEU. This is a package of policy measures building on already existing proposals of the Green Deal and 'Fit for 55'. These are plans to reach the objectives mentioned in the EU 'European Climate Law', officially known as Regulation (EU) 2021/1119 (2021). This regulation legally binds the EU to achieve its climate objectives. This includes both the climate-neutrality to be achieved by 2050 set by the Green Deal and the 55% net GHG reduction set by "Fit for 55" (Directorate-General for Climate Action, n.d.-a). The aim of REPowerEU is to increase the EU's effort to achieve these targets faster in order to become energy independent from Russia.

These climate objectives have been entrenched in EU legislation, but also in international agreements. The EU has committed itself to the Paris Agreement. Adopted in 2015, this international treaty aims to keep the rise in global temperature to 1.5°C above pre-industrial levels. It is described by the UN as a landmark in the climate change process, as it is the first time a binding agreement has been reached by all nations to combat climate change (United Nations Climate Change, n.d.). Additionally, the Sustainable Development Goals framework from the United Nations also influences EU legislation. For example, REPowerEU stresses the importance of a 'just' energy transition were everyone is included. This corresponds with SDG 7 (achieving a just energy transition).

REPowerEU contains actions related to energy policy and climate policy. However, the EU has only limited competence in energy related matters. Article 194 of the Treaty of the Functioning of the European Union states the EU has competence to promote energy saving, development and renewable energy use and ensure functioning of energy markets and energy supply (European Union, 2012). However, member states have the right *"to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply*" (European Union, 2012, p.88).

REPowerEU builds further on already existing or already proposed legislation. We already mentioned the 'Fit for 55' proposal and the Green Deal. However, it also builds further on legislation introduced to rebuild the EU economy after the Covid-pandemic. This pandemic slowed down the economy. The EU seeks to address this by introducing Nextgeneration EU. This is a recovery fund to let Europe recover from the pandemic (Directorate-General for Communication, n.d.-a). A part of this fund is the Recovery and Resilience Facility (RRF), which will be used to finance REPowerEU.

The President of the European Commission (hereafter, Commission), von der Leyen, has claimed that REPowerEU "*will be the speed charging of our European Green Deal"* (von der Leyen, 2022 in Wanat & Hernandez, 2022). Hence, it aims to be a bridge between climate policy and energy policy. However, we do not yet know exactly how much of the climate objectives are integrated in REPowerEU. This will be the focus of this thesis. To this end, we will use the concept of Climate Policy Integration (CPI). This concept is used in literature when researching how climate objectives are used and integrated in other policy fields. Thus, this research seeks to provide an answer to the question: *To what extend is Climate Policy Integration present in REPowerEU and why?*

Chapter 2: Literature review

Introduction

In order to assess to what extend CPI is present in the REPowerEU policy package, we need to have a clear understanding of the concept of CPI itself. This chapter will provide a literature review to better understand climate policy integration. The origins can be traced back to the term policy integration, which was defined by Underdal in 1980, in his seminal paper "Integrated Marine Policy: What? Why? How?". Around 10 to 15 years later, the concept of Environmental Policy Integration (EPI) arose. However, there was no clear agreement on its meaning. Lafferty and Hovden (2003) put forward a strong interpretation in 2003 which was built upon the work of Underdal and proved to be a seminal work. However, tension between the normative and positive meaning of EPI, its lack of support and the vagueness of the concept meant that real results were lacking. Thus, Climate Policy Integration (CPI) was developed as an answer to those shortcomings. This narrower and more specific concept has since been researched by different scholars who provided the literature with an array of assessment framework of CPI.

We will start with a discussion about policy integration and Underdal's paper (1980). Then, we will discuss EPI's definition and development. Subsequently, we will talk about its failures. Moving on, we will talk about CPI and its corresponding literature. We will end with a discussion about the different frameworks that exist in literature to assess CPI's presence in policy.

The beginning: Policy Integration

In his Integrated Marine policy paper, Underdal (1980) set out to research the increased demand for an integrated marine policy. He states that this increase can be explained due to the increased and diverse use of ocean space. This has led to different systems or stakeholders interacting with each other, whereby an exchange of externalities takes place. This can cause friction, but it can also mean that stakeholders can propose coordination systems or jointly decide on interdependent activities. Integrated marine policy is one of the proposals that was made around 1980. However, Underdal states that these suggestions are not clear on what is meant by the 'integrated' part and why integration is needed. His article aims to address these issues.

As to what policy integration means, Underdal (1980) mentions three requirements, namely comprehensiveness, aggregation and consistency. He links these requirements to the policy process. Comprehensiveness is linked to the input stage, aggregation to the process stage and consistency to the output stage. Comprehensiveness is defined as the extent to which the consequences of a policy decision are recognized as decision premises. A decision premises can be interpreted as something that has to be taken as given when a decision is made (Luhmann, 2018).

Aggregation is the second requirement. Underdal defines this as: *" ... the extent to which policy alternatives are evaluated from an 'overall' perspective rather than from the perspective of each actor, sector etc."* (Underdal, 1980, p. 161), whereby an overall perspective is described as a search for the most Pareto-optimal outcome or solution.

Consistency is the third requirement Underdal (1980) defines. This requirement has both a vertical and a horizontal aspect. Vertical refers to the agreement between different policy levels. For example specific actions taken "on the ground" which are in agreement with the overall strategy and policy goals. Horizontal refers to the requirement that only one policy is followed by all actors. The author gives the example of the opposite, an inconsistency, where a certain area is protected for its biodiversity by the ministry of environmental protection and declared by the ministry of defence as a test site for new weapons.

Thus, Underdal defines an integrated policy as:

> *"one where all significant consequences of policy decisions are recognized as decision premises, where policy options are evaluated on the basis of their effects on some aggregate measure of utility, and where the different policy elements are consistent with each other. In other words, a policy is integrated to the extent that it recognizes its consequences as decision premises, aggregates them into an overall evaluation, and penetrates all policy levels and all government agencies involved in its execution"*. (Underdal, 1980, p.162)

As to why policies should be integrated, Underdal (1980) states that the most general purpose is to improve the outcomes. But we have to ask ourselves why policy integration leads to improvement. According to the author, integration will lead to the internalization of externalities, which will turn into improvement. If policies are not integrated, then there will be fragmented decisions and there will be no overall perspective. This leads to externalities, which can have a negative impact on efficiency, effectiveness and the distribution of costs and benefits. Integration will remove these fragmented decisions and introduce an overall perspective because of its aggregation characteristic (ut supra). Thus, the negative impact of externalities can be reduced. This leads the author to define in what circumstances policy should be integrated. According to him, it should be integrated when different elements or stakeholders are interdependent or linked. By integrating policy, these links are not neglected.

So, while focusing on marine policy, Underdal (1980) pinned down a definition and characteristics of policy integration that would later be used by other scholars as a basis to define newer concepts such as EPI and eventually CPI.

Environmental Policy Integration

The concept of environmental policy integration (EPI) arose well before it was named as such. Different authors (Dupont, 2016; Jordan & Lenshow, 2008a, 2010; Laffert & Hovden, 2003) agree

that the Our Common Future report of the World Commission on Environment and Development in 1986 brought attention to the idea of EPI, without using the term itself. This rapport is better known as the Brundtland report and contained, next to its famous definition on sustainable development, the thought of EPI without actually naming it as such (Brundtland, 1987).

There exist multiple interpretations of the concept of EPI. Lafferty and Hovden (2003) put forward an interpretation based on the work of Underdal (1980). They use Underal's broad definition of policy integration (ut supra) as a basis and put emphasis on, and bias towards, environmental objectives. They argue that the without this bias, the concept would be meaningless. Thus, their two-folded definition of EPI reads as followed:

> *"– the incorporation of environmental objectives into all stages of policymaking in nonenvironmental policy sectors, with a specific recognition of this goal as a guiding principle for the planning and execution of policy;*
> *– accompanied by an attempt to aggregate presumed environmental consequences into an overall evaluation of policy, and a commitment to minimize contradictions between environmental and sectoral policies by giving principled priority to the former over the latter."* (Lafferty & Hovden, 2003, p. 15).

The first part of this definition is described by the authors as the part that refers to the integration principle (*incorporation of environmental objectives into all stages of policymaking in nonenvironmental policy sectors).* It is clear that the authors based this part on work of Underdal (1980). The second part of the definition is the crucial aspect that differs EPI from the neutral policy integration definition of Underdal. This part incorporates the bias towards environmental objectives (*giving principled priority to the former over the latter*). It is here that the authors argue that previous interpretation, where there is a balance between environmental and non-environmental objectives, are insufficient to cover the meaning of the term EPI.

This interpretation is described by Jorden and Lenshow (2010) as relatively strong and pro-environmental. While this interpretation would prove to be very popular among other EPI scholars, these two authors draw the attention to other, weaker and more balanced interpretations of EPI in their literature review on the concept (Jordan and Lenshow, 2010). Examples are the interpretation of Peters (1998), who merely speaks about coordination that has the three characteristics of Underdal (1980) mentioned above, Collier (1994) who proposes a search for 'win-win' solutions when making non-environmental policy choices and Liberatore et al. (1997) who speak about EPI as a notion of reciprocity between equal parties or objectives. As these 'weaker' interpretations proved to be less influential then the interpretation of Lafferty and Hovden (2003), we will not go into further detail about them. We merely mentioned them to show that there was some discussion in literature as to what EPI exactly means.

Horizontal and Vertical EPI

Besides providing the literature with a much cited definition of EPI, the work of Lafferty and Hovden (2003) also gives EPI two dimensions, one horizontal and one vertical. It is further studied in detail in a cross-country study by Jacob and Volkery (2004). They define the horizontal dimension as the one where a single unit or institution has the task to develop and coordinate integration strategies and overarching policy issues for all the governmental departments. Note that the word unit was used instead of department, as this unit can take on many forms. Most of the times it will be the department of the environment, but not always. It can also be the cabinet itself or a specially designed institutional body (Jacob & Volkery, 2004).

We speak about vertical EPI if a governmental department can choose for itself how environmental objectives are incorporated in its specific sectoral and non-environmental objectives. However, the department does need to report on these activities. The process of incorporating environmental objectives into sectoral objectives is known as 'greening' (Lafferty & Hovden, 2003).

EPI political support

EPI has received a lot of political support, like in the Brundtland report that was mentioned earlier. It has especially received support in the EU, where it was adopted into legal documents (Jordan & Lenschow, 2010). Dupont (2016) gives a comprehensive overview of EPI in her work. EPI was first introduced by The Single European Act (European Union, 1987). Here, it was cited that "*environmental protection requirements shall be a component of the Community's other policies*". (Article 130 r.2). Note how this objective is in accordance with the first part of the definition by Lafferty and Hovden (2003). EPI became even more developed and important with the Amsterdam Treaty, as this treaty proved a legal basis for EPI. Article 3c of this treaty stated that: "*environmental protection requirements must be integrated into the definition and implementation of the Union policies and activities(…), in particular with the view to promoting sustainable development"* (European Union, 1997, p. 25).

EPI's weaknesses

However, this legal basis proved insufficient to see effects of EPI in practice (Dupont, 2016). Jordan and Lenshow (2010) argue that this is caused by the tension between the normative (how it should be) and positive (what it means in practice) meaning of EPI . The ideals of environmental objectives being more important than the specific sectoral objectives was not followed by all policy actors. There was also a decline in the attention to EPI (Jordan & Lenschow, 2008a). In his work of 2009, Mickwitz and his co-authors also argue that EPI suffered from a lack of resources, efficient institutions and feedback mechanisms (Mickwitz et al. 2009). Last but not least, the authors argue that the concept of EPI is vague, which makes it hard for politicians and media to create awareness. This is in stark contrast with climate policy integration, which is a more narrower concept that is easier to understand. Thus, as an answer to the weaknesses (and what is called by some the failure of EPI), the concept of Climate Policy Integration or CPI arose in literature.

Climate Policy Integration

When the shortcomings of EPI became apparent, the concept of Climate Policy Integration arose. The work of Mickwitz et al. (2009a) mentioned earlier proposed a definition for CPI. Their definition is based upon both the definitions of policy integration and Environmental Policy Integration of Underdal and Lafferty and Hovden respectively. It reads as followed:

> *"- the incorporation of the aims of climate change mitigation and adaptation into all stages of policy-making in other policy sectors (non-environmental as well as environmental);*
> *"- complemented by an attempt to aggregate expected consequences for climate change mitigation and adaptation into an overall evaluation of policy, and a commitment to minimise contradictions between climate policies and other policies."* (Mickwitz et al., 2009a, p. 19)

The comparisons between all three definitions are evident. It is so evident that some authors argue that they merely replaced the word environment with climate (Adelle & Russel, 2013). They say that this leads to a weak interpretation of CPI.

Not all scholars viewed CPI as something different then EPI. Adelle and Russel (2013) state that CPI is often conceptualized as a component of EPI or as a concept related to EPI. Jordan and Lenshow saw it merely as "*yet another take on the integration problematique"* (2010, p.3). Here, the *integration problematique* refers to the weaknesses of EPI mentioned earlier.

Furthermore, weak and strong interpretations of CPI also exist, just like they do for EPI. Dupont (2016) sees CPI as different from EPI and opted for a stronger interpretation in her work on CPI in EU energy policy. This interpretation allowed for 'principled priority' of climate objectives over non–climate objectives, in both the policy process and policy outputs. We chose to follow this strong interpretation and the 'principled priority' standard , as it seems to have gained more support in the literature then the weaker one (see for example, Dupont & Oberthür, 2012; Dupont, 2016). Furthermore, most of the frameworks used to assess CPI use this strong interpretation, though not all of them. We will discuss both kind of frameworks further on.

Horizontal and Vertical CPI

Just like EPI, CPI does also have a horizontal and a vertical dimension. Mickwitz et al. define horizontal policy integration as: "*cross-sectoral measures and procedures by the government, or a governmental body, e.g. a commission, undertaken in order to mainstream or bring about a comprehensive integration of climate change mitigation (…)"* (Mickwitz et al., 2009a, p. 21). While they use a different phrasing, the authors essentially have the same interpretation of horizontal CPI as Jacob and Volkery (2004) have for horizontal EPI (ut supra). They both refer to one central actor (a special unit or the government itself) that takes action to coordinate policy integration.

For the vertical axis, Mickwitz and his colleagues (2009) make a distinction in vertical CPI within as well as between governmental levels. Vertical CPI within levels corresponds to the definition of Jacob and Volkery (2004) on vertical EPI (ut supra). Both refer to integration of climate policy into the actions of the departments under the supervision of the ministry. Vertical CPI in between governmental levels is defined as the integration in between many levels, like national, regional or local levels (Mickwitz et al., 2009a).

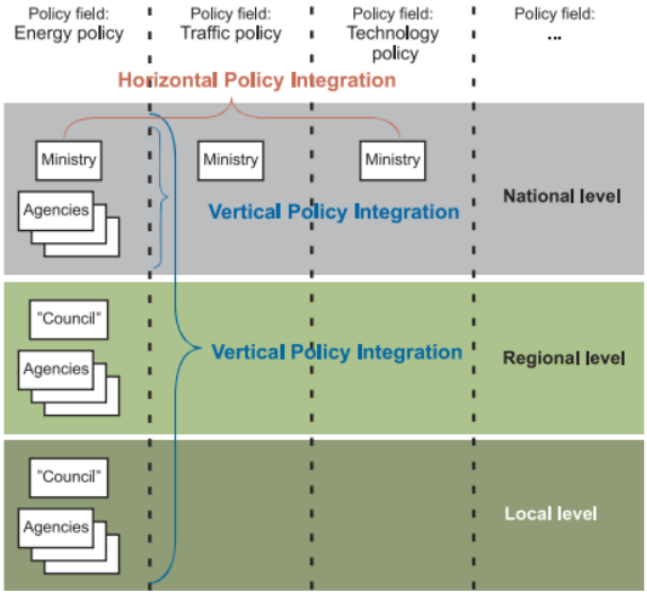

Figure 2.1: Horizontal CPI, Vertical CPI within levels and Vertical CPI in between levels (Mickwitz et al. 2009).

CPI as a policy process, policy output and outcome

In the literature, CPI (and EPI) are not only seen from a normative perspective, but also as both a policy process and a policy output. These approaches are often used in the studies we will discuss further in this chapter. When CPI is viewed as a policy process, it is viewed as an opportunity for innovation, an opportunity of learning (Mickwitz et al, 2009).

CPI can also be perceived as an output, where its is conceived as something that not only changes governments, but also the real world. Here, Adelle and Russel (2012) see another reason why CPI became more popular in literature then EPI. It is much easier to measure variables linked to climate change (ex. greenhouse gas emissions) , then to measure the state of the environment.

Lastly, CPI can be perceived as a policy outcome. This *"refers to actions taken by target groups in response to the outputs"* (Mickwitz et al., 2009a, p. 20). However, it is difficult to measure accurately, as an output is very rarely the result of policy output alone. After all, the outcome can also be affected by other variables. The actions are also often less tangible (Kettner et al., 2011).

Over the last decade, policy outcome has lost the interests of scholars. Leading scholars on CPI do not use it in there frameworks (for example see, Dupont & Primova, 2011; Dupont, 2016; Oberthür & von Homeyer, 2023). Other authors do mention it in their work, with the most recent being the research conducted by Kettner and Kletzan-Slamanig (2020). They conceptualized an outcome-oriented framework (see further). However, even though they call the framework outcome-oriented, their analysis itself is focused on policy output. Furthermore, they define policy outcome related to CPI in energy policy as the impact on emissions. Most other authors view this definition as CPI in policy output (for example, see Dupont, 2016)

Existing frameworks to assess CPI

There exist a number of frameworks designed to assess CPI. Mickwitz and his colleagues speak about five criteria, namely.

1. the inclusion of climate change aims in other policy areas
2. consistency of policies and instruments/minimization of contradictions
3. weighting of climate change aspects in case of conflicting policy targets
4. presence and use of ex ante and ex post evaluation requirements for climate change mitigation and adaptation impacts
5. adequacy of personnel, money, or time resources for CPI (Mickwitz et al., 2009a)

Like mentioned earlier, Mickwitz et al. take a rather 'weak' approach to CPI. This reflects itself in the frameworks they use. Scholars with a 'strong' interpretation of CPI put forward a different kind of criteria. Dupont and Primova (2011) use an analytical framework that builds upon both EPI literature and general theories of European integration (see chapter 5). They argue that this broader framework can explain the level of CPI in and across different policy fields. They also view CPI as something than can be expressed as a degree, though without mentioning it explicitly. CPI in a certain policy proposal or directive exists on a scale ranging from low to high. In order to measure CPI, they use separate methods for policy output and policy process.

For policy output, they use the concept of ideal CPI. Ideal CPI will be achieved if policies are in line with the established climate policy objectives. When the two the authors wrote their article, this meant a 80-95% reduction in GHG by 2050 (Dupont & Primova, 2011). Looking at policy output, we can then establish the gap between the policy outputs effectively achieved and the policy outputs achieved if there was ideal CPI. Giving this gap a score will then allow us to tell how high the level of CPI was (see table 2.1).

No CPI	Very Low	Low	Medium	High	Very High	Ideal/full CPI
0%	1-20%	21-40%	41-60%	61-80%	81-99%	100%

Table 2.1: Measuring CPI in policy output
(Dupont & Primova, 2011, p.5).

Dupont and Primova (2011) propose three indicators to assess CPI in the policy process. These indicators are:

1. *"assessment of the impact of the sector policy objectives on climate policy objectives*
2. *climate policy stakeholders (from outside the normal decision-making institutions in the EU) are consulted, take part, and are heard in the policy process*
3. *that climate policy advocates within the EU, such as DG Environment/DG Climate Action and the environment committee of the European Parliament, participate (as, e.g. (co) drafters of the legislation in the Commission or as (co-)drafters of the opinion(s) in Parliament) in the determination of policy"* (Dupont & Primova, 2011, p.4).

However, they state that these indicators are only some initial proposals, as their work mostly focused on policy output. We will see these indicators coming back in frameworks developed by other authors.

In order to explain the level of CPI, these two authors put forward four independent variables that explain this degree of CPI. These independent variables are:

1. the level of political commitment to climate policy and to CPI
2. the nature of the functional overlap between climate policy and the other policy field in question
3. the level of engagement of climate policy advocates and the level of procedural safeguards for CPI in the policy process
4. the institutional and policy context (Dupont & Primova, 2011)

Dupont and Oberthür (2012) use a similar set of factors to explain the levels of CPI. They only removed the *climate policy advocates* factor. Interestingly, they put forward a fourth factor that explains CPI in policy output, namely "*the extent of CPI in the policy process*" (Dupont & Oberthür, 2012, p. 230). Thus, they link the two possible viewpoints of CPI together.

Dupont (2016) proposed to measure CPI in the policy process and in the policy output separately. This links existing CPI literature focused on policy output to EPI literature which is more focused on policy process (Dupont, 2016). She also explicitly mentions viewing CPI as a degree, drawing on the work of Bryner (2012) to provide a theoretical ground for this viewpoint. This way, CPI is not viewed as something that either exists or not exists, but as something that can have varying levels in policies (Dupont, 2016).
For policy output, Dupont uses the same framework as in her work with her colleague Primova (ut supra). For the policy process, she looks at three indicators. These are:

1. Internal pro-climate stakeholders
2. External pro-climate stakeholders
3. Recognitions of interrelations with climate policy objectives (Dupont, 2016)

These indicators are then put in a table based upon the table used to measure CPI in the policy output. This table can be found in chapter 5 on operationalizing CPI. However, this table focusing

on the process is more qualitative in nature, as no numbers are used. Rather, different possible observations per criteria based upon the possible levels of CPI are used.

In order to explain the level of CPI, she uses four different variables, also based on her work with Primova. These variables are

1. Functional interrelations
2. Political commitment
3. Institutional and policy context
4. CPI in the policy process

Additionally, Kettner and her colleagues developed a framework specifically focused on measuring horizontal CPI. These criteria are

1. Political commitment
2. Nature of interdependencies
3. Weighting and resources (Kettner et al. 2012)

Together with Kletzan-Slamanig, Kettner developed a framework with emphasis on measuring policy output, though they give some criteria for policy output and policy outcome as well. These five criteria can be found in figure 2.2.

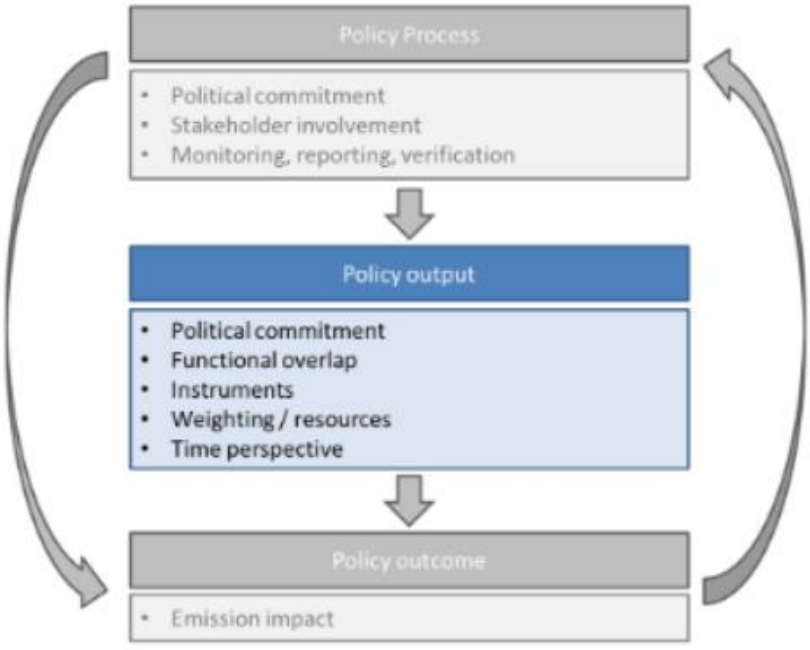

Figure 2.2: Framework Kettner & Kletzan-Slamanig (2020).

Thus, some variables appear across different frameworks. Political commitment, functional overlap and the involvement of internal and external stakeholders all seem to be important when researching CPI. We will use these variables when building our own framework. But first, we will briefly explain some policy context of REPowerEU.

Chapter 3: Context of EU climate and energy policy

As said earlier, REPowerEU builds on already existing policy packages. In order to better understand REPowerEU, we will briefly discuss these packages.

Green Deal

Understanding the need to stop the rising temperatures, the EU launched an ambitious initiative to become a global leader in the fight against climate change. The initiative is named the European Green Deal (EGD) and was presented by the European Commission led by President von der Leyen in December 2019. It combines a number of strategies, initiatives and legislative acts that need to transform the EU to a just, sustainable and inclusive society and economy (Fetting, 2020).
Giving a complete overview of every action and initiative proposed by the Green Deal would go beyond the scope of this thesis. We will briefly summarize the most important points. The figure below gives a good understanding of the reach and content of the whole Green Deal.

Figure 3.1: The European Green Deal
(European Commission, 2019).

At its core, the EGD needs to make a clean climate transition possible. The overall goal of the EGD is to achieve climate neutrality by 2050 (European Commission, 2019). Another important part of the Green Deal is the 'Fit for 55' package, which increases the EU's GHG reduction target from 40% to 55% (see further). However, one has to keep in mind that the EGD is not only focussed on economic issues, but also on social justice with its commitment to "*leave no one behind*" (European Commission, 2019, p.16) in the Green Transition. This has to be achieved by creating a Just

Transition Mechanism. The Green Deal also aims to raise EUR 260 billion of additional investments a year in order to achieve climate neutrality. This will be done by a Sustainable Europe Investment Plan (European Commission, 2019).

Related to Climate Policy Integration, Oberthür and Von Homeyer (2023) argue that the Green Deal expands CPI to virtually all policy sectors. They propose two reasons why this expansion happened. First, it is strengthened because the Green Deal "thickens" the policy mix across relevant sectors sets a guiding climate-neutrality target. Thickening of policy mix means an increase in different policy instruments. Second, the Green Deal introduces a principled priority of climate policy objectives. Other EU initiatives are not allowed to harm Green Deal initiatives (European Commission, 2019). Thinking back to the possible interpretations of CPI discussed in chapter 2, the Green Deal makes it clear that the Commission follows the strong interpretation of CPI.

Dupont and her colleagues argue that the EDG could be considered a critical juncture for EU climate policy (Dupont et al., 2020). A critical juncture is an important turning point and a key explanation of policy or institutional change. This can be in the form or an event or a choice made by policy makers. This turning point manifests itself in a causal effect on future events (Capoccia, 2016). However, the status of the EDG as a critical juncture, the effects of the pandemic on climate policy and the effectiveness of the EDG all depend on the implementation of the European Green Deal (Dupont et al., 2020), which is not yet completed.

However, the European Green Deal has not been without criticism. It has been met with opposition from both sides of the political spectrum. Greenpeace mentioned that, while the amount of policies was impressive, it would not be enough (GreenPeace European Unit, 2019) . On the other side, there is a fear that the Green Deal disadvantages EU industries and "*its go-it-alone transition to a carbon neutral economy will do nothing to stop global warming*" (Storm, 2020 p.4). Among scholars, there is also the critique that the Green Deal will fall short, especially in the area of sustainability. Eckert and Kovalevska (2021) give the example of managing plastic waste instead of preventing it. Thus, just like Dupont et al. (2020) mentioned, much will depend on the implementation on the Green Deal.

'Fit for 55'

In order to achieve the goals determined by the Green Deal, the European Commission has proposed a number of policy packages. One of these packages is the 'Fit for 55' package, which has to become a springboard to climate neutrality. It has the ambition to reduce net emissions by at least 55% by 2030. These goals are supported by a mix of policy measures. The Commission proposed this use of a policy mix, as regulatory policies and carbon pricing alone lead to high economic burdens and would not overcome market failures and non-market barriers (European Commission, 2021). The mix consists of pricing, targets standards and support measures across a range of policy areas. Figure 3.2 gives a comprehensive overview of these measures.

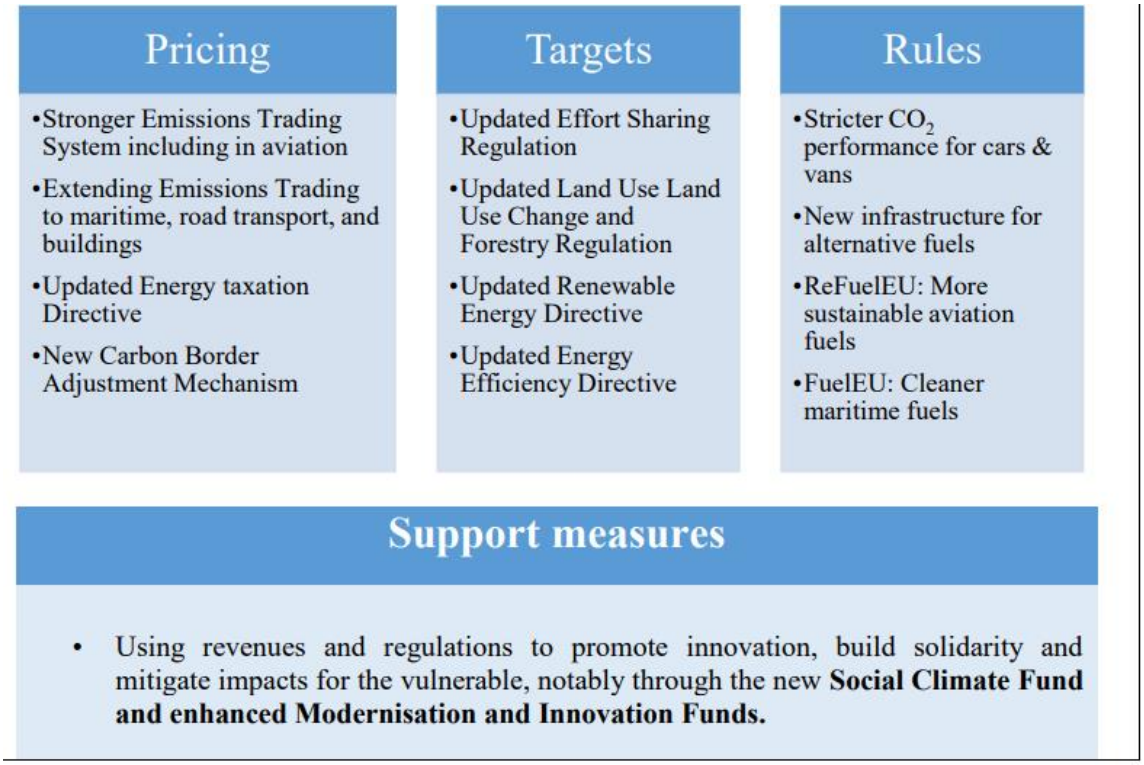

Figure 3.2: 'Fit for 55' Package: At a glance (European Commission, 2021).

Looking at the energy sector, we see that the 'Fit for 55' package introduces a significant number of measures related to this sector. This is understandable, as energy use accounts for 75% of the EU's emission. The transformations of the EU's energy system is therefore crucial in its climate ambitions (European Commission, 2021). In order to achieve its 2030 targets, a number of directives were proposed or revised. The Renewable Energy Directive (RED), which is a target-type measure, sets targets for the use of renewable energy sources. It was introduced in 2009 and revised in 2018 for the first time. Currently, a second revision is being considered by the Council (hereafter, Council) and the European Parliament (hereafter, Parliament). It is expected to be adopted in the first quarter of 2023 (Directorate-General for Energy, n.d.-a). The original directive established a target of 20% for the amount of renewable energy in the EU's energy consumption by 2020, which was increased to 32% by 2030 in the first revision (Directive 2018/2001, 2018). In the second revision, the new von der Leyen-led Commission proposes an increased 40% target in order to reach the goals set out by the European Green deal. However, this target was further increased to 45% in the REPowerEU plan after the Russian invasion of Ukraine (Commission, 2022).

The 'Fit for 55' package also plans the revision of other directives related to the energy sector. The 2021 proposal for a revised Energy Efficiency Directive (EED), another target-type directive, puts forward an energy efficiency-first principle for EU energy policy. It also introduces a target of 9% reduction of energy consumption compared to the targets introduced in the first revision of the EED. This revision in 2018 introduced targets to limit the primary energy consumption to 1273 Mtoe and

956 Mtoe[1] of final consumption by 2030 (Directive (EU) 2018/2002, 2018). Adjusted for Brexit, the targets are now on 1128 Mtoe and 846 Mtoe respectively (EU Monitor, 2019). The 9% reduction target means that overall energy consumption should not exceed 1023 Mtoe of primary energy and 787 Mtoe of final energy[2] (European Commission, 2021a). However, this target was also raised up to 13% in the REPowerEU plan, as "*saving and reducing energy is the cheapest, safest and cleanest way*" (Directorate-General for Energy, n.d.-b) to decrease EU's reliance on fossil fuel imports from Russia. This increase corresponds to 980 Mtoe in primary and 750 Mtoe in final energy consumption (Directorate-General for Energy, n.d.-b).

Additionally, the Energy Performance of Buildings Directive proposes a number of measures to achieve a 60% emission reduction rate in the building sector by 2030 compared to 2015 and to achieve climate neutrality by 2050 as determined by the Green Deal (Directorate-General for Energy, n.d.-c). The focus on buildings is understandable, as they are responsible for approximately 40% of the EU's energy consumption and 36% of energy-related greenhouse gas emissions. Examples of these measures are the introduction of renovation passports, increased quality and digitalization of Energy Performance Certificates, a gradual introduction of minimum energy performance standards and the obligation that EU countries must draw up lists of national financial measures to improve energy efficiency (Directorate-General for Energy, n.d.-c).

While scholars have acknowledged the 'Fit for 55' package as *"the most ambitious decarbonisation framework ever adopted by the EU"*(de las Heras, 2022, p.75), it is not free from critique. Due to the fact that the package has only been announced recently, no studies focusing directly on the impact of the package on the energy sector have been found. However, studies focusing on other sectors have not been overwhelmingly positive. For example, 'Fit for 55' measures taken to reduce energy consumption in the transport sector have some effect and indeed do address market failures (Ovaere & Proost, 2021). Nevertheless, they could still be improved by taking some more 'aggressive' measures, such as higher taxes on aviation and shipping. Also, a combined ETS[3] trading system with transport, building, industry and power production sections should be implemented, as the sectoral origins of carbon emissions do not matter (Ovaere & Proost, 2021). Additionally, Labelle and his colleagues argue that reducing household energy consumption as assumed by 'Fit for 55' could halt and even deteriorate human development in post-communist member states (LaBelle & al., 2022). There is also criticism on the second revision of the Renewable Energy Directive (ut supra), as this revision introduces measures to limit the use of wood as an energy

[1] Million ton of oil equivalent, a multiple form the SI-unit toe (ton oil equivalent). It is equal to the amount of energy created by burning one ton of oil. One toe equals 11.63 MWh (megawatt-hours) or 41.859 GJ (gigajoules).

[2] Primary energy consumption measures total domestic energy demands (including conversion losses). Final energy consumption measures what end-consumers actually use (Eurostat, 2021).

[3] The European Emission Trading System, set up in 2005, is a trading system where emitters can buy or receive allowances to emit GHGs. The total amount of allowances decreases over time in order to let total emissions fall (Directorate General for Climate action, n.d.-b) ETS is considererd a centerpiece of EU climate policy (Skjærseth & Wettestad, 2010).

source. However, these measures are taken top-down without understanding how the forest value chain and the wood market work in real life (Köhl et al, 2021). Following this trend, we could suspect that energy-related policies in the 'Fit for 55' are not perfect as well. Providing a definitive answer is not the aim of this thesis, but it could be inspiration for further research.

Next Generation EU & RRF

Another measure taken by the EU is the creation of Next Generation EU (NGEU). This is a recovery fund set up to let Europe recover from the pandemic (Directorate-General for Communication, n.d.-a). It has the objective to help member-states in their economic and social recovery caused by the virus.

As part of the NextGenerationEU plan, the EU created the Recovery and Resilience Facility (RRF) plan. The RRF is created in Regulation 2021/241. It aims to recover from the pandemic and to make the EU more sustainable, be better prepared for future crises, create jobs and support the Green and Digital Transition. The total budget amounts up to EUR 723.8 billion, of which 49.6% are loans and 50.4% are grants (Directorate-General for Communication, n.d.-b).

In order to get support from the facility, member states have to submit National Recovery And Resilience Plans (NRRPs) to the European Commission. Each plan has to provide an overview of reforms and investments to be carried out by end 2026. If the plans are approved by the Commission and the Council, countries will receive up to 13% of the total support to start the projects. In the second phase, member states have to provide annual or bi-annual updates on pre-set milestones. If these milestones are met, they receive more grants or loans. The facility is thus performance-based. The following image gives an overview of the working mechanism of the RRF.

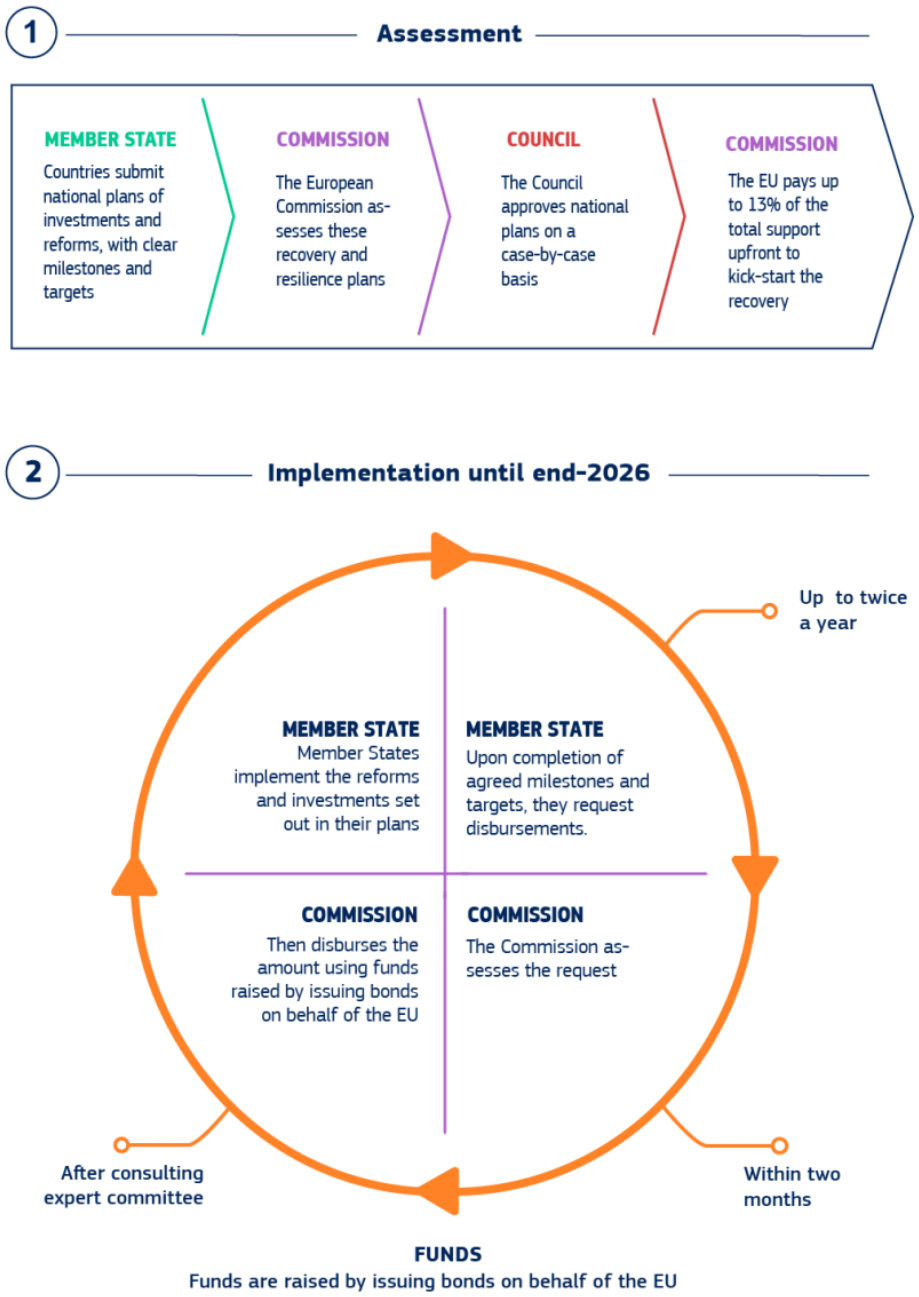

Figure 3.3: Working mechanisms of the Recovery and Resilience Facility (Directorate-General for Communication, n.d.-b).

Scholars have generally been positive in the development of the RRF. Watzka and Watt (2020) predict a decrease in public debt ratios and a raise in GDP of poorer southern and eastern member states. This would reduce the economic divergence in the Union. However, it mainly supports investments in national infrastructure. Scholars have argued that investments in cross-border European infrastructure projects are also needed (Creel et al., 2020).

Chapter 4: Methodology

This chapter will explain our methodology. We carried out a deductive single case study with REPowerEU as our case. Analysing CPI in the policy output was quantitative in nature, while analysing CPI in the policy process was qualitative.

For data gathering, we use triangulation from documents, news reports and interviews. In total, seventeen policy document directly related to REPowerEU legislative documents were consulted, numbering 400 pages in total. These were complemented with six documents from the RED, EBPD and EED numbering 1077 pages. From these six documents, the articles related to REPowerEU were consulted. Additionally 32 media reports were included in the analysis as well. These were selected by searching for keywords such as "EPBD, EED, RED, REPowerEU, RRF, Energy' on websites specialized in EU news such as EUractiv and Politico. An overview of the media reports can be found in the second part of the bibliography. Furthermore, we conducted three semi-structured interviews. We contacted sixteen people and pro-climate organizations for an interview. These were selected based on their involvement in REPowerEU. Of these sixteen contacted, three responded positively, one responded negatively and twelve did not respond. The interviews were conducted via WEBEX or Teams with full anonymity promised to the interviewees and were not recorded. The interviews lasted around 28 minutes each. Notes were taken during the interview and immediately completed after the interviews. These can be found in at the end of this thesis. Next to these qualitative documents, we also used quantitative documents such as the Eurostat Energy Dashboard and other Eurostat databases.

For the analysis of the document, we used the method of process tracing. This method was also used in the study of Dupont (2016). Process tracing is used in case studies and studies researching how causal processes work (Beach, 2017). Dunnig describes it as *"a procedure for develop knowledge of context, sequence or process"* (2014, p.5). Dupont (2016) starts her process tracing years before the directives she studies in order to gain a complete picture of the process. Unfortunately, starting years before REPowerEU is beyond the scope of this thesis. Therefore, we will limit ourselves to the actual documents of REPowerEU. We also did not code the documents, as the coding of more than 400 pages of documents and numerous media reports would go beyond the scope of this thesis. Furthermore, none of the studies we discussed in our literature review used a coding method.

The reliability of our research is strengthened by using already tested data gathering methods. Documents, news reports and interviews have been used by other authors of CPI-related studies to collect data. Our internal validity is strengthened by the fact that we use operationalizations used by other researchers. The conceptual framework has been used by Dupont (2016) and is in itself based on previous work. The analytical framework is a combination of already existing frameworks. Our external validity is hampered by the fact that we carry out a case study. Thus, our results cannot be easily generalized. Nevertheless, it will still offer interesting results within the related sectors.

Chapter 5: Operationalizing CPI (conceptual and analytical framework)

Now that we have an understanding of the concept of Climate Policy Integration, REPowerEU and the context it was created in, we can start to research to what extent CPI is present in REPowerEU and why. However, we still need to define exactly how we will measure CPI and how we will explain our results. This chapter contains our conceptual and analytical framework. Our conceptual framework explains how we will measure CPI. Drawing on the literature discussed in chapter 2 (in particular on the book from Dupont (2016)), we view CPI as a degree and make a distinction between CPI in the policy process and the policy output. CPI in the policy output is measured by using the concept of ideal CPI. CPI in the policy process is measured by looking at the involvement of internal pro-climate stakeholders and external pro-climate stakeholders and the recognition of interrelations by actors. Our analytical framework will provide an understanding why we measured certain levels of CPI in REPowerEU. For this framework, we use fives variables. We provide a theoretical background of these variables based on European integration theories and literature. The work of Dupont (2016) was also a notable inspiration for the analytical framework. The five variables are functional interrelationships, political commitment, institutional and policy context, time perspective and CPI in the policy process.

Operationalization choices based on literature

As mentioned in chapter 2, we will follow a strong interpretation of CPI. Therefore, we will also perceive CPI as a matter of degree, following the working methods of the scholars we discussed in that chapter. Furthermore, we will make a difference between measuring CPI in the policy process and the policy output. As seen in chapter 2, almost all existing frameworks make this difference. We will not use policy outcome, as this variable is used by a minority of scholars in literature. As mentioned in the literature review, policy outcomes refers to the action targets groups take in response to the policy outcomes (Mickwitz et al., 2009). It is operationalized by Kettner & Kletzan-Slamanig (2020) as the actual change in GHG emissions. As we follow the method of Dupont (2016), we will classify this as a part of CPI in the policy output (see further). It would therefore be unnecessary to look at policy outcome separately.

Furthermore, we will only research horizontal CPI. Side-lining the vertical aspect of CPI could be met with criticism from other scholars. However, we defend this decision with the following three arguments. First, REPowerEU is a policy package that is partly still in the legislative process. Therefore, not all member states have yet taken measures, so it is not possible to research what happens at the lower levels of government. Thus, we will confine our research to level 2 (the EU implementation level) of CPI as determined by Rietig (2012). Second, most research on CPI at the EU level does not make a difference between vertical and horizontal CPI or does not even mention it (for example, see Dupont, 2016; Oberthür & Von Homeyer, 2023). Third, cataloguing the

measures by national governments for the already approved legislation would be a considerable task that goes beyond the scope of this paper. However, this could be inspiration for further research. For the rest of this thesis, we will leave the of horizontal adjective behind when discussing CPI.

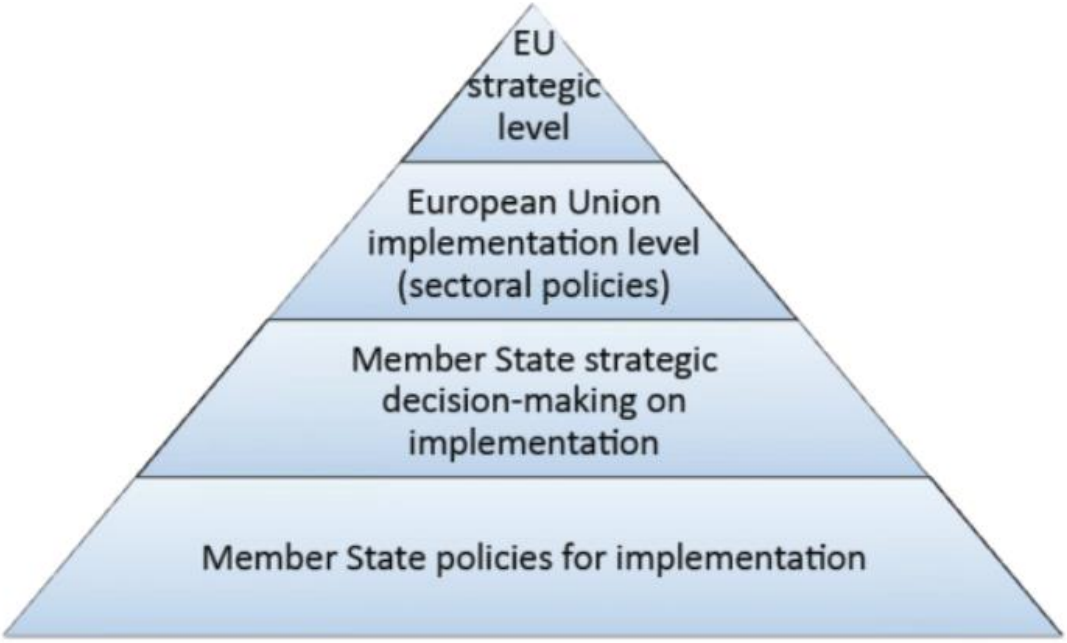

Figure 5.1. Levels of Climate Policy Integration in the European Union (Rietig, 2012).

Operationalizing CPI in policy output

In order to measure CPI in the policy output, we will use the concept of ideal CPI introduced by Dupont and Primova (2011) (see chapter 2). To recapitulate, ideal CPI will be achieved if policies are in line with the established climate policy objectives.

No CPI	Very Low	Low	Medium	High	Very High	Ideal/full CPI
0%	1-20%	21-40%	41-60%	61-80%	81-99%	100%

Table 5.1 Measuring CPI in policy output (Dupont & Primova, 2011, p.5).

We use this operationalizing because it is the most widely-used and tested model to date. Using the same *modus operandi* as other scholars would also allow us to compare our results with results of previous studies, be it on energy policy or not. This comparison could be used to understand the evolution of CPI in policy output within the EU's energy policy or to view in which sectors CPI is most prominently present. However, scholars should also take the context of each proposal and legislative procedure into account. Nevertheless, an in-depth study about a cross-sectoral comparison of CPI goes beyond the scope of this paper. This operationalization is also used by other authors in the field (see chapter 2).

Operationalizing CPI in policy process

In order to measure CPI in the policy process, we use the method used by Dupont (2016) in her research on CPI. She looks at three different indicators. These indicators were also proposed earlier by Dupont and Primova (2011). They are then plotted on a qualitative fivefold scale ranging from very low CPI to very high, principled priority level of CPI, thereby matching the quantitative scale of CPI output (ut supra). The three indictors are:

1. Internal pro-climate stakeholders
2. External pro-climate stakeholders
3. Recognition of interrelations with climate policy objectives

The first variable Dupont (2016) uses to measure CPI in the policy process looks at the role of internal pro-climate stakeholders in the policy negotiations. Internal pro-climate stakeholders of the EU are the Directorate General for Climate Action (DG Clima) and the Directorate General for Environment (DG ENV) for the Commission. For the Parliament, we look at the Environment Committee (ENVI). For the Council, this is the Environment Council formation (Dupont, 2016). The European Environment Agency is not directly involved in the policy process and is thus not included in the list.

This indicator is analysed by using documents associated with the policy negotiations, interviews, and media reports. The results are then matched with the fivefold scale. If the internal pro-climate stakeholders are leading the policy proposal and negotiations, there is an indication of very high level of CPI. If these type of stakeholders are not involved, there is an indication of very low CPI (Dupont, 2016).

The second indicator is similar, but focusses on the involvement of external pro-climate stakeholders. This could be industrial actors in favour of strong climate policy or environmental NGOs. It is important to mention that other external actors who are not pro-climate are not included (see further). External pro-climate involvement can increase pressure on policy makers to ensure CPI (EEA, 2005; Persons, 2007). The fivefold scale of this indicator is based on two crucial factors identified by Dupont (2016). The first factor handles the procedures for consultation established by a certain institution while the second factor considers the openness of said institution to receive input from external stakeholders (Dupont, 2016). In order to assign the indicator a qualitative score on the fivefold scale, official documents and media reports are analysed. We could not carry out interviews with external stakeholders directly, as they did not answer our requests. Nevertheless, we did ask EU-officials about the involvement of these stakeholders. If external pro-climate stakeholders are invited to provide input and receive wide backing, there is an indication of very high levels of CPI. If they are not invited or are not visible, there is an indication of very low levels of CPI.

The involvement of climate stakeholders is thus seen as important by Dupont (2016). She draws on EPI literature to provide theoretical support, as it has been shown that a policy process open to several voices ensures that climate issues are dealt with (EEA, 2005; Jordan & Lenschow, 2008b). Thus, pro-climate stakeholder involvement is considered as a main indicator for CPI. She does, however, mention some shortcomings with the indicators. A first shortcoming is the possible presence of stakeholders who are against CPI, which could impact the strength of pro-climate and thus pro-CPI voices. Concerning the energy sector, these stakeholders could come from large energy companies (Vasileiadou & Tuinstra, 2013). An analysis of all stakeholders could thus provide a more accurate picture. However, this would be a time-consuming endeavour that, just like in the research of Dupont (2016), goes beyond the scope of the thesis. Therefore, we chose to follow the method used in most of the research on CPI.

A second shortcoming mentioned by Dupont (2016) is the possibility that pro-climate stakeholders could not be the only ones in favour of CPI. Policymakers could also recognize the importance of acting on climate change. One look at the ambitious statements made by the Green Deal (see chapter 3) might suggest that this is even more the case today than when Dupont (2016) wrote her book. However, if none of the pro-climate stakeholders are involved, our way of measurement would result in an artificially low level of CPI. Therefore, Dupont (2016) proposes a third variable to alleviate this problem.

This third indicator used by Dupont (2016) focuses on the recognition of functional interrelations by actors. Functional interrelations mean that there are interdependencies between two sectors. In the case of CPI measurement, this translates into interdependencies between a policy sector and the climate objectives sector. If an actor recognizes that there are functional interrelations in his sector, it means that he understand that there are interdependencies between his sector and climate policy objectives. It also means that he understands the importance of combating climate change (for a more theoretical explanation of functional interrelations, see the analytical framework).

This indicator is measured through the analysis of policy papers and media to assess if the actors of the policy process refer to these interrelations and to scientific arguments about the need to combat climate change. As we do not wish to start a semantic discussion on the definition of ‘scientific’, we follow the condition introduced by Dupont (2016). She states that scientific arguments need to come from officially recognized institutions such as the UN Intergovernmental Panel on Climate Change (IPCC). It is further supplemented with interviews where we assess if the actor understands the functional interrelationships in policy discussions. If the functional interactions are recognized and policy makers aim to combat climate change through scientifically-grounded measures, we assign very high levels of CPI. If policy makers do not recognize the functional interrelations with climate objectives, we will assign a score of very low levels of CPI.

The table below gives an overview of the fivefold qualitative scale to measure CPI in the policy process.

Indicator/Level	Very low CPI	Low	Medium	High	Very high CPI
1.Internal pro-climate stakeholders	No involvement and no visibility in the policy process	Not consulted, but providing unsolicited opinions	Consulted throughout the process	Co-drafters and co-deciders with other sectoral DGs, committee and Council formations	Leading on the policy proposal development and negotiations
2.External pro-climate stakeholders	No pro-climate stakeholders involved or visible in the policymaking process	No or little access to the policy process, pro-climate stakeholders' arguments receive general opposition	Procedures allow access, but ease of access limited, pro-climate lobby facing certain opposition from other stakeholders and/or policymakers	Easy access to policymaking, string pro-climate lobby with little opposition from other stakeholders and/or policymakers	Invited and opinions sought by policymakers, access guaranteed, pro-climate stakeholders arguments receive general support
3.Recognitions of interrelations with climate policy objectives.	Functional interrelations with climate objectives not recognized	Climate policy objectives mentioned, yet interrelations not strongly featured throughout policy process	Functional interrelations recognized and considered throughout policy process, yet without motivating policy action	Achieving climate policy objectives is a stated goal of policy and continues to motivate policy development throughout the process	Policy is developed in order to achieve long-term climate policy objectives and such a standard remains in place throughout the policy process.

Table 5.2: Measuring CPI in policy process (Dupont, 2016).

Analytical framework

In order to explain the level of CPI in REPowerEU, we developed a framework by using elements from already existing frameworks. As we follow the strong interpretation of CPI, we chose to side-line criteria proposed by authors who have a weak interpretation of CPI (for example, Mickwitz et al., 2009a). In practice, this means drawing on the work from Dupont, Primova, Oberthur, Kettner and Kletzan-Slamanig. All of these authors are discussed in the literature review.

The criteria functional interrelations, political commitment, institutional and policy context and CPI in policy process are used by Dupont and her colleagues (Dupont & Primova 2011; Dupont & Obrthür, 2012; Dupont, 2016). The criterium time perspective was introduced by Kettner and Kletzan-Slamanig, (2020). Thus, we use five criteria.

- Functional interrelations
- Political commitment
- Institutional and policy context
- Time perspective
- CPI in policy process (only to explain policy output)

In order to get a better understanding of these variables, we will briefly discuss them individually. The first variable is related to the functional interrelations between a specific sector (energy sector in the case of REPowerEU) and the climate policy sector. This variable looks at the possible interdependencies and spillovers between the two aforementioned sectors (Kettner & Kletzan-Slamanig, 2020). This variable is linked to the grand theory of neofunctionalism, which dates back to the 1950's (for example, see Haas, 1958). According to this theory, integration is an incremental process whereby integration in one sector leads to integration in other sectors, the so called spillover effect (Dupont, 2016). It also focusses on the supranational level and the supranational interest groups, who pressure for further integration (Strøby-Jensen, 2007). We distinguish two different aspects of this variable. First, the nature of functional overlap, which can be direct or indirect. Direct means that interrelations between the objectives from different sectors are closely linked and obvious (e.g., the energy sector and the climate policy sector). They can also be indirect when the interrelations are less clear or hidden by other objectives. A direct nature has a positive impact on CPI (Dupont, 2016). Second, the interrelations can be synergistic or conflictual. We speak of a synergetic nature when policy objectives are in harmony (Dupont & Primova, 2011) A conflictual trade-off is characterized by trade-offs (e.g., consumption of fossil fuels is increased to ensure energy security) (Kettner & Kletzan-Slamanig, 2020). A direct and synergistic nature of functional interrelationships provides the most favourable condition for CPI, whereas an indirect and conflictual nature provides the least favourable conditions (Dupont, 2016). Thus, we see that integration happens in sectors with a interrelationship between them. This corresponds with the

work of Underdal (see chapter 2), which stated that integration should happen in sectors that are linked with each other (Underdal, 1980).

	Direct	Indirect
Synergistic	++	+-
Conflictual	-+	--

Table: 5.3: Nature of functional overlap and its potential effect on CPI (Dupont & Oberthür, 2012).

The second variable is the political commitment variable. Its origins find itself in EPI literature with the EPI definition of Lafferty and Hovden (2003) and was later used by some of the authors we discuss in chapter 2. It fits the grand theory of intergovernmentalism. This theory has been developed since the 1990's by Moravcsik (1993) in particular as a response to neofuncional theory. It assumes that the member states are the key actors in the EU and EU integration and that they are rational unitary actors (Dupont, 2016). Therefore, this theory focuses on the member states and consequently, the EU institutions representing the states, *ergo* the European Council and the Council of the European Union. Additionally, the theory of new institutionalism changed the scope of this variable. New institutionalism originated in the 1980's (March & Olsen, 1989) and states that the European institutions themselves, their decision-making procedure, culture and traditions also have an important influence on the policy process. Therefore, these supranational institutions (Commission and Parliament) can also have political commitment to achieve climate policy and should thus be taken into account when researching this variable (Dupont, 2016).

Furthermore, this variable has two aspects, being political commitment to climate policies in general and commitment to CPI in the policy sector under investigation (Dupont & Oberthür, 2012). Policymakers with a political commitment to climate policy in general may emphasize the functional interrelations between a specific policy sector and climate policy in policy proposals and during the policy process. In turn, this may lead to a policy output that is set on achieving climate policy objectives. The political commitment variable is thus able to explain CPI in both the policy process and the policy output (Dupont, 2016). Both Dupont and her colleagues and Kettner and Kletzan - Slamanig measure the variable by looking at the stated objectives by political members of the EU (including Commission and Parliament), and at the decisions taken to achieve these objectives (Dupont & Primova, 2011; Dupont & Oberthür, 2012; Dupont, 2016; Kettner & Kletzan-Slamanig, 2020). However, of the research just mentioned, only the two most recent ones focus on the Commission and Parliament as well, showcasing just how recent the new institutionalist theory is. We will follow this interpretation as well. It is measured by a scale from low to high. A high amount of political commitment leads to a high level of CPI.

	Low	Medium	High
Measuring political commitment	No evidence of commitment to climate change or CPI in statements	Expressed commitment to climate change or CPI in statements	Expressed commitment in climate change or CPI in statements, and actions to follow through on the commitment

Table 5.4: Measuring political commitment
(Dupont, 2016).

The third variable is the institutional and policy context. It is tied to both neofunctionalism and new institutionalism. As mentioned above, new institutionalism states that institutions can have an impact on the policy process and outcome because they have their own decision-making process, traditions and culture. Therefore, we need a variable that focuses on the impact of these institutions on the policy process and output. The neofunctionalist theory strengthens this by focussing on the spillover between policies and on the supra-national groups. For the institutional context aspect, one should look at the institutional set-up of the policy sector in question (energy sector in the case of REPowerEU). An important element that should be looked at is whether or not the qualified majority voting (QMV) procedure applies, as these could in theory increase the level of CPI (Dupont, 2016). However, this is not always the case in practice (Tsebelis, 2013). Regarding the policy context aspect, one should look at the timing of policy negotiations and if external political context or events could play a role in policy development (Dupont, 2016). For example, the ongoing Russo-Ukrainian war and the energy crisis might push CPI to the background in favour of securing energy supply and reasonable prices. Thus, this variable can explain both CPI in the policy process and output and measured by analysing documents about the policy context and procedures and the institutional set up.

Additionally, we choose to include the time perspective. We include the variable time perspective used by Kettner and Kletzan-Slamanig (2020). This variable looks whether or not short-term or long-term perspectives are followed. We choose to include this variable because of the basic conflict that lays at the basis. With this, we mean the conflict between short-term energy security and independence from Russia and the long-term need to achieve climate neutrality. This variable is operationalized by looking at the actions mentioned in the directives.

The last variable is the CPI in policy process variable. This variable can only be used to explain the level of CPI in the output phase. It links the process and output phase together. This was done by Dupont and Oberthür (2012) in their research on CPI (see chapter 2). It is based on the work of Briassoulis (2005), who showed that higher levels of CPI in the policy process will likely lead to higher levels in the policy output. This variable has its roots in both the neofunctionalist and new

institutionalist theory as they both "*emphasise the importance of multiple actors in the policymaking processes*" (Dupont, 2016, p.52).

Variable	Theoretical perspectives	Explains CPI in process or output	Aspects	Operationalisation
Functional interrelationship	Neofunctionalism	Process and output	Direct or indirect; Synergetic or conflictual	Nature and type of functional interrelations between two sectoral policy objectives
Political commitment	Liberal intergovernmentalism and new institutionalism	Process and output	Overarching to climate policy objectives; To CPI in particular	Council and European Council conclusions; statements and follow-up of EU (including Com and EP)
Institutional and policy context	New institutionalism and neofunctionalism	Process and output	Institutional context (procedures); past policy decisions; external shocks or events	Policymaking procedure; timing of policy process
Time perspective	N.A.	Process and output	Short-term or long term perspectives	Actions announced in directives.
CPI in policy process	Neofunctionalism and new institutionalism	Output only	Extent of CPI in process; discourse on climate policy in process	Pro-climate stakeholders and advocate involvement and access to the policy process; acknowledgement of functional interrelations.

Table 5.5: Analytical framework (Dupont, 2016, author's additions).

Chapter 6: Overview REPowerEU

Before we start our analysis, we will give an overview of the REPowerEU plan. The plan was represented by the European Commission on 18 May, 2022, two months and 24 days after the Russian invasion of Ukraine. It was drafted on invitation by the European Council. An informal meeting of the European Council on 10 and 11 March, 2022 condemned the Russian invasion, pledged support to Ukraine and asked the Commission to draft a REPowerEU plan in order to reduce our reliance on fossil fuels. This is also known as the Versailles Declaration (European Council, 2022).

Its main goal is to initiate a rapid reduction of the Union dependence of fossil fuels (European Commission, 2022a). This is done in three ways. The plan aims to save energy, accelerate the clean energy transition and diversify energy sources (see figure 6.1). It is important to mention that REPowerEU partly builds on the proposals made by the 'Fit for 55' package. It aims to increase targets set by 'Fit for 55', but it also proposes actions on energy security, supply and storage, energy savings, fuel diversification, clean transition to quickly substitute fossil fuels and smart investment.

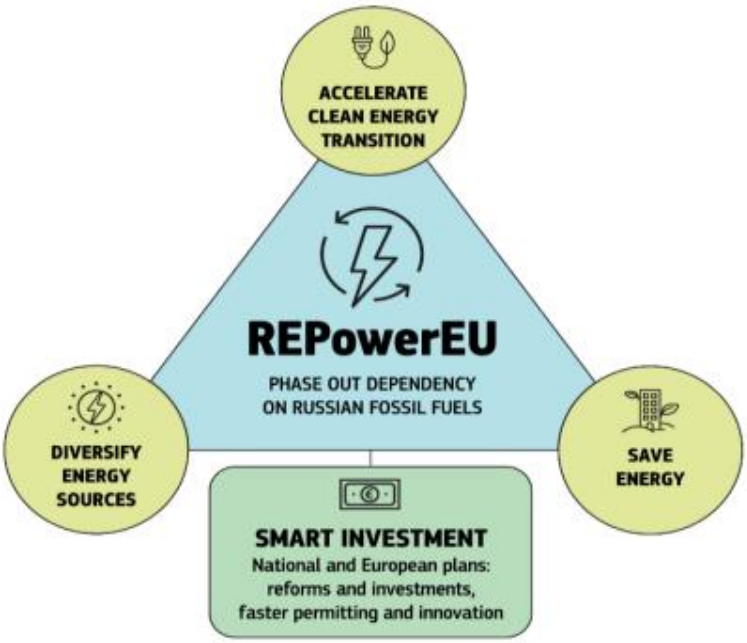

Figure 6.1: REPowerEU (European Commission, 2022).

The REPowerEU plan is divided into multiple pieces. We will discuss each of them individually. However, one has to keep in mind there exist links between the policy documents, for example the 'Fit for 55' documents. Important to note is that not all parts of REPowerEU are in the legislative process right now or have partaken in the legislative process. Some of them are presented as communications from the Commission. A communication is a policy document published by the

Commission when it wishes to share its view on a certain issue. It holds no legal power (Eltis, n.d.). However, we will see that some of the proposals in these communications are incorporated in the legislative proposals. These main parts of REPowerEU are:

1. REPowerEU chapters in recovery and resilience plans
2. REPowerEU plan legislative proposal
    a. Renewable Energy Directive
    b. Energy Performance of Building Directive
    c. Energy Efficiency Directive
3. EU Solar Energy Strategy (communication)
4. EU Save Energy (communication)
5. Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements (we will view this as part of the communications in our analysis)
6. EU external energy engagement in a changing world (communication)
7. Other aspects

REPowerEU plan Legislative proposal

As the energy sector contributes 75% of the GHG emission, it is paramount that this sector becomes as green as possible as fast as possible (Commission, 2022). In order to achieve this, the REPowerEU plan legislative proposal is a proposal made by the Commission to raise already existing targets regarding energy. We already briefly mentioned them in the paragraph explaining 'Fit for 55'. The targets can be found in the Renewable Energy Directive (RED), Energy Performance of Buildings Directive (EPBD) and the Energy Efficiency Directive (EED) (Wilson, 2023-a). We will discuss them again later on in this chapter along with other suggested increases mentioned in the proposal.

It is worth mentioning that it was decided that proposed amendments regarding EPBD and EED would be discussed directly in their process. Thus, the negotiations on the REPowerEU plan legislative proposals only focus on amendments regarding the RED, which make up the majority of the changes proposed (Wilson, 2023-a).

It is also important to mention that we will only discuss the additional amendments introduced by REPowerEU. We will solely focus only on these amendments during our analysis of CPI in the output and the procedure. Researching all the content of these directives together is beyond the scope of this thesis. Like mentioned in our methodology chapter, this would mean analysing 1477 pages. Thus, each one of them is worth a study on its own.

Commission's initial proposal

Revision of Renewable Energy Directive

As mentioned in Chapter 3, the current Renewable Energy Directive in place contains a share of renewable energy target of 32% by 2030 (Directive (EU) 2018/2001). The Revision proposed by von der Leyen in 2021 proposed an increase of this target to 40 %. After the invasion of Ukraine, the REPowerEU plan proposed to increase it again to become independent from Russian fossil fuels by the end of this decade. This proposed increased target is now up to 45%. To achieve this target, the Commission proposes an increased rate of use in renewable energy sources, in particular wind and solar energy (Commission, 2022).

The Commission also wants to simplify the administrative procedures for renewable energy projects. A study on the administrative procedures in the renewable energy sector (RES-study) revealed that administrative and grid issues make up about 46% of all identified barriers (European Commission et al., 2022). Therefore, an obligation for member states to identify land and sea areas suitable for the installation of renewable energy installations is proposed in the RED. Identification of these areas should be based on the potential they offer for renewable energy production, availability of grid infrastructure and the expected energy demand. The Commission proposes a deadline of twelve months on member states in order to identify these areas Commission, 2022).

Furthermore, the possibility is introduced to classify some of these areas as renewables go-to areas. These areas are particularly suitable to deploy renewable energy projects and where the development of these projects would have a low environmental impact (Commission, 2022). As the environmental impact would already been assessed as low, these areas would have faster permitting procedures. The assessment of the environmental impact is done in accordance with Directive 2001/42/EC, which specifies how to carry out these assessments (Directive 2001/42/EC, 2001). Projects outside these areas should still be following existing rules and specific environmental impact assessments as determined by Directive 2001/42/EC should be carried out for each project separately (Commission, 2022).

In order to achieve simplification, the Commission proposes to introduce deadlines for the permit-granting procedure. In order to keep things comprehensible, we made an overview of the proposed deadlines in annex 9.
Importantly, the Commission propose to introduce the concept of overriding public interest for renewable energy plants (Commission, 2022). This means that the construction and operation of such plants will be considered as being more important than the possible negative environmental effects they cause.

Revision of Energy performance of Buildings Directive

The Commission proposes to introduce an obligation to make all new buildings solar-ready. This entails a design to optimize solar generation potential and enabling the installation of solar technologies without structural intervention. Member states should also take measures to ensure solar installation. In order to do this, they should define a list of criteria for the implementation of deployment of solar energy (Commission, 2022).

Furthermore, the Commission proposed targets for the installation of solar energy installations. These targets are derived from the EU Solar Energy Strategy (see further). The following targets are proposed:

a) *"by 31 December 2026, on all new public and commercial buildings with useful floor area larger than 250 square meters;*
b) *by 31 December 2027, on all existing public and commercial buildings with useful floor area larger than 250 square meters; and*
c) *by 31 December 2029, on all new residential buildings."(Commission, 2022, p.24)*

Recast Of Energy Efficiency Directive

Another way to decrease the demand of Russian fossil fuels and to achieve net-neutrality is to increase energy efficiency. The initial proposal on the Energy Efficiency Directive contains an energy reduction target of 9%. REPowerEU proposed to increase this up to 13%. As mentioned in the section on 'Fit for 55' (see chapter 3) this means a 980 Mtoe in primary and 750 Mtoe in final energy consumption by 2030 (Commission, 2022).

Funding

The commission does not expect large additional costs for the revisions of the directives, stating that these *"largely rely on structures and rules that are already in place"*(Commission, 2022, p.7). They do expect some costs regarding the obligation for member states to identify the 'renewables go-to areas' and some implementation costs to reach the higher targets. However, the Commission states that these costs will be compensated by the economic and environmental benefits. Examples of these benefits are less imported fossil fuels from third countries, greater resilience against externalities and costs-saving for households and enterprises (Commission, 2022).

Final Agreement

Revision of Renewable Energy Directive

In its General Approach, the Council did not support the increase of the renewable energy share target from 40% to 45% by 2030. Instead, the Council supports the pre-REPowerEU proposal to raise from 32% to 40 % (Council, 2022). The Parliament proposed a 55% target. (Parliament, 2022). A provisional agreement was reached on 30 march 2023. A target of 42.5% was accepted, with an additional 2.5% indicative top possible (Council, 2023). We did not find any documents that specify what is understood under this indicative top. It remains to be seen if this provisional agreement will be accepted into a final agreement. At the time of finishing this thesis (21 May 2023), this was not yet the case.

Furthermore, the Council proposed to raise most of the deadlines proposed by the Commission. It also introduced specific deadlines for offshore energy installation (Council, 2022). The Parliament proposed to shorten some of the deadlines and introduced a one-month procedure for when the capacity of renewable energy power plants in go-to areas is increased by less than 15 % (Parliament, 2022). Both parties agreed upon the concept of 'overriding public interest'. A complete overview of the deadlines can be found in annex 9. The media-outlets on the provisional agreement do not contain information on these deadlines. Therefore, we do not know how long the deadlines in the final agreement will be.

Revision of Energy performance of Buildings Directive

At the moment, the trilogue negotiations have not yet reached an agreement. Therefore, we are limited to mentioning the differences between Council and Parliament.

The Council's opinion on the amendments proposed regarding the EPBD were not mentioned in the General approach on the REPowerEU legislative proposals. Instead, we can find this opinion in the General approach of revision of the EPBD (Council, 2022a). In this approach, the Council does not completely agree with proposed obligations regarding solar energy deployment in buildings. The obligation to have these kind of installations by the end of 2026 is for public and commercial buildings with a useful floor area larger than 250 m² is widened to all public and non-commercial buildings. The obligation to have these kind of installations in public and non-residential buildings larger than 250 m² by 2027 is weakened. Instead, the Commission proposes that this will only be mandatory if such buildings are undergoing a major renovation and have a floor area larger than 400 m². The obligation proposed by the Commission to have solar installations in all residential buildings by the end of 2029 remains unchanged by the Council (2022a).

The Parliament's position on the proposed amendments regarding the EPBD can be found in its position for the EBPD negotiations (Parliament, 2023). It took a far stronger position in the obligations on solar energy installations. All existing building, regardless of fact that they are larger or smaller than 250 m², should deploy solar energy installations. This is one year earlier and much broader than the proposal of the Commission and the Council (ut supra). This is also the case for the obligation on all new residential buildings, which the Parliament wanted to implement by the end of 2028 instead of 2029. Additionally, a new obligation stating that all buildings undergoing major renovation after 2032 should deploy solar energy. This is a far stronger position than the ones of the Commission and the Council, though the Parliament does insert the condition that the deployment should only be mandatory if it is technically, economically and functionally feasible (Parliament, 2023).

Recast Of Energy Efficiency Directive

For the EED, a provisional agreement was reached on 10 March 2023. A target of 11.7% energy saving was agreed upon, which translates to 993 Mtoe primary and 764 Mtoe final energy consumption (Widuto, 2023). This is a compromise between the position of Council and Parliament. The Council agreed with the Commission's pre- REPowerEU proposal to the 9 % reduction and the 787 Mtoe and 1023 Mtoe targets. (Council, 2022b). The Parliament wanted to strengthen the target to a 14.5% energy savings target, or 740 Mtoe of final energy and 960 Mtoe of primary energy consumption (Parliament, 2022a).

While a provisional agreement was reached, it is not yet ratified as of writing. Caution for unexpected changes is thus advised.

Funding

No additional statements on funding were made.

REPowerEU chapters in recovery and resilience plans

Commission's initial proposal

Another part of REPowerEU are the chapters in recovery and resilience. This entails targeted amendments to mainly the Recovery and Resilience Facility (RRF) Regulation (see chapter 3). The goal of the proposal is to add specific chapters on REPowerEU objectives in the national recovery and resilience plans (NRRPs) of member states. These chapters should include action taken by the member state to achieve REPowerEU objectives. Thus, these chapters will include measure aiming to:

> *"(a) improving energy infrastructure and facilities to meet immediate security of supply needs for oil and gas, notably to enable diversification of supply in the interest of the Union as a whole,*
> *(b) boosting energy efficiency in buildings, decarbonising industry, increasing production and uptake of sustainable biomethane and renewable or fossil-free hydrogen and increasing the share of renewable energy,*
> *(c) addressing internal and cross-border energy transmission bottlenecks and supporting zero emission transport and its infrastructure, including railways,*
> *(d) supporting the objectives in points (a), (b) and (c) through an accelerated requalification of the workforce towards green skills, as well as support of the value chains in key materials and technologies linked to the green transition."(European Commission, 2022b, p. 15)*

Furthermore, it proposes an exemption from the digital target requirement for measures mentioned in REPowerEU chapters. The original RRF regulation proposed a digital target requirement of 20%. This means that 20% of the budget of the NRRP of a member state should go to measures focusing

on realizing digital transition (Regulation (EU) 2021/241, 2021). However, the Commission proposes that the measures mentioned in the REPowerEU chapters should not be taken into account taken when calculating this requirement of 20 %. Mathematically, this means that digital transition measures will have a smaller share in the total budget. It thus frees money to allocate to REPowerEU objectives. The reason stated by the Commission was "*the unprecedented urgency and importance of energy challenges faced by the Union"*(European Commission, 2022b, p.10).
The proposal also included a targeted exemption from the obligation to follow the 'do no significant harm' (DNSH) principle. This principle was introduced in the Green Deal (see chapter 3). The exemption of this principle would include reforms aimed at the securing oil and gas supply needs (ut supra).

The Commission also states that the REPowerEU chapters should contribute to the development of green skills in the EU's workforce (Commission, 2022b). This is consistent with the proposals made in the EU Solar Energy Strategy and the EU Large-Skills Partnership, which aims to develop a workforce skilled in handling solar technology (see further).

In order to finance these objects, the RRF would receive an additional twenty billion euro's. (European Commission, 2022b). This money would be acquired from the auctioning of ETS allowances of the market stability reserve[4]. This money is to be distributed in the form of grants which can only be used to support reforms and investments mentioned in the REPowerEU chapters of the NRRPs.

Final Agreement

The final agreement came as a result of trilogue negotiations between Parliament and Council with the Commission as mediator. It is named the *Regulation (EU) 2023/435 of the European Parliament and of the Council of 27 February 2023 amending Regulation (EU) 2021/241 as regards REPowerEU chapters in recovery and resilience plans and amending Regulations (EU) No 1303/2013, (EU) 2021/1060 and (EU) 2021/1755, and Directive 2003/87/EC*. We will discuss the final agreement in this section.

The proposal of the Council on the allocation key to take into account the dependency rate on fossil fuel consumption was accepted (Regulation (EU) 2023/435), 2023). The inclusion of this indicator can be accepted because it was also proposed by the Parliament and was an answer to criticism from the European Court of Auditors (ECA). In its opinion, the ECA stated that the absence of such an indicator would decrease the effectivity of REPowerEU (ECA, 2022). The Parliament proposed to also include indicators such as energy dependency on third countries rate and energy dependency

[4] The Market Stability Reserve (MSR) is a reserve where ETS allowances that were not allocated (bought) are stored. From 2023 onward, the amount of allowances in the Reserve in year *n* cannot be higher than the volume of allowances in the auction of year *n-1* (Directorate-General for Climate Action, n.d.-c).

on Russia specifically (Parliament, 2022b). These were not accepted. For a full overview of the allocation key, see annex 3.

Both institutions agreed to remove the requirement to spend 20 % of RRF resources on digital transition. A proposal by the Parliament and the Council to focus on energy poverty was included as well. They introduced a requirement to include an explanation in the chapters on how the measures contribute to addressing energy policy (Regulation (EU) 2023/435), 2023).

We also see this mutual arrangement in the articles concerning the exemption of the DNSH principle. The Council agreed with the Commission proposal to include an exemption from this principle for measures contributing to REPowerEU objectives (Council, 2022c). The Parliament wanted to include some additional cumulative conditions that would limit the possible exemptions from the DNSH principle (Parliament, 2022b). In the final agreements, cumulative conditions were included as well, however, two of them were weakened. First, the deadline to implement measures exempted from the DNSH principle was moved from 31 December 2024 to 31 December 2026. Second, the condition that no adequate clean technology is available as a means to secure energy supply is changed into the condition that cleaner feasible technologies have been taken into account when searching for means to secure energy supply. The other conditions proposed by the Parliament were adopted in the final agreement without significant change. These stipulated that an exemption was only allowed if it was necessary to meet immediate energy security, that the potential to harm to the EU's environmental objectives would be mitigated and that the 2030 and 2050 climate objectives would not be jeopardised (Regulation 2023/435, 2023).

Another agreement was reached on investments in oil infrastructure to increase energy security. The Commission, supported by the Council, proposed to keep this measure. However, the Parliament wanted this objective to be removed. In the final agreement, this objective is indeed removed and investments in oil infrastructure are not allowed to be included in the REPowerEU chapters. However, a derogation from this rule is possible when if a member state has a high dependency rate on oil and is situated in a specific geographical situation (Regulation (EU) 2023/435, 2023). Thus, both institutions achieved some of their objectives.

Additionally, the Council did not want to include the proposal made by the Parliament to introduce the objective of making the industry hydrogen-ready. This wish of the Council was followed in the final agreement. This agreement only states that initiatives in the hydrogen sector should be supported. The Council's narrower scope of REPowerEU objectives was also favoured over the Parliament's proposal to include objectives such as focusing on sustainable construction materials, affordability and inclusion (for a full overview, see annex 2). Thus, it seems that the Council wanted to keep the focus of this regulation on energy security.

Regarding the financing of the € 20 billion of additional resources, € 8 billion or 40 % should come from the auctioning of ETS allowances. The remaining 60 % should come from the Innovation Fund. Allowances in the MSR should be used to replenish the innovation fund (Regulation (EU) 2023/435, 2023). The Parliament proposed a 100% financing from ETS allowances, while the Council proposed 25% from the allowances and 75% form the Innovation fund[5]. Thus, a compromise was reached between the two institutions.

EU Solar Energy Strategy

As discussed above, a communication does not hold any legal value. Nevertheless, it often acts as the basis of future legislation.

REPowerEU's main objective is to become energy independent from Russia. Therefore, the Commission envisions a rapid deployment of renewable energy. As discussed earlier, this is translated to the proposal to increase the 2030 target in the RED from 40% to 45% renewable energy share. Solar energy needs to become a centrepiece of this endeavour. To this end, the Commission proposed the Solar Energy Strategy. The goal of the this strategy is to generate 320 Gigawatts of solar photovoltaic[6] (PV) by 2025 and almost 600 Gigawatt by 2030 (Commission, 2022c). The Commission defends this focus on solar energy and PV by citing a number of advantages. Costs of PV have gone down, allowing citizens autonomy because they can produce their own energy. The adoption of solar energy creates new jobs and it is a chance to become a global industrial leader in solar products.

The EU Solar Energy strategy consists of four main parts. First, the European Solar Rooftops Initiative, which introduced mandatory installation of solar panels. This became part of the proposal on the revision of the EPBD (European Commission, 2022). Second, the EU large-scale skills partnerships for renewable energy supports public-private cooperation projects to create a workforce skilled in green technologies. This is related to the RED, which contains proposals on mutual recognition of certification schemes for workers. Third, the Commission wants to increase the focus on innovative forms of deployment, such as agrivoltaics, which use PV in agriculture. This is also related to the RED, as the Commission wants to use renewable go-to areas with shorter permit procedures to ease innovation. Lastly, the EU Solar PV Industry Alliance is created to deliver the solar products needed for the aforementioned projects. The EU has some weaknesses in the supply chain of these products, with most of the PV panels used in the EU being imported, and 89 % of these imports come from one country (see annex 4) (Commission, 2022c). The strengthening of supply chains is done by ensuring access to raw materials and improving resource efficiency,

[5] The Innovation Fund is a funding programme for low-carbon technologies. It is worth up to € 38 billion. It is funded by the ETS system (Directorate-General for Climate Action, n.d.-d).
[6] Photovoltaics is the method used to generate energy with solar panels. Solar panels consists of a large amount of solar cells. These cells convert energy from the sun to electric power by using the photovoltaic effect (Directorate-General for Energy, n.d.-d).

circularity and recycling. The Commission announced a revision of the Ecodesign and Energy labelling to address these issues. It also announced a Solar PV Industry Alliance with private partners, research institutes and consumer associations to update the supply chain (Commission, 2022c).

EU Save Energy

Another REPowerEU Communication by the Commission concerns reducing energy consumption by saving energy. The EU Save Energy Strategy is divided in two parts, a part focusing on short-term goals and a part focusing on mid and long-term goals. Short-term goals aim to immediately reduce energy use by changing the habits of citizens. This should mainly be done by information campaigns. The long-term goals focus on increasing energy efficiency and strengthening energy infrastructure.

Short-term goals

The Commission states that one of the cheapest way to become energy independent from Russia is reducing our energy consumption. It is also the fastest way, which is important given the urgency to achieve this independency. Reducing energy consumption should happen by voluntary, personal choices of EU citizens. In order to achieve this, the Commission announces that it will develop an information campaign to raise awareness on the EU response to the Russian Invasion and to the high energy prices (Commission, 2022d). This campaign will also contain information on how to reduce energy consumption. Key sectors where fossil fuels, namely gas and oil, from Russia are widely used are the heating in households and the transport sectors (56% and 93% respectively). These fossil fuels are also used to generate electricity. In order to achieve a reduction, the Commission proposed a number of actions focused on these sectors (Commission, 2022d). These actions should decrease gas consumption by 5% (approximately 13 bcm[7]) in one year. They could also decrease oil consumption by 5 % (approximately 16 Mtoe). The most important savings can be found in the following table. For a more detailed overview, we refer to annex 5.

	Oil savings (Mtoe)	Gas savings (bcm)
Gas saving measures		
Savings from turning down heating, turning off heating in unused rooms, block draughts etc.	≈1.5	≈6
Providing information about keeping condensing boilertemperatures below 60 °C and encouraging		≈3

[7] Bcm: billion cubic metres

people to check theirs.		
Information about servicing boilers, simple insulation measures, draught proofing, fitting Thermostatic Radiator Valves and heatingcontrollers and encouragement to act.	≈0.3	≈1
Considering modifying the energy pricing and introducing progressive tariff structures and other solutions to encourage energy savings and switch from gas to electricity.		≈1
Industry		
Incentivise energy audits and implementation to avoid heat lossesfrom high temperature processes, supporting switching away from fossil energy.		≈2
Transport measures		
Recommending reducing motorway speeds.	≈8	
Encouraging walking, cycling, public transport, micro-mobility in urban areas.	≈5	
Encouraging train transport.	≈2	
Illustrative potential	≈***16***	≈***13***

Table 6.1: Most important energy saving measures for the short-term (one-year) (Commission, 2022d).

Mid and long-term goals

Short-term goals are not enough to ensure a structural and permanent decrease of energy consumption. It is also not enough to accelerate the Green Transition. Therefore, the Commission proposes some measures focussing on achieving mid and long-term goals. It proposes that these measures are incorporated into the ongoing co-decision processes of the 'Fit for 55' package. These measures are mostly rules and support-type measures and include, among others, an increase of national energy savings, obligations in key sectors to stop subsidies for fossil fuels, introducing subsidies for heath pumps, strengthening national energy requirements for new buildings (related to the proposal of Rooftops Initiative and the revision of the EPBD) and an introduction of additional Minimum Energy Performance Standards for buildings (also related to the EPBD) (Commission, 2022d).

In support of these recommendations, the Commission announces that it will propose an increase of the Energy Efficiency target. It wants to increase this target from 9% to 13% (European Commission, 2022d). This proposal is a part of REPowerEU legislative proposals (ut supra). It also calls upon the Parliament and Council to consider these measures in the revisions of the EPBD and EED. Likewise, it urges the co-legislators to accept the Ecodesign for Sustainable Products Regulation (ut supra). This will increase the energy efficiency of an array of products, which will result in energy savings.

Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements

This recommendation refers to the proposal to create renewable go-to areas. These areas as discussed above. Furthermore, it mentions the principle that energy plants are in the 'overriding public interest'. Additionally, it recommends that member states digitalize their permit-granting procedures and set up contact point where renewable energy project developers can report issues within the procedure. It also advises member states to take appropriate measures to minimize the killing of wildlife (Commission, 2022e).

Regarding power purchase agreements[8], the Commission recommend member states to develop support schemes and remove market barriers for corporate purchase agreements (Commission, 2022e). These proposals were also mentioned in the proposal for the RED. Therefore, we will not further discuss this recommendation.

EU external energy engagement in a changing world

This communication proposes an updated EU external Energy Strategy. In order to become energy independent from Russia, the Commission has proposed a number of measures in REPowerEU focused on internal energy supply and infrastructure. We discussed them above. However, these measures will take time to deliver results. The EU does not have time to wait, as they immediately want to become energy independent from Russia. Thus, the EU adopted this communication.

A first aim of this communication is to diversify the EU's gas supply in order to decrease the dependence on Russian gas. This is done by a number of key actions. Negotiations with existing gas suppliers, such as Norway, Algeria, Azerbaijan, Qatar and Nigeria, and possible new gas suppliers such as Senegal, are one such action (Commission, 2022f). This is related to the increase of liquified natural gas (LNG) from the United States, whom agreed to increase its delivery and has recently reaffirmed this decision (Di Sario & Zimmerman, 2023). In order to prepare infrastructure for this increased imports, investments around EUR ten billion by 2030 is needed (Commission, 2022a) .

[8] A power purchase agreement is a contractual agreement whereby a buyer will buy an amount of electricity from a renewable energy generator from a seller for an agreed upon price. The contracts usually last between 10 to 20 years (RE-Source Platform, 2021).

Furthermore a rapid operationalization of the EU energy platform is key to diversify gas supply. This platform should pool demand of member states, coordinate infrastructure, negotiate and facilitate international joint gas and hydrogen purchases (European Commission, 2022f).

The amount of these hydrogen imports should equal around ten million tonnes. In order to achieve this number, the Commission aims to create partnerships with third countries, in particular with neighbouring countries. The Southern Mediterranean has a particularly high potential. The Commission is creating a Mediterranean Green Hydrogen Partnership based upon the existing Agenda for the Mediterranean[9] to capture its potential. A strategic partnership with Ukraine and an agreement on cooperation with Japan should also be established. This would be supported by the introduction of the first trading hubs of hydrogen in Europe. Lastly, the Commission stresses that the global hydrogen market is a new market, and is thus in need of regulations, standards and transparency. To support the development of the market, a global European Hydrogen Facility providing initial and private investments is to be developed (European Commission, 2022f).

The Commission states that focusing on reducing consumption of Russian gas is not enough. Reducing other types of Russian fossil fuels imports such as oil, coal and nuclear fuel is also vital. At the time of writing REPowerEU (2022) Russia was the largest exporter of oil on the global market, shipping eight million barrels a day (bpd), and the second largest exporter overall (European Commission, 2022f). In 2023 it holds on to this position, even though an export of six bpd is expected (Seair Exim Solutions, 2023). The invasion has disrupted the oil market and increased prices. In order to ensure continued supply, stability and affordability, one of the key actions highlighted by the Commission is dialogue and cooperation with OPEC[10] and international organisations such as G7 and G20. Another key action is the coordination of EU response to possible supply disruptions. Furthermore, some nuclear power plants of EU countries are fully dependent of Russian nuclear fuel. In order to reduce this dependence, the Commission commits to supporting these countries in the diversification of their supply (European Commission, 2022f).

In order to ease diversification, the Commission stresses the importance of energy saving and efficiency. These measures are discussed in the EU Save Energy Communication, which we discussed above. One measure not mentioned in the EU Save Energy Communication is the implementation of the EU methane Strategy[11] and the Global Methane Pledge. This Pledge entails a 30% decrease of methane emission from 2020 levels by 2030 (Global Methane Pledge, n.d.).

[9] The Agenda for the Mediterranean is a multilateral cooperation initiative of the European Neighbourhood Policy (ENP). The ENP is framework facilitating political dialogue and financial and technical support with countries in the vicinity of Europe (EEAS, 2021). The Agenda focusses specifically on the Mediterranean neighbours of the EU.
[10] Organization of the Petroleum Exporting Countries
[11] A Communication of the Commission published in 2020 proposing measures to decrease methane consumption (Commission, 2020).

The Commission also highlights the importance to avoid new dependencies in the future. This is important in the context of the green transition, as this transition increases the demand for raw materials needed to fabricate green technologies (for example, lithium for batteries). The diversification of supply chains is key and will be supported by raw material value chain partnerships, with countries such as Ukraine, Norway, Namibia, the Western Balkans *et cetera*. Another way to reduce dependency is to focus on resource efficiency and circularity. (European Commission, 2022f). This can be done by promoting or mandating product design measures, something we mentioned before in the Ecodesign for Sustainable product Regulation (ut supra).

Other aspects mentioned in REPowerEU

The communication on REPowerEU also contained some other aspects proposed by the Commission. We will briefly discuss them here.

The Commission wants to rapidly increase the use of heat pumps. The Parliament supported this goal by proposing a deadline of one month for the permit-granting process for heat pumps in the RED (Parliament, 2022a).

Furthermore, the Commission wants to increase the use of biomethane. A Biomethane Action Plan was released on the same day as REPowerEU. It estimates that an additional EUR 37 billion is needed to increase the biomethane production to 35 bcm in 2030 (Commission, 2022g). This will not endanger the -55% GHG-emissions target by 2030, as these amounts should replace Russian imported gas.

Chapter 7: CPI in the policy output

The REPowerEU package introduced a number of targets and objectives. Looking at the CPI output for all these targets would go beyond the scope of this thesis. Therefore, we will only look at the targets changed by REPowerEU. Furthermore, estimating the effect of REPowerEU chapters on policy is very difficult. Therefore, we will not discuss this, but recommend this for future research. We will look at the gas consumption levels of the EU and to LNG consumption in particular.

Share of renewable energy target

In our conceptual framework, we compare the output of a policy with a situation containing ideal level of CPI. Therefore, we first need to determine what an ideal level of CPI would look like in 2050 concerning the share of renewable energy. The Green Deal introduces the objective to become climate neutral by that date. There are different scenarios mentioned to translate this objective to the share of renewable energy sources. Dupont (2016) mentions that different scenarios exist, ranging from a 55 % renewable energy share to 100%. The 100% scenario is mentioned in reports made by both NGO's (WWF, 2011) and researchers collaborating with PWC (PWC, 2011). Others have argued that nuclear energy and Carbon Capture and Storage (CCS) technologies should also play a role in achieving climate neutrality (for example, see Reichardt et al., 2012). Nuclear plants do not emit CO_2, while CCS prevents CO_2 – emissions before release in the atmosphere by capturing it during industrial activity or power generation and storing it back underground (Nationalgrid, n.d.). As Dupont (2016) mentions that CCS is still in development and nuclear energy is faced with opposition, she argues that renewable energy share should range between 80 and 100% in 2050 to achieve decarbonisation. However, we take an ever stronger approach. CCS technologies still are not being rapidly deployed and it seems that this will not change soon (Lau et al., 2021). Additionally, while the perception on nuclear energy has changed because of the war in Ukraine on both state (Simon, 2023) and public level (Századvég Foundation, 2023), other countries have closed down their nuclear plants (Germany) or will do so in the near future (Belgium). These closings are not counterbalanced by new openings, as only three new nuclear plants will be opened in the EU by 2030 (World Nuclear Association, 2023). The use of nuclear energy is also made more difficult by climate change. Nuclear power plants need a constant and assured supply of water to function, which has become more difficult during the extreme periods of drought in Europe (Barber, 2022). This is combined with the dependence on Russian nuclear fuel (see chapter 6), which also hinders a large increase of nuclear energy use. Furthermore, the IEA stated that the nuclear share of energy will be around 10 % in advanced economies by 2050 in a net-zero scenario (IEA, 2021). Therefore, we deem a range between 90% and 100% more realistic to achieve climate neutrality.

Second, we could opt for either a linear approach or an approach where we use an exponential growth. Dupont (2016) mentioned the possibility of a non-linear growth. Arguing that there were a lot of development costs for renewable energy sources in the early stages, the increase would start slowly and than increase faster. Using an exponential approach is more complex than a linear

approach and goes beyond the scope of this thesis. Furthermore, our results will show that the EU already needs a stark increase right now in order to achieve its objective. Thus, we will limit ourselves to a linear approach. Using an exponential approach could be interesting for further studies.

If we follow the interpretation of 100% use of renewable energy sources and a linear approach, we see that an increase of 13 percentage points (p.p.) is needed every five years to achieve full CPI. Considering that the share of renewable energy only increased by 16.4 p.p. in the last twenty years, this seems a very difficult task. If the EU maintains this current pace, it will only achieve a 46.6 % renewable energy share, which is totally inadequate to reach the climate neutrality. It could be argued that this pace will increase in the future, but this has not happened over the past twenty years, even though climate awareness has been growing. The increase rate has remained stuck around 4 p.p every five years.

The effects of the targets currently in place in the RED and in the provisional agreement on the Revision of the RED might increase the pace. However, it is important to remind ourselves that this is not a certitude, as the EU failed to increase this pace and achieve the targets of the 2001 and 2009 RED's (Dupont, 2016). Achieving the target of a 32% renewable energy share in the RED of 2018 means a 5 p.p. increase every five years. This is a marginal increase of EU's current pace and would result in a 52% share in 2050, which is still far from our 100% objective. Thus the current RED has medium levels of CPI output. If it want to achieve the new objectives laid down in REPowerEU in 2030, the EU needs to more than double the pace it had for the past twenty years. If we achieve this target and continue this pace of a 10.2 p.p. increase every five years, we end with a 83.5% renewable energy share. This result equals to a high to very high level of CPI.

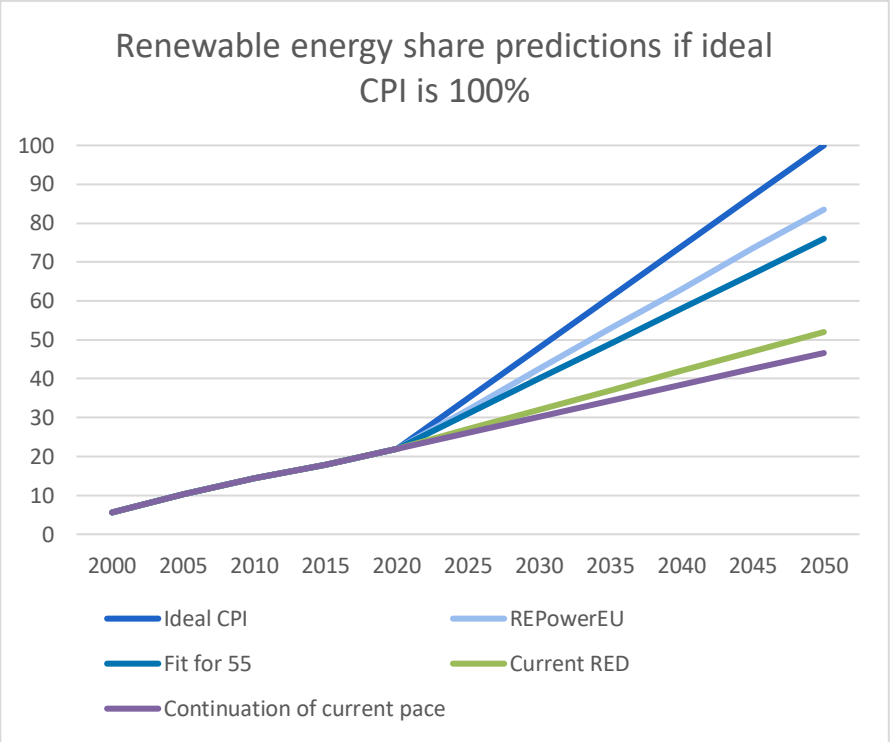

Figure 7.1: Renewable energy share predictions if ideal CPI is 100%. Source: (Dupont, 2016; Eurostat, 2023a & own calculations).

Year	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	▲
Ideal CPI	5.6	10.2	14.4	17.8	22	35	48	61	74	87	100	13
REPowerEU	5.6	10.2	14.4	17.8	22	32	42.5	53	63	73.5	83.5	10.2
Fit for 55	5.6	10.2	14.4	17.8	22	31	40	49	58	67	76	9
Current RED	5.6	10.2	14.4	17.8	22	27	32	37	42	47	52	5
Continuation of current pace	5.6	10.2	14.4	17.8	22	26.1	30.2	34.3	38.4	42.5	46.6	4.1

Table 7.1: Renewable energy share predictions if ideal CPI is 100%. Source: (Dupont, 2016; Eurostat, 2023a & own calculations).

Now, if we assume that nuclear energy will still be a part of our energy sources, the level of CPI is raised. In this case, the EU would only be 6.5 p.p short of reaching the climate objective. On a scale to 100 %, this corresponds to 92.7% of climate objective achieved. This equals to very high levels of CPI.

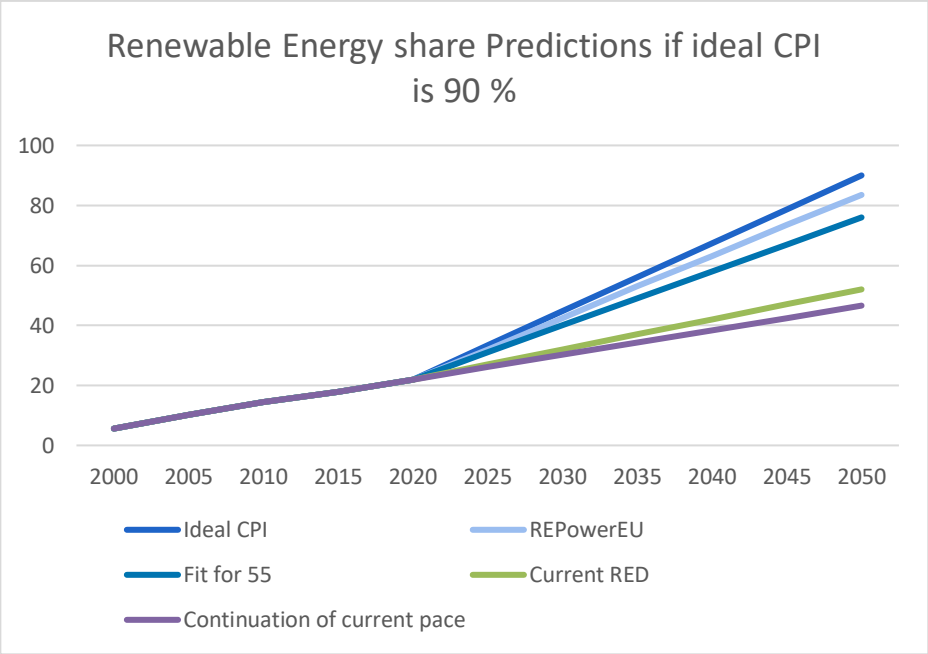

Figure 7.2: Renewable Energy share Predictions if ideal CPI is 90%. Source: (Dupont, 2016; Eurostat, 2023 & own calculations).

Year	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	▲
Ideal CPI	5.6	10.2	14.4	17.8	22	33.33	44.66	55.99	67.32	78.65	90	11.33
REPowerEU	5.6	10.2	14.4	17.8	22	32	42.5	53	63	73.5	83.5	10
Fit for 55	5.6	10.2	14.4	17.8	22	31	40	49	58	67	76	9
Current RED	5.6	10.2	14.4	17.8	22	27	32	37	42	47	52	5
Continuation of current pace	5.6	10.2	14.4	17.8	22	26.1	30.2	34.3	38.4	42.5	46.6	4.1

Table 7.2: Renewable energy share predictions if ideal CPI is 90%. Source: (Dupont, 2016; Eurostat, 2023 & own calculations).

It is important to mention that the longer the EU waits to act, the more difficult it will be to achieve full CPI levels. In her work, Dupont (2016) showed that in 2011, we needed a 9.7 p.p increase every five years to achieve 100% of renewable energy share in 2050. This is a far cry from the 13 p.p required today and even less than the 10.2 p.p. REPowerEU pace we need to achieve today to have a somewhat acceptable outcome in 2050.

In conclusion, it can be said that the level of CPI in the REPowerEU RED proposal is high to very high, *if* the EU manages to strongly increase its pace. We see an increase in the CPI levels compared to the 2001 and 2009 RED's (Dupont, 2016), which is positive. However, the slow implementation of renewable energy source now obligates the EU to rapidly increase its effort. Waiting even longer will requires a higher pace and will become more unrealistic when time goes on.

Energy performance of buildings

REPowerEU only changed the EPBD by introducing the deadlines on the installations of solar panels in buildings. We mentioned that we will only discuss the targets related to REPowerEU. However, we did want to include an analysis on building consumption, modelled after our analysis of the RED and the analysis of the EPBD in Dupont (2016). However, we did not find the right data our could not access it. Relevant data was present in the Odyssee Database from Enerdata, a specialized databank (Enerdata, n.d) and on the specialized website Statista (Statista, 2023). However, (parts of) these data required a subscription. These companies were contacted with the question if they could give us only the relevant information for free, but to no avail. Eurostat was freely accessible (and used in the other analyses), but did have different subdivisions of energy consumption (Eurostat, 2023a). Different authors and the EU itself use different definitions of what is understood within energy consumption in buildings, so it was difficult to determine which characteristics to select in the database. Furthermore, some reports use the unit of Mtoe (Commission, 2011; Dupont, 2016; Hall, 2020) while other used MT CO_2 equivalent (Commission, 2021b), GHG-emissions rate or exajoules (Statista, 2023). We did not find a conversion rate and failed to calculate one ourselves. Colleagues from a different background (engineering) were asked if they could calculate a conversion rate, but they could not provide an answer either. As looking at the CPI in policy output of the EPBD is not vital for our study, we decided to stop our search for solutions of these issues after three days. However, a more in-depth study with more means to access specific databases is certainly recommended by us.

However, we can say that the consumption of energy in the building sector has remained stable. This has negative consequences, as Dupont (2016) has shown that a drop to 200 Mtoe in 2050 is needed to achieve ideal CPI . Knowing that the energy consumption in buildings has been stable for the past 20 years around 450 Mtoe (Dupont, 2016 & figure 7.3), it is clear that a lot of work has to be done now. The previous versions of the EBPD contained only low levels of CPI. This meant that they only managed to stop a significant increase in energy consumption in buildings, and did not achieve a decrease (Dupont, 2016). We will not assign a level of CPI as we do not have enough information to look at the output of the current EPBD , but we do see that it will need to be very ambitious to achieve the climate objectives.

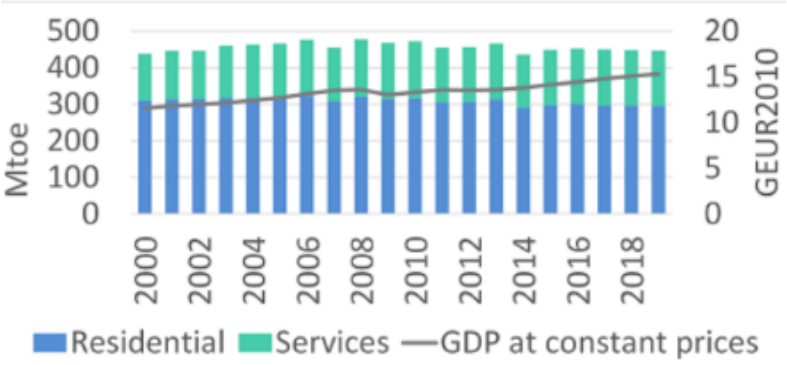

Figure 7.3: Energy consumption in residential and services in Mtoe (Enerdata, n.d.)

Energy efficiency Directive

We also had problems with measuring the output in the Energy Efficiency Directive. As said earlier, REPowerEU proposed to increase the energy efficiency target from 9% to 13%. The final agreement introduced a target of 11.5% (see chapter 6). However, these targets are for 2030. We found no estimates of how much energy saving is needed by 2050. We did find that the strategic long-term vision to reach net-zero GHG-emissions made by the Commission said that energy consumption need to be cut in half compared to 2005 (Commission, 2018). These estimates were made five years ago, so their relevance is questionable. An example of this is the fact that these estimates assume a nuclear energy share of around 15%, which we already showed will be difficult to achieve (ut supra). Therefore, we will use the targets used by the Climate Action Network and the Greens/EFA for ideal levels of CPI. They propose a target of a 20% energy reduction by 2030. This was close to the target of the Rapporteur of the EED, who proposed a 19% energy saving target (interview 3; CAN Europe, 2021).

Now, we could use a linear approach, just as we did with the RED. But assuming that the rate of our energy saving (in REPowerEU, 11.5% for every seven years) remains constant is not realistic. After all, the more efficient a system already is, the more difficult is becomes to find additional ways to save energy (Rosenfeld & Poskanzer, 2009). This problem becomes painfully clear when we use this method for the 20% energy savings proposal. Using a linear trajectory on their proposal would lead to a case were primary energy consumption is only 84.3 Mtoe and smaller than the 133 Mtoe final energy consumption. This is not a realistic outcome. This problem could be solved by using a logarithmic approach, but we did not find estimates how much the energy savings rate would slow down in the future. However, this could be a subject for future research. Thus, the following tables are more illustrative of the problems of using a linear approach when discussing energy saving rate. They offer little scientific value, but we include them nevertheless.

Year	2001	2006	2011	2016	2021	2026	2031	2036	2041	2046	2051	▲
CAN	1434.2	1511	1412.1	1364	1309	1104.5	900.8	696.5667	492.4667	288.3667	84.26667	204.8
Commission estimates	1434.2	1511	1412.1	1364	1309	1215.65	1122.3	1028.95	935.6	842.25	748.9	93.35
REPowerEU	1434.2	1511	1412.1	1364	1309	1151	993	835	677	519	361	158
Fit for 55	1434.2	1511	1412.1	1364	1309	1166	1023	880	737	594	451	143
Actual EED	1434.2	1511	1412.1	1364	1309	1218.5	1128	1037.5	947	856.5	766	90.5
Continuation of current phase	1434.2	1511	1412.1	1364	1309	1267.9	1226.8	1185.7	1144.6	1103.5	1062.4	41.1

Table 7.3: Primary energy consumption in 2051 in Mtoe according to EED targets. Source: (Can, 2021; Commission, 2018, Eurostat 2023 & own calculations).

Year	2001	2006	2011	2016	2021	2026	2031	2036	2041	2046	2051	▲
CAN	1002.9	1045.9	984.6	976.9	967.9	828.78	689.66	550.54	411.42	272.3	133.18	139.12
Commission estimates	1002.9	1045.9	984.6	976.9	967.9	893.359	818.818	744.277	669.736	595.195	520.65	74.541
REPowerEU	1002.9	1045.9	984.6	976.9	967.9	865.04	764	662.96	561.92	460.88	359.84	101.95
Fit for 55	1002.9	1045.9	984.6	976.9	967.9	877.45	787	696.55	606.1	515.65	425.2	90.45
Actual EED	1002.9	1045.9	984.6	976.9	967.9	906.95	846	785.05	724.1	663.15	602.2	60.95
Continuation of current phase	1002.9	1045.9	984.6	976.9	967.9	933.2	898.5	863.8	829.1	794.4	759.7	34.7

Table 7.4: Final energy consumption in 2051 in Mtoe according to EED targets. Source: (Can, 2021; Commission, 2018, Eurostat 2023& own calculations).

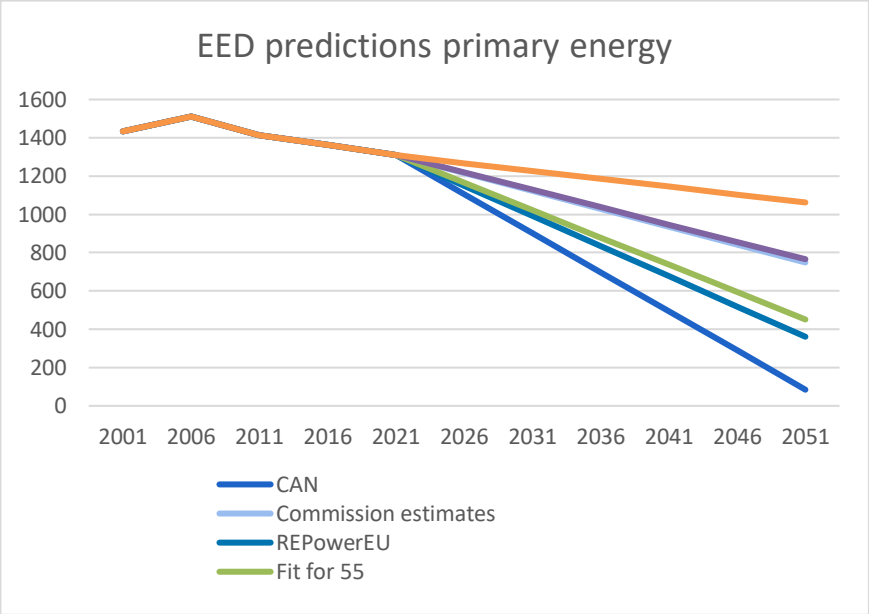

Figure 7.4: Primary energy consumption in 2051 in Mtoe according to EED targets. Source: (Can, 2021; Commission, 2018, Eurostat 2023 & own calculations).

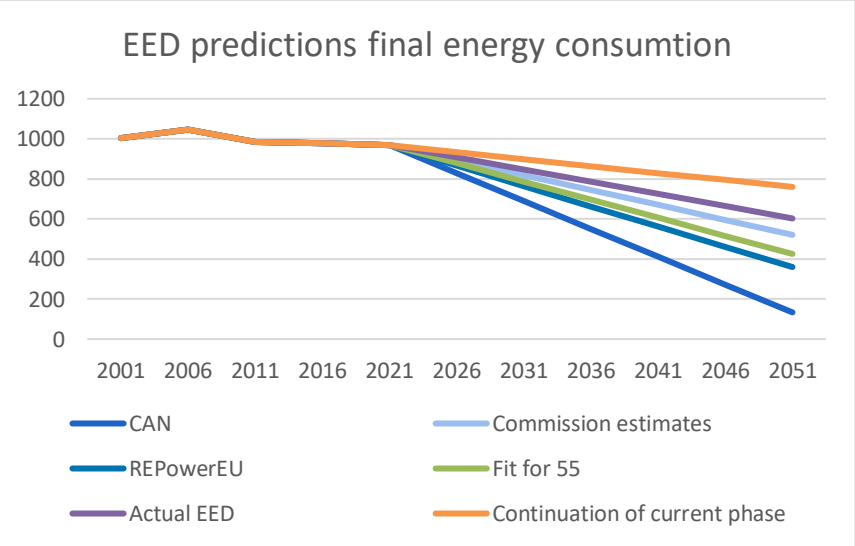

Figure 7.5: Final energy consumption in 2051 in Mtoe according to EED targets. Source: (Can, 2021; Commission, 2018, Eurostat 2023 & own calculations).

Therefore, we will limit our analysis to the targets set in 2030. These offer some more realistic expectations and as the period is quite short, we can use a linear approach. Here, we see that the REPowerEU target would significantly be lower than the target estimated by the Commission in both primary and final energy consumption (see tables 7.3 and 7.4 for detailed numbers). Even the

initial 9% energy saving target of 'Fit for 55' would be lower than the Commission estimates. Looking at the primary and final energy consumptions targets for ideal CPI, we see that REPowerEU would reach 110 % and 111% respectively of these targets. This corresponds with 90 and 89% of ideal CPI, or very high levels of CPI.

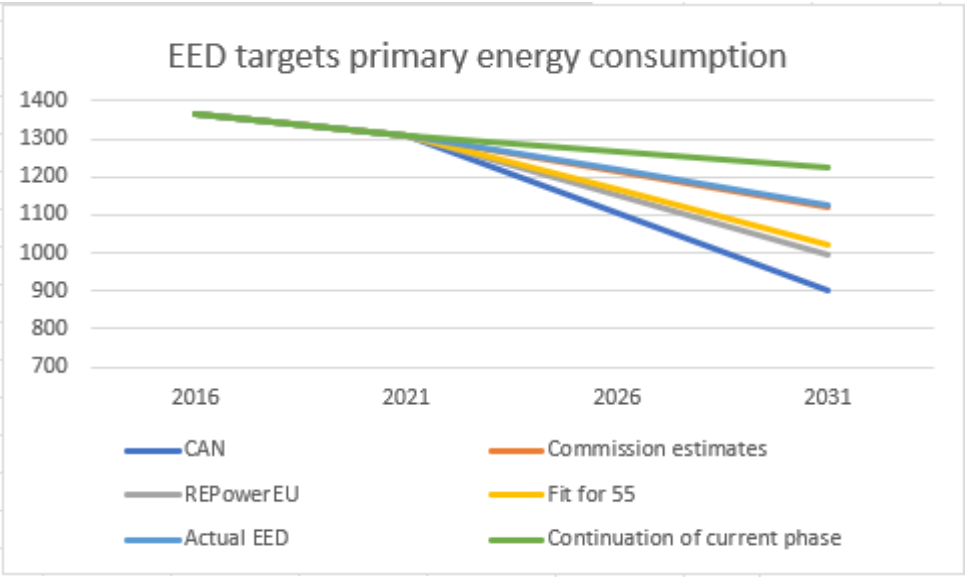

Figure 7.6: Primary energy consumption in 2031 in Mtoe according to EED targets. Source: (Can, 2021; Commission, 2018, Eurostat 2023 & own calculations).

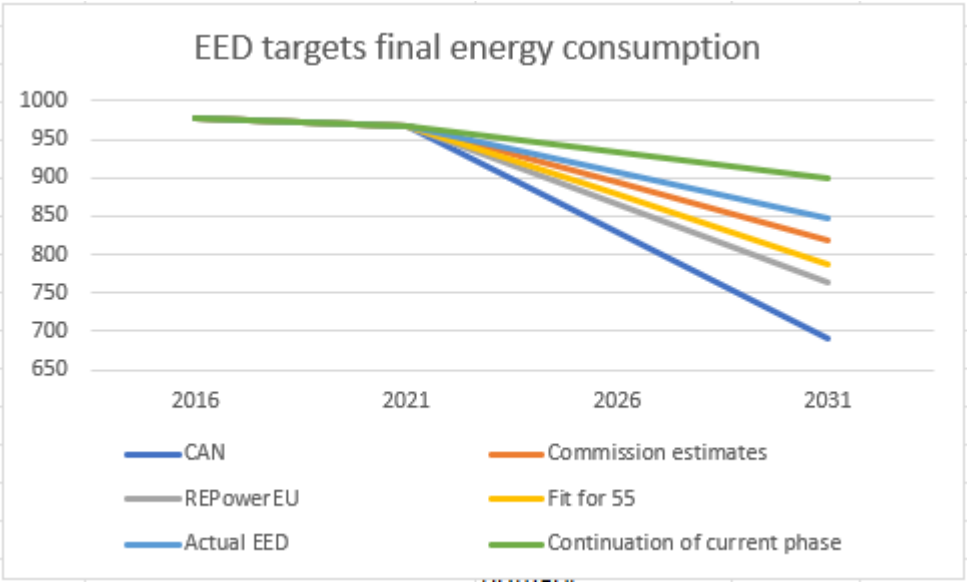

Figure 7.7: Final energy consumption in 2031 in Mtoe according to EED targets. Source: (Can, 2021; Commission, 2018, Eurostat 2023 & own calculations).

We feel obligated to explain why we chose to work with a different time scale compared to the previous analysis. We still used a five-year interval on the scale, but chose the years 2001, 2006, 2011 *et cetera*. We chose this option in order to avoid the unusual year 2020. In this year, energy consumption was abnormally lower compared to the previous years (-5.8% for primary and -5.4% for final energy consumption) (see figure 7.8). This can be explained by the restrictions introduced to combat the COVID-19 pandemic (Eurostat, 2021). This choice causes a problem with our benchmark year. We mentioned that we would use the climate goals for 2050 as a benchmark, and not the goals for 2051 (which do not even exist). However, the Green Deal and the Climate Law are rather unclear about which specific date the climate goals should be made, merely stating 'by 2050' (Regulation (EU) 2021/1119, 2021). This can be both the beginning of the end of 2050. If we interpret this as the end of 2050, namely December 31 2050, we could argue that the differences between this date and January first are negligible. Thus, we deem the advantages of avoiding the abnormal datapoint 2020 as more important than a minimal difference between the year 2050 and 2051. We did not do this for our analysis in the output of the RED, as the difference between the share of renewable energy between 2020 and 2021 (22% and 21.8% respectively) (Eurostat, 2023) is negligible.

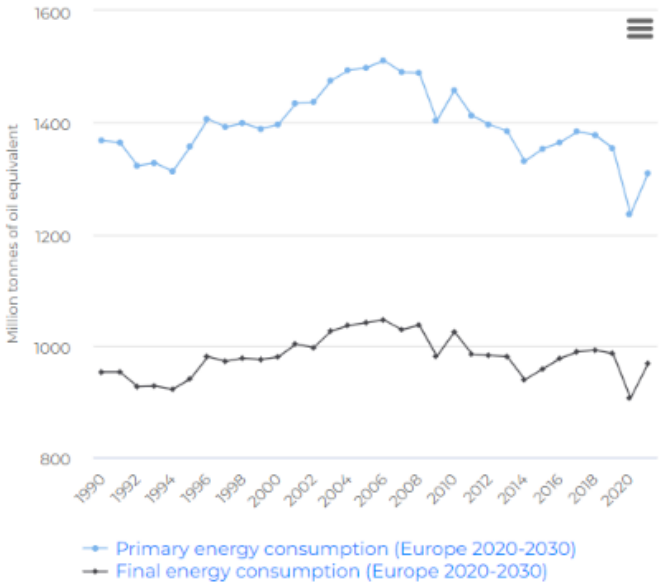

Figure 7.8: Energy consumption EU. Note the unusual year 2020. (Eurostat, 2023).

Gas consumption

As mentioned above, REPowerEU will replace Russian pipeline gas by importing gas from other countries (see figure 7.9). However, this focus on importing LNG and investing in long-term infrastructure could have negative impacts on climate objectives. The interviews also mentioned that this discussion took place within the Parliament, where some political groups wanted to only focus on energy security during this crisis. Furthermore, the Czech Presidency managed to secure

funding for the Druzbha pipeline project, which normally would not be eligible for funding (interview 1). We will briefly discuss this focus on gas consumption.

Russian gas has partly been replaced by imports of LNG, particularly from the United States. This country almost doubled its LNG imports to the Union (Council, 2023a). The increase in demand of LNG can also be seen in figure 7.13. Consuming more LNG could jeopardize climate objectives, as LNG emits far more CO_2 compared to piped gas (Rystad Energy, 2022 in Bose, 2022).

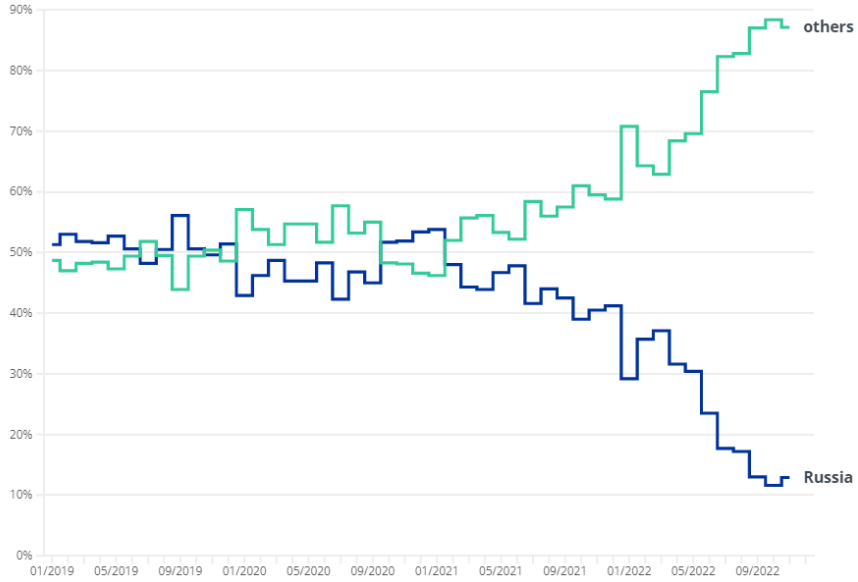

Figure 7.9: The EU's diversification away from Russian gas imports (Council 2023a).

However, we see that GHG-emissions have been 4.1% lower in the winter of 2022 compared to the winter of 2021, the last winter before the war (figure 7.10). Thus, an increased use of LNG does seem to be alleviated by a decrease in overall gas demand, which is down 17.7% in the period August 2022-March 2023 (figure 7.11). This is linked to the overall drop in energy consumption (figure 7.12). But, only in the burning phase does LNG emit the same amount of GHG's as compared to piped gas. The excess of GHG's happens in the production phase of LNG, which requires to be cooled to extremely low temperatures of around -160 °C. As the production phase of imported gas happens outside of the EU, the surplus of GHG's emissions is not shown in figure 7.10, as it only focusses on inland GHG-emissions. Rystad Energy claims that an additional 35 million tonnes of carbon emissions will be created because of the focus on LNG. (Rystad Energy in Bose, 2022). Climate change does not stop at the border of the EU, so relying on LNG for a longer period of time would still damage the climate, even if it happens in other parts of the world. The focus on LNG might be understandable from an energy security perspective and will be somewhat eased by a decrease in overall energy consumption, but it must be replaced quickly by clean energy if we want to combat global warming.

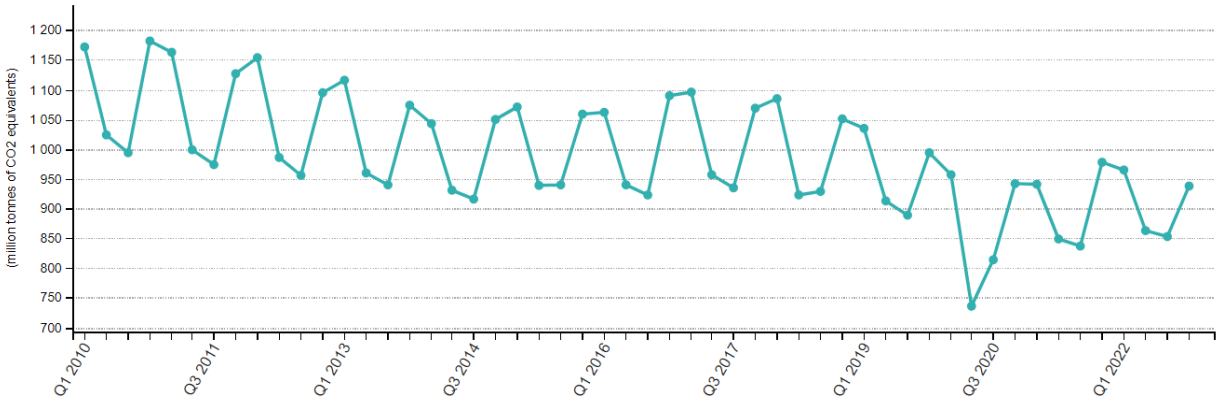

Figure 7.10: Greenhouse gas emissions- all activities and households, EU, 2010-2022 (Eurostat, 2023b).

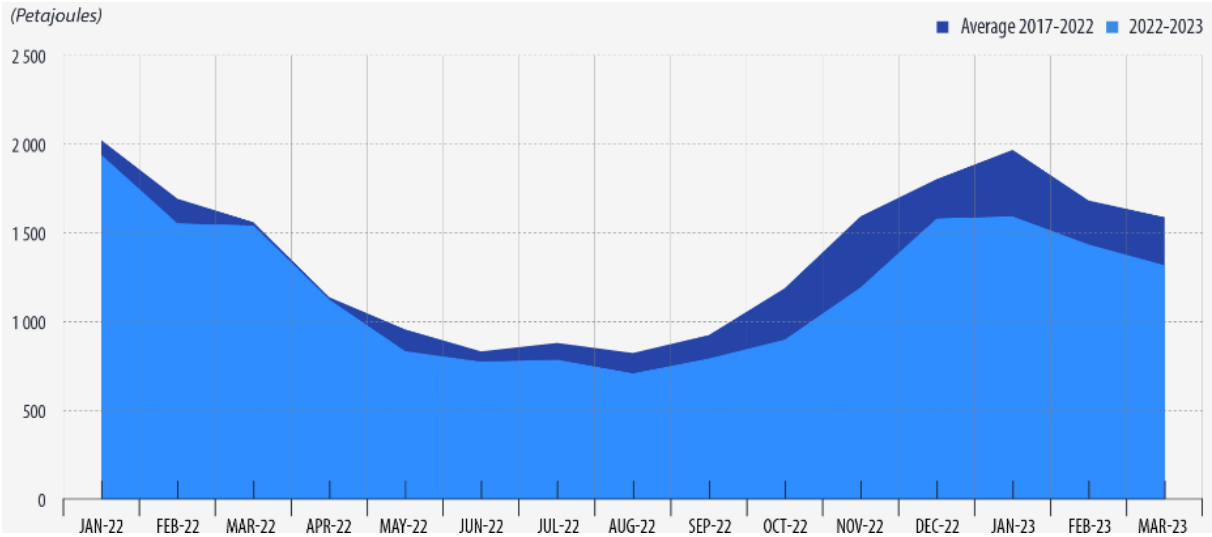

Figure 7.11: EU natural gas consumption, 2017-2023 (Eurostat, 2023c).

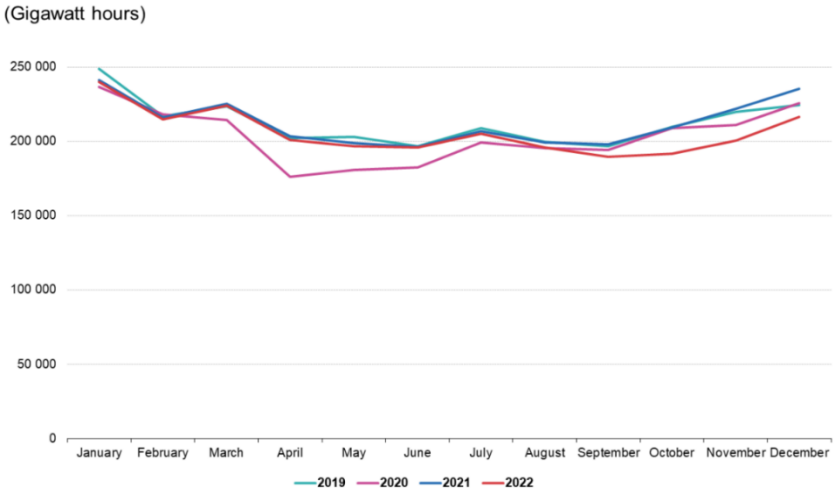

Figure 7.12: Electricity consumption 2019-2022 (Eurostat, 2023d).

Additionally, the increased demand in LNG will need specialised and expensive infrastructure. Investments in this type of infrastructure is part of REPowerEU. However, it seems that the EU is too eager with its investments in LNG infrastructure, which can compromise climate objectives in the long-term. An analysis by the Institute for Energy Economics and Financial Analysis (IEEFA) estimates that current investment plans would lead to a LNG terminal capacity of 400 bcm by 2030. Even so, an increase in the share of renewable energy and the focus on energy savings would lead to a decrease in gas demand in the mid and long-term. By 2030, the Institute predicts that a capacity of 150 bcm would be sufficient, leaving infrastructure worth of 250 bcm capacity and billion euro's unused (figure 7.13) (IEEFA, 2022 in Cooper 2023). Another study by think tank E3G says that a full implementation of REPowerEU measures would lead to a demand of 188 bcm in 2030 or a reduction of 52 % (Johnston et al., 2022). We do have to mention that these studies were released in 2022, before final agreements were reached on REPowerEU proposals. Nevertheless, it is clear that a lot of infrastructure being planned or built right now will not be needed in the future. Critiques have argued this could influence policymakers to not decrease gas consumption, as they want to use the expensive infrastructure (Aitken, 2022). Some of this excess infrastructure is expected to be converted to hydrogen infrastructure, but a spokesperson from the Institute warned that this is still uncertain due to technical challenges (Cooper, 2023).

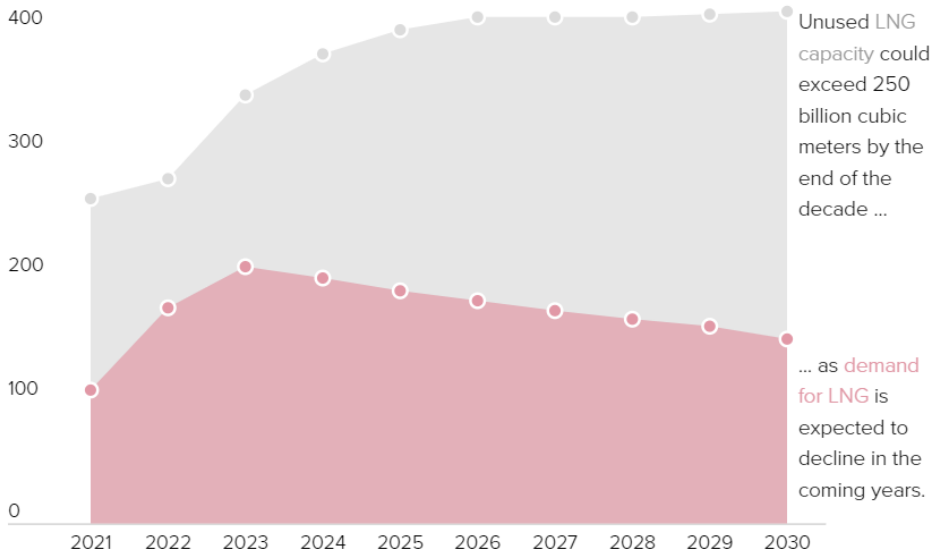

Figure 7.13: Projected LNG build-out capacity and demand in Europe by 2030, in bcm. Source: (Institute for Energy and Financial Analysis, 2023 in Cooper 2023)

Investing huge amounts of time and resources in unnecessary fossil fuel infrastructure and possibly locking policy makers in negatively impacts CPI levels. The framework in policy output does not directly allow us to assign levels of CPI, as we would need a target representing the level of ideal

CPI in 2050 and an estimated level of gas demand in 2050. It is difficult to determine how the investments in infrastructure and the energy saving will influence gas demand and GHG-emissions.

Furthermore, the excess GHG-emissions caused by using LNG production are not registered in EU data. However, Dupont (2016) stated that abandoning policies that support investment in gas import infrastructure (for example, LNG terminals), contains the highest level of CPI. She argued that there was no need for further investments, as the already existing infrastructure at that time was expected to be adequate to meet the gas demand until the green transition is finished. However, she could not know at that time that some of that infrastructure would fall in disuse because of the invasion. So, we can understand that investments in some infrastructure is now needed to replace infrastructure linked to Russia. However, excessive investing in infrastructure that would possibly be useless in a decade and risking locking in policy makers is not needed and will harm climate objectives. We follow the same reasoning as the use of LNG. A short-term increase of LNG is necessary to keep the lights on, but policymakers must understand that the use of LNG causes an increase in GHG-emissions across the world. The investments in LNG suggest that they do not understand this. Therefore, we assign a level of low-medium of CPI.

Aggregate level of CPI in policy output

The following table gives an overview of the levels of CPI in the policy output of REPowerEU. The aggregate was calculated by assigning each level a value on a scale from one to five and than determining the average of said values. Overall, the level of CPI in the policy output of REPowerEU will be high, *if* the targets will be implemented accordingly.

Part of REPowerEU	Level of CPI in policy output	Aggregate
RED	High-Very High (4.5)	High (4)
EPBD	Not measurable at the moment	
EED	Very High (5)	
Gas Consumption	Low-Medium (2.5)	

Table 7.5: Aggregate CPI levels in REPowerEU in policy output.

Chapter 8: CPI in the Policy Process

In this chapter, we will look at CPI in the policy process. This will be done by process tracing and using the conceptual framework of Dupont (2016). She looks at the involvement of internal and external pro-climate stakeholders and whether or not functional interrelations are recognized.

Internal pro-climate stakeholders

REPowerEU chapters

For the Commission, this regulation was drafted by the Secretariat-General. The Legislative Observatory mentions that the responsible Commissioner was Dombrowskis Valdis (European Parliament, 2023a). We did not find which DG's were leading the internal negotiations within the Commission. Therefore, we will look at the Commission as a whole. In chapter 3, we mentioned that with the Green Deal, the Commission extents CPI to virtually all policy sectors (Oberthür & Von Homeyer, 2023). In the presentation of the whole REPowerEU policy package, von der Leyen mentioned that it will *"be the speed charging of our European Green Deal"* (von der Leyen, 2022 in Wanat & Hernandez, 2022). The unique opportunity to accelerate the green transition was also frequently mentioned in the documents. For the proposal on REPowerEU chapters in particular, we see that the Commission focused on developing a "green skilled" workforce and the increase in investment of renewable energy infrastructure. However, it did want to make investments in not only gas but also oil infrastructure possible and wanted to have possible exemptions from the DNSH-principle, citing energy security reasons (Commission, 2022b). Therefore, we assign a high level of CPI.

For the Parliament, the proposal was referred to the joint Budgets (BUDG) and Economic and Monetary Affairs (ECON) committees of the Parliament. These committees are not classified as pro-climate stakeholders. The Rapporteurs were Eidar Gardiazabal Rubial (S&D), Siegfried Mureşan (PPE) and Dragoş Pîslaru (Renew). The ENVI Committee was only involved as an associated Committee (D'Alfonso, 2023). However, its involvement was rather significant. It wanted to include an investment maximum of EUR 10 billion in gas infrastructure, thereby trying to lessen the risk of building too much gas infrastructure (see above). It also wanted an encouragement for member states to roam excessive profits from energy companies. These proposals were not accepted (Parliament, 2022c). Proposed referrals to the importance of achieving climate goals, the Green Deal and the Paris Agreements were also not accepted. It was also proposed that at least 50 % of funding of a REPowerEU chapter was allocated to cross-border projects. This was lowered to 35% in the position of the Parliament. The Committee also proposed a deadline for the possibility of a derogation of the DNSH principle. The deadline proposed was 30 June 2024. This was delayed to 31 December 2024 in the position and delayed again to 31 December 2026 in the final agreement. Additionally, the Committee's proposal to not support investments in oil infrastructure with REPowerEU funding was accepted in the position and later on in the final

agreement as well (though exemptions are possible). Furthermore, the alternative way of funding REPowerEU proposed in the position of the Parliament was proposed by the ENVI committee (Parliament, 2022c). On this issue, a compromise was reached in the final agreement (see chapter 6). Thus, some important changes were proposed by the ENVI Committee and were (partially) accepted in the positions and the final agreement. However, the Committee did not lead the negotiations. On our scale of CPI in the policy process, this results in a high level of CPI.

Other Associated Committees weere not pro-climate (REGI, AGRI and ITRE[12]), as they advocated for the inclusion of oil investments and the removal of the DNSH principle (Parliament, 2022c). The interviewee involved in this process mentions that there were a lot of different positions between the Committees. Furthermore, each one of them had their own competences (interview 1). However, it seems ENVI managed to defend some of its proposals, thus suggesting that it was a co-decider and the other Committees did not dominate the internal negotiations of the Parliament. This confirms our initial assignment of high levels of CPI

For the Council, the General Affairs configuration was involved. This is not considered a pro-climate stakeholder. While Dupont (2016) highlights the importance of the presidency, this seems to not be the case during these negotiations. At that time, the Czech Republic held the Presidency. This Presidency has been criticized for being not ambitious enough (see further). Furthermore, one interview showed that the Presidency used its position to secure funding for the Druzbha pipeline trough the Czech Republic, which would normally not be eligible for funding (interview 3). Some member states did not agree to use money from the Innovation Fund as investment of the REPowerEU chapters, as these chapters also contain investments in gas infrastructure. However, the general approach of the Council still proposed to use EUR 5 billion from this fund (Taylor, 2022). Thus, countries leaning towards pro-climate objectives could not realize their objectives. Therefore, we deem the level of CPI in the Council as low. This correspondents with the trilogue negotiations, where climate related objectives were weakened in order to reach a compromise. For example, investment in oil infrastructure was made possible again, albeit under strict conditions. The possibility to use an exemption from the DNSH principle was also extented to 31 December 2026 (see chapter 6).

If we aggregate these levels, we find a CPI level of medium-high. The Commission took a strong pro-climate stance, while the ENVI Committee had significant impact on the negotiations in the Parliament, even though it did not lead the negotiations. Pro-climate stakeholders had few influence in the Council.

[12] Committee for Regional Development, Committee for Agricultural and Rural Development, Committee for Environment, Public Health and Food Safety.

REPowerEU legislative proposals

For the REPowerEU legislative proposals, we will look at the ordinary legislative procedures of the RED, EED and EPBD separately. As negotiations of these directives are still ongoing as of April 28 2023, we cannot give a complete overview of the procedure. Thus, we are forced to limit ourselves to the information that is currently available.

Renewable Energy Directive

For the Commission, the DG energy with Commissioner Kadri Simson was responsible for the draft (Parliament, 2022d). The Commission proposed significantly shortened deadlines to ease development of renewable energy share plants (Commission, 2022). Its proposal of a 45% (2.5 p.p. higher than the final agreement) share of renewable energy equals very high levels of CPI in the 100% renewable energy share scenario and ideal CPI in the 80% renewable energy share scenario (ut supra). Thus, we consider the Commission a pro-climate stakeholder and the levels of CPI very high.

For the Parliament, the ITRE was responsible for the draft, with the Rapporteur being MEP Markus Pieper (EPP). The ENVI Committee was an Associated Committee. The impact of ENVI can be described as significant. Following proposals of the ENVI were accepted:

- banning biomass[13] combustion plans in the renewable go-to areas,
- mandating an ecosystem approach[14] when identifying go-to areas at sea,
- including an obligation for member states to take appropriate actions to raise public acceptance of renewable energy projects,
- ensuring public participation in the identifying of go-to areas,
- proportionating the size of the go-to areas with the technologies they will contain,
- obligating the developer of renewable energy plants to provide information on the potential impact on the environment of these plants,
- prohibiting the creation of go-to areas in Birds Protection Areas and on marine mammal migratory routes (ENVI, 2022).

However, its proposals to ban hydropower plants from these areas, to limit the simplified environmental impact assessment for renewable energy plants until 2030, to make all the information related to the permit granting-process of renewable energy plants, to introduce simplified procedures for rooftop installations below 50 kW were not accepted (ENVI, 2022). Using the same reasoning as with the REPowerEU chapters proposal, we consider the levels of CPI high.

[13] Biomass combustion is the burning of organic materials. This organic material (either plants or animals) collect CO_2 during its lifetime. When this material is burned, this gas is returned into the atmosphere. This makes it essentially a near zero fuel (IEA, 2022). However, it also has drawbacks, such as air pollution created because of the burning and a possible increase in deforestation (McFarland, 2019).

[14] An ecosystem approach is a management approach of human activities aiming to achieve sustainable use of the ecosystem while maintaining its integrity (OSPAR Commission, n.d.).

We do not consider ITRE and AGRI Committees as pro-climate stakeholders. Its amendments mainly focused on the simplification of permit-granting procedures. For example, the ITRE committee proposed to remove a paragraph that stipulates that renewable energy plants are not of overriding public interest if they have major adverse effects on the environment (ITRE, 2022). The AGRI Committee focused mostly on agricultural matters. It proposed to include an amendment stating that the agricultural sector can play a key role in the green transition and to encourage the development of agri solar projects (see chapter 6). However, it proposed to include amendments to ensure that food production was prioritized over energy production, which was accepted. It also proposed to exclude agricultural land from becoming go-to areas, which was not accepted (AGRI, 2022). Thus, our assessment of high levels of CPI is confirmed.

For the Council, the Transport, Telecommunications and Energy Configuration was responsible (Wilson, 2023-a). This is not a pro-climate stakeholder. The role of Czech Presidency could also not be considered as pro-climate, because it has been criticized for showing no ambition and sticking to the 40% target that was proposed before REPowerEU (Simon, 2022). Furthermore, diplomats stated that several countries, including France and the Netherlands did not agree with the 45% target proposed in REPowerEU (Simon, 2022). Nine countries did support the 45%, Germany chief among them (Euractiv, 2022). While these countries have enough population to block a QMV, they are not numerous enough to push the 45% through the Council. Thus, it seems that pro-climate stakeholders were present in the Council, but were not strong enough to change the position of the Council. This results in low levels of CPI. The provisional agreement reached in March 2023 (Council, 2023) contained a 42,5% target. It seems that Sweden, which took over the Presidency after the Czech Republic, could not go too far in giving concessions and an agreement was made by meeting each other half way. This suggests that there was an equal balance in power between Parliament and Council during these negotiations.

If we aggregate these levels of CPI, we see that there are medium-high levels of CPI, though more leaning to the high side. The Commission had very high levels of CPI, while the Parliament had high levels of CPI. The Council did have some member states taking a strong pro-climate stance, but their influence did not impact the decision of the Council, resulting in low levels of CPI in this institution.

Energy performance of buildings Directive

The Commission's REPowerEU-related proposal to the EPBD introduced ambitious rules and deadlines for the installation of solar panels in buildings (ut supra) (Commission, 2022). While no more data is available at the moment about the impact of this proposal, we do consider it significant in achieving the climate objectives, thus we assign a very high level of CPI.

For the Council, the Transport, Telecommunications and Energy Council was responsible for adopting the general approach (Council, 2022d). This is not a pro-climate stakeholder. Once again,

the Czech Presidency seemed unable or unwilling to push pro-climate goals. During the negotiations within the Council, EPBD targets were weakened, including the solar panel installation targets. This also resulted in the removal of mandatory renovations for the buildings consuming the most energy. Seven countries wanted to be more ambitious, but did not succeed in achieving their goals (Kurmayer, 2022). This correlates with low levels of CPI.

For the Parliament, the ITRE Committee was made the responsible committee, with MEP Ciarán Cuffe (Greens) while the Transport Committee was the Associated Committee. The Transport Committee decided to not give an opinion (Parliament, 2023b). The ENVI Committee was not part of the legislative process, but still decided to give an opinion. The ENVI Committee not being a part of the legislative process has a negative impact on the levels of CPI. It proposed to change the dates of the deadlines to have solar-rooftop installations for buildings (ENVI, 2021). In the final text adopted by the Parliament, we can see that the impact of the ENVI Committee is rather small. This seems strange, considering that the Rapporteur was a member of the Green Party, which results in the ITRE Committee being classified as a pro-climate stakeholder. However, Rapporteur Cuffe has been faced with significant opposition regarding the inclusion of mandatory renovations and had to make numerous concessions in the ITRE proposal (for example, escape clauses) (Kurmayer, 2023). However, he successfully defended the mandatory renovations as a whole. Given that the ENVI Committee was not consulted and that the ITRE Committee had to make numerous concessions, we determine the levels of CPI as medium.

The ITRE proposal already faced significant opposition when it was voted upon in Parliament (Taylor, 2023). Eventually, it was accepted, but it immediately received significant opposition from member states such as Italy (which has a large stock of badly isolated historical buildings) and Poland (Kurmayer & Romano, 2023). Meanwhile, the German Government is said to withdraw its support for more ambitious targets as the consequence of an internal agreement on a national ban on fossil boilers (Kurmayer, 2023a). This opposition has resulted in Sweden stalling the trilogue negotiations (Kurmayer, 2023b). At the moment (21 May 2023), it is unclear how this will affect the final agreement. However, based on what we currently know, we consider the level of CPI in the EBPD medium. Nevertheless, this level might drop if the opposition against it grows stronger.

Energy Efficiency Directive

Concerning the REPowerEU related part of the EED, the Commission decided to increase the Energy savings target from 9% to 13% (Commission, 2022). A 13% target is higher than the 11.5% of the final agreement, which already led to very high levels of CPI. Therefore, we consider the level of CPI for the Commission very high.

For the Parliament, the ITRE Committee was made the responsible committee, with MEP Niels Fuglsang (S&D) as the Rapporteur, while the ENVI Committee was a Committee for opinion (Parliament, 2023c). The ENVI Committee published its opinion on 5 May 2022, thirteen days

before the introduction of the REPowerEU plan. Thus, it is very difficult to estimate its opinion on the REPowerEU-related proposals in the EED. We do have more information about the ITRE Committee. An article from Euractiv shows that it pushed hard to set the mandatory energy-saving target at 14,5% (Kurmayer, 2022a), which would equal to very high levels of CPI in the policy output. Thus, we can consider the ITRE Committee a pro-climate stakeholder in this case. The ITRE Committee was leading the negotiations within Parliament and managed to unite Parliament behind the proposal. However, we see that the Rapporteur and other parties wanted to go even higher initially, namely 19 and 20 % respectively (interview 3). Therefore, we will consider the level of CPI as high.

For the Council, the COREPER configuration was responsible for the EED (Wilson, 2023-b). This is not a pro-climate stakeholder. As mentioned earlier, the Council stuck to the pre-REPowerEU target of 9% energy reduction, which is a big gap compared to the Commission's 13%. Member states were split on the level of ambition with ten countries sticking to 9%, ten being flexible about the target and six wanting to increase to 13% (Taylor, 2023a). We did not find information about the position of the Swedish Presidency. The group wishing to stay at the 9% seems to have gained its wish, as general approach made under the Czech Presidency contains this target. Thus, we consider the level of CPI low. The provincial agreement reached in March 2023 contained a compromise by meeting each other in the middle (11,7%) (Widuto, 2023). Just like in the negotiation on the RED, this suggests an equal balance. The aggregate for the levels of CPI in the REPowerEU related articles in the EED is thus high.

Communications

For the communications, no ordinary legislative procedure took place. Therefore, only the internal procedure in the Commission can be studied. Like said earlier, it is difficult to collect information on this procedure. However, the Solar Energy, Save Energy and Speeding Up Permitting-Granting Procedures communications are very ambitious and contain a significant amount of targets related to climate objectives (ut surpra). Therefore, we can see the Commission as a pro-climate stakeholder in these cases and assign very high levels of CPI to these communications. The Commission's external engagement repeatedly states the importance of the Green Transition and renewable energy shares, but will also lead to a temporal increase of LNG. This is understandable from an energy security standpoint, but it has hidden the negative impact on climate change (ut supra). Therefore, we will only assign a high level of CPI. As assigning CPI to these communications is less precise because of the lack of information, we will calculate our aggregate level of CPI two times, both with and without the communications.

Aggregate

If we combine all these parts, we get the following table. Overall, the level of CPI for internal pro-climate stakeholders in REPowerEU is high-very high, leaning to high.

Part of REPowerEU	Level of CPI for internal pro-climate stakeholders involvement	Aggregate
REPowerEU chapters	Medium-High, (3.5)	High (4.1)
RED	Medium-high, leaning to high (3.7)	
EPBD	Medium (3)	
EED	Medium-high, leaning to high (3.7)	
EU Solar Energy	Very High (5)	
EU Save Energy	Very High (5)	
EU external energy engagement in a changing world	High (4)	
Recommendation on speeding up permit-granting procedures and facilitating Power Purchase Agreements	Very High (5)	

Table 8.1: Aggregate CPI levels in REPowerEU internal pro-climate stakeholders.

External pro-climate stakeholders

REPowerEU chapters

The Commission did not carry out an official stakeholder consultation for the proposal on the REPowerEU chapters. It stated that this would have been difficult in the limited timeframe REPowerEU was drafted (less than three months). The European Court of Auditors agreed with this reasoning (ECA, 2022), so there was no possibility for formal consultations in the initial stages of the legislative procedure. Furthermore, no impact assessment was carried out, also because of the urgency (Commission, 2022b). The interviewee of the Commission countered by saying that a lot of discussions with stakeholders already happened before the invasion on the RRF in general and that they build on that information (interview 2). However, we believe that the return of war to the European continent is a large enough incentive to change at least some opinions. Additionally, the proposal on REPowerEU chapters is much smaller and has its own characteristics compared to RRF. Thus, the assumption of the Commission that they can just build on previous consultation rounds

from three years ago about a similar, but still different legislation might not be correct. Therefore, we assign very low to low levels of CPI.

For the Council, previous studies (Bael, 2020; Dupont, 2016; Hauser, 2011) state that this institution is very rarely approached by external pro-climate stakeholders. These stakeholders often do not have the resources to lobby at member state level, which is a requirement for the Council. Instead, they tend to focus on the Parliament (and the Commission during the stakeholder consultations). These are very low levels of CPI.

For the Parliament, we see that for REPowerEU chapters, meetings between MEP's and pro-climate stakeholders did happen with the ENVI committee. For example, the Rapporteur for opinion of the ENVI Committee had meetings with Climate Action Network Europe and Replanet (Parliament, n.d.). Only one of the three Rapporteurs was transparent about her meetings, and she did not consult pro-climate stakeholders (Parliament, n.d.-a). However, according to an assistant closely involved, the Rapporteurs were always available for informal negotiations (interview 1). Furthermore, this input played a key role in obligating stakeholder consideration for projects included in the REPowerEU chapters, which was strongly opposed by the Council. Additionally, stakeholder involvement helped to diminish possible derogations from the DNSH-principle. We assign medium to high levels of CPI here, as there was stakeholder involvement, though there was staunch opposition against their opinions and little transparency. Overall, the levels of CPI for external pro-climate stakeholders in REPowerEU chapters are low.

REPowerEU legislative proposals

RED

For the REPowerEU legislative proposals for the RED, EPBD and EED, the Commission used a public consultation it had already launched before the invasion, on 18 January 2022 (Commission, 2022). This public consultation focused only on permit-granting procedures, and was to be used in the already planned Recommendation on permit-granting procedures (ut infra). The Commission did not use an additional stakeholder consultation specifically for the REPowerEU legislative proposals, citing the urgency of the proposals as the reason. Thus, only the parts focusing on permit-granting procedures of these proposals were accessible to stakeholders. Of the 155 valid feedback received, 86 came from businesses and 26 from business association, 7 came from NGO's and only 2 came from environmental organisations (for more details, see Annex 8) (Commission, 2022h). As formal procedures were in place but only for parts of the Directive, we consider the levels of CPI medium.

For the Council, we achieved the same outcome as with REPowerEU chapters. We could not find involvement of pro-climate stakeholders, so assess the level of CPI as very low.

For the Parliament, we see that the Rapporteur of ITRE met with pro-climate stakeholders such as Birdlife and the German Nature Conservation union (Parliament, n.d.-b). The shadow Rapporteur for the ITRE Committee also met with Climate action Europe (Parliament, 2022d). As our analysis showed that the ITRE Committee was not a pro-climate stakeholder in the RED (ut supra), the influence of these conversations seemed limited. Stakeholders including pro-climate stakeholders from industry, had also access to the Rapporteur of opinion of the ENVI Committee, as showed by a meeting between the ENVI Rapporteur and the Climate Bonds Initiative Europe (Parliament, n.d.-c). As access was assured but significant opposition was present, we consider the level of CPI medium. Overall, we consider the level of CPI for external pro-climate stakeholders low-medium.

EPBD & EED

On the proposals related to the EPBD and the EED, there was no input from external stakeholders possible, as only parts focusing on permit-granting were open to public consultation. Thus, this creates very low levels of CPI for the Commission. For the Council, the same situation as described in the previous paragraph applies. Consequently, there are also very low levels of CPI. For the Parliament, there were numerous meetings with pro-climate stakeholders for both directives. This corresponds with our classification of the ITRE Committee as a pro-climate stakeholder in these directives (ut supra). For the EPBD, Rapporteur Cuffe spend one third (15 out of 45) of his EBPD-related meetings since the announcement of REPowerEU with pro-climate stakeholders (Parliament, n.d.-d).

For the EED Rapporteur, we had a bit more difficulties determining the importance of pro-climate stakeholders. The database states that most of his meetings are related to energy in general and to the EED specifically. However, we believe it is safe to assume that the EED was at least discussed during this meetings. The interviewee related to the EED procedure confirmed this (interview 3). Taking this into account, we see that the Rapporteur had 39% (9 out of the 23) of his meetings with pro-climate stakeholders since the announcement of REPowerEU (Parliament, n.d.-e). Importantly, the stakeholders contacted the policymakers, not the other way around (interview 3). Given that there were a lot of meetings with stakeholders and that their views were supported, but that it was the stakeholders who had to ask for a meeting, we assign high levels of CPI in both the EPBD and the EED. Thus, the overall levels of CPI for external pro-climate stakeholders in the EBPD and EED related procedures is REPowerEU low.

Communications

For the Solar Energy Strategy, the consultations were started on 18 January 2022, approximately a month before the Invasion. This suggests that the Commission was planning on releasing a EU Solar Energy Strategy regardless of the Invasion. A lot of the stakeholders announced their viewpoints when the war had already started. Of the 191 participants, 59 were businesses, 21 Business organizations and 8 were NGO's (European Commission, 2022i). For a full overview; see Annex 7. We have no information on whether or not these stakeholders were in opposition with each other.

We do notice that their views were supported by the Commission as the creation of the EU large-scale skills partnership is an example of this (see chapter 6). This is combined with the fact that the Commission sought the opinion from external pro-climate stakeholders, but not only from them specifically. Therefore, we consider the level of CPI high.

The EU Save Energy and the Communication on external energy engagement did not have stakeholder procedures. This results in very low levels of CPI.

Strangely enough, the Recommendation on speeding up permit-granting procedures does not refer to its own public consultation (ut supra). Instead, it refers to insights on a study currently being carried out by the Commission on the simplification of permit-granting procedures. The interim report of this study states that it uses expert interviews, but is does not explain how interviewees are selected and who exactly was involved (though there is mentioning of NGO's interviewed) (European Commission et al., 2022). Furthermore, the stakeholders cannot give input on their own will, but have to be asked by the researchers. We could not find a reason why this recommendation refers does not refer to the public consultation. Thus, we consider this a low level of CPI.

Aggregate

If we combine all these parts of REPowerEU, we get the following table. This table shows that the level of CPI for the involvement of external pro-climate stakeholders in REPowerEU is low.

Part of REPowerEU	Level of CPI for external pro-climate stakeholders involvement	Aggregate
REPowerEU chapters	Low (2)	Low (2.1)
RED	Low-medium (2.5)	
EPBD	Low (2)	
EED	Low (2)	
EU Solar Energy	High (4)	
EU Save Energy	Very low (1)	
EU external energy engagement in a changing world	Very low (1)	
Recommendation on speeding up permit-granting procedures and facilitating Power Purchase Agreements	Low (2)	

Table 8.2: Aggregate CPI levels in REPowerEU external pro-climate stakeholders.

Recognition of functional interrelations

As said in the explanation of our conceptual framework, we will also look at whether or not actors recognize the interrelations between climate policy and energy policy. Climate policy and energy policy have a direct interrelation which each other. Furthermore, long term-climate objectives were recognized in the form of the climate neutrality to be achieved by 2050. There were also referrals to the Paris Agreement.

REPowerEU chapters

In its proposals on the inclusion of REPowerEU chapters in the NRRP's, the Commission immediately stated that the Russian Invasion has made it clear that there is a need for a *"rapid clean energy transition in line with the EU's 2030 climate targets and its 2050 climate neutrality objective"* (Commission, 2022b, p.2). The Council also showed understanding for the functional interrelationship. In its General Approach, it considered investments in renewable energy and in development of innovative solutions as vital for the Green Transition (Council, 2022c). The Parliament stated that an increase in the share of renewable energies was needed to accelerate the Green Transition (Parliament, 2022b). In the final agreement, there were multiple referrals to the 2030 and 2050 climate objectives. For example, it was explicitly stated that the exceptions of the DNSH-principle should not threaten these objectives (Regulation (EU) 2023/435, 2023). On this agreement, one of the Co-Rapporteurs commented that they "have negotiated a limited derogation to the "do no significant harm principle" *as we are determined to fight against climate change and not to endanger EU climate objectives.*" (Gardiazabal Rubial in Parliament, 2023d). Furthermore, investments in oil in were only allowed under very specific conditions (Regulation (EU) 2023/435, 2023). Additionally, the interviewees confirmed that politicians and institutions recognized the link between energy policy and climate policy. The interviewee of the Commission even mentioned that energy policy is climate policy (interview 2).

However, we cannot assign ideal levels of CPI, as investments in gas infrastructure and to a lesser extent, oil infrastructure conflict with the climate objectives. Policymakers have stated that this is vital to achieve energy independency from Russia. This can certainly be seen as a valid reason to increase investments in fossil fuels, however, this is conflicting with achieving climate policy objectives. Our output analysis also shows that the EU invests more in infrastructure that it will actually need in the future. Furthermore, we see that GHG-emissions created by the production of LNG are not taken into account in EU-related statistics. So, we see that climate policy objectives are a stated goal, but that not all policy actions seem to be geared towards achieving these goals. Therefore, we assign a level of medium to high levels of CPI.

REPowerEU Legislative proposals

RED

For the REPowerEU proposals related to the RED, all three institutions recognized the functional interrelationship by stating that *"renewable energy plays a fundamental role by 2050"* in their proposals (Commission, 2022, p.11; Council 2021a, p.15; Parliament, 2022, p.2). Additionally, when the provisional agreement was reached, the Commissioner for Energy stated that renewable energy sources are key to the climate goals (European Commission, 2023). Despite this recognition, the Council stuck to the 40% target and delayed the deadlines for applicable to renewable go-to areas(see annex 9). Despite this recognition, we saw that the 42,5% renewable energy target was not ambitious enough to reach ideal CPI. This can be explained by the division in the Council, where some member states did not agree with the 45% target (see internal-pro climate stakeholders). Thus, as achieving the climate goals is a stated policy goal but there are questions about the level of ambitiousness, is we consider the level of CPI as high.

EED

During the legislative procedure on the EED, all institutions recognized the interrelations between energy-saving and climate policy objectives. For the Commission, EU Commissaries for the Green Deal Frans Timmermans stated "saving energy is a key step to saving the planet" (Timmermans, 2023; in Kurmayer, 2023c). The Rapporteur of the Parliament stated that energy-savings benefit the climate (Kurmayer, 2023c). Additionally, the interview with assistant involved in the EED legislative procedure mentioned that energy efficiency plays a vital role in achieving 'Fit for 55' objectives. He also referred to a document of the IEA to support this link (interview 3). The Council made numerous referrals to the Green Transition and also the Paris Agreement (Council, 2022b). However, during the negotiations, the ambitions of both the Commission and Parliament (13% and 14.5% energy savings respectively) were watered down to because the Council did not want to go too far in the energy-savings target. Some activists stated that this was too little to achieve climate goals (Kurmayer, 2023c), though our policy analysis still shows that very high levels of CPI are achieved. Nevertheless, achieving climate policy objectives was a stated goal of the EED, but it seems that policy makers (mainly the Council) were not ambitious enough to achieve these goals. Thus, we consider the level of CPI in the REPowerEU-related articles of the EED as high.

EPBD

The recognition of the interrelations was also present in the EPBD, with policy makers often referring to the scientific reports (UN Environment Emissions Gap Report and IRP, Resource Efficiency and Climate Change) to prove the link between energy consumption of buildings and GHG emissions (Commission, 2021a). These prove that 36% of the GHG and 40% of energy consumption are caused by buildings. Additionally, Rapporteur Cuffe stated in an interview with Euractiv that the EPBD would lead to the '*deep decarbonization of Europe's buildings*' (Caffe, 2023, in Kurmayer, 2023d). However, because of internal disagreement, the Council has taken a more conservative stance (Kurmayer, 2022). Looking at the REPowerEU-related article in the

EPBD, we see that this is indeed the case. The Council delayed the deadlines for solar rooftop installations (see annex 6). As no provisional agreement is yet achieved, it is difficult to estimate the levels of CPI. However, we see that referrals to scientific sources and interrelations are made and that the Council adopts a less ambitious position than the Parliament and Commission. Thus, we state that we can see the same pattern as with the other two directives. Therefore, we estimate that a high level of CPI would be present in the recognition in the functional interrelations of the EPBD.

Communications

For the communications, the Commission referred to the 'Fit for 55' package, the Green Deal and the Green Transition multiple times. As stated above, the Commission envisions solar energy as a centrepiece and a 'main lever' to increase the share of renewable energy sources (Commission, 2022c). Furthermore, the targets it proposed are aimed at achieving REPowerEU targets, thus aimed at achieving climate policy objectives. The Save Energy Communication also referred to climate objectives multiple times and stated that saving energy is related to reducing GHG-emissions (Commission, 2022d). It also referred to the IPCC Assessment report to prove that changes in lifestyle can reduce energy consumption (IPCC, 2022). The Recommendation on speeding up permit-granting procedures stated that delays in permit procedures could put climate objectives at risk (Commission, 2022e). Thus, we consider the level of CPI in the communications very high.

The communication on the EU external engagement explicitly linked the Green Transition with the goal to become energy independent from Russia. It stated that: *"The green energy transition is the only way to simultaneously ensure sustainable, secure, and affordable energy worldwide."* (European Commission, 2022f, p.2). It also mentioned the importance of achieving SDG 7 (inclusive energy transition). It also used scientific sources, for example from IRENA to show the international technical potential for hydrogen (IRENA, n.d., in Commission, 2022f). However, it did refer to a temporal increase in fossil fuel consumption, LNG in particular. Therefore, we assign high levels of CPI to this communication.

Aggregate

Using the same method as the previous two factors, our results can be expressed in the following table.

Part of REPowerEU	Level of CPI for recognition of functional interrelationships	Aggregate
REPowerEU chapters	Medium-High (3.5)	High-Very High (4.3)
RED	High (4)	
EPBD	High (4)	
EED	High (4)	
EU Solar Energy	Very High (5)	
EU Save Energy	Very High (5)	
EU external energy engagement in a changing world	High (4)	
Recommendation on speeding up permit-granting procedures and facilitating Power Purchase Agreements	Very high (5)	

Table 8.3: Aggregate CPI levels in REPowerEU recognition of functional interrelationships.

Aggregate level of CPI in policy process

This table gives an aggregate of the levels of CPI in the policy process of REPowerEU.

Part of REPowerEU	Level of CPI in policy output	Aggregate
Internal pro-climate stakeholder involvement	High (4.1) Without communications, medium-high (3.5)	Medium-High (3.5)
External pro-climate stakeholder involvement	Low (2.1) Without communications Low (2.1)	
Recognition of functional interrelations	High-Very High, leaning to high (4.3) Without communications High (3.9)	

Table 8.4: Aggregate CPI levels in REPowerEU policy process.

Chapter 9: Explaining CPI

Our analysis showed that REPowerEU has high levels of CPI in the policy output and medium-high levels of CPI in the policy process. We will now use our analytical framework mentioned in chapter 5 to explain these levels.

Functional Interrelationships

The functional interrelationships between energy policy and climate policy are direct. Energy policy and climate policy are closely linked to each other in numerous ways. Energy is responsible for 75% of the GHG-emissions in Europe (ut supra). This direct relationship can be either synergetic or conflictual. For the directives, we see that this relationship is synergetic. Increasing the share of renewable energy sources and saving energy directly contribute to achieving climate objectives. The communications, which focus on increasing solar energy and energy saving and speeding up permitting procedures, were also subject to a direct and synergetic relationship. However, for the REPowerEU chapters and the external energy engagement, we see that investments in gas infrastructure, and in exceptional cases oil infrastructure, are tolerated to ensure energy security. This negatively affects the climate objectives. Here, we see a conflictual direct relationship. This translates into a lower level of CPI in the both of these policy documents. Thus, direct synergetic relations lead to higher levels of CPI, why direct conflictual relationships do the opposite.

Political Commitment

Overall, the political commitment to combat climate change is high. The Green Deal was a turning point in climate policy (Dupont et al., 2020) and the Climate Law has obligated politicians and member states to achieve the climate objectives. Looking at these member states, we see that political commitment did not translate to high levels of CPI in the Council.

However, thinking back to the viewpoint of new institutionalism, we also have to look at the Commission and the Parliament. Here, we see that political commitment in the Parliament depends on the parties, though most of them agree that something should be done about climate change. On the other hand, the von der Leyen-Commission has shown a significant political commitment in our analysis. The Green Deal expanded the level of CPI trough all sectors (Oberthür & Von Homeyer, 2023) and REPowerEU builds further on this. This clearly shows that the Commission continues its pro-climate course. It was the Commission that was determined to achieve energy independence from Russia by accelerating the Green Transition (interview 2). When analysing it as an internal stakeholder, we consistency found high or very high levels of CPI. Therefore, we label the Commission as a whole a pro-climate actor. This significant change can be explained by numerous factors, which justifies its own study. The leadership-style of von der Leyen could be one of them, as this has been shown to affect CPI (Rietig & Dupont, 2021). Furthermore, she vested the credibility of her Commission in the success of the EDG by testifying that it is the Commission's signature policy (Dupont et al., 2020).

Institutional and Policy Context

We see that the procedure of decision-making has an impact on the level of CPI. In the Parliament, a simple majority is enough to pass *green* legislation, even if it is met with significant opposition. This helped the Rapporteur of the EPBD to push his proposal, with reasonable levels of CPI, through a divided Parliament, with a lot of opposition. In the Council, ambitious member states were not able to push through pro-climate objectives. We saw that this was the case in all three directives and the Regulation. This can partly be explained by the use of QMV, which makes a simple majority insufficient to pass legislation. This resulted in low(er) levels of CPI. Thus, the institutional context definitely influenced the levels of CPI. This corresponds with the studies of Bael(2020) and Dupont (2016).

The policy context was undoubtedly dominated by the Invasion of Russia in Ukraine. The Russian Invasion has been used by policymakers as an opportunity to accelerate the Green Transition (ut supra). Traditional fossil-fuel-dependent countries are now all committed to increase their renewable energy production, as they want to avoid to become once more dependent on the expansionist Russian regime. For example, Poland, normally a coal-focused country, has increased its wind power by 21.7 % in the last year (Maguire, 2023). This can explain the high levels of CPI in policy output in the RED and EED. On the other hand, our analysis showed that GHG-emissions will rise because of increased LNG use and unnecessary amounts of money are invested in gas infrastructure (see chapter 7). This can explain why the levels of CPI in gas consumption are lower.

However, the fact that in this crisis, climate policy objectives were not pushed aside is remarkable. In previous crises, this did happen (Wolff & Ladi, 2020). Thus, it is clear that policymakers recognize the importance of climate policy objectives. This also shows that they are not only thinking about short-term goals, but also about mid-term goals such as ‘Fit for 55’ in 2030 and long-term goals such as achieving net-zero neutrality in 2050.

Time

The time variable helps to explain the negative impact of the possibilities of public consultation on CPI levels. The Commission did not start public consultations or used already started consultations procedures. This resulted in low level of CPI, but only measured at the involvement of external pro-climate stakeholders. The other levels of CPI were not affected by this. Furthermore, the external stakeholder lobbying in Parliament was not impacted by the short time frame. There was still a lot of interaction between MEP’s and stakeholders, including pro-climate stakeholders. The difference in time (3 months in the Commission against 7-11 months in Parliament) might explain why there was more room for interaction. However, an in-depth study might be needed to provide clarity on this topic.

CPI in the policy process

As mentioned earlier, a thorough analysis of CPI in policy output is made difficult by the scale of REPowerEU and the fact that it is still in the implementation phase. Therefore, it is difficult to estimate how CPI in the policy output is influenced by CPI in the policy process. This might be the reason why CPI in the policy output is higher than CPI in the policy process. Normally, this should not be the case (Briassoulis, 2005). However, it can also be argued that this is caused by the low level of involvement of external climate stakeholders because of the short time frame. This is another reason why the time variable should be included in the analytical framework.

Nevertheless, the policy process certainly does have influence on the policy output. For example, the Council managed to lower the RED, and thus the levels of CPI in the policy output. Additionally, the involvement of external pro-climate stakeholders led to the strengthening of the DNSH principle in the REPowerEU chapters (interview 1).

The RED and the EED have the highest levels of CPI in the policy process, which results in the highest levels in the policy output. The REPowerEU chapters and the external engagement,have lower levels of CPI in the policy process, which results in lower levels in the policy output. Thus, it seems this variable needs to be broken down in order to get more explanatory value. This corresponds with the results of Dupont (2016).

Chapter 10 Policy recommendations

We see that the EU really needs to act now in order to achieve its climate goals. The Renewable Energy Directive might serve as the best example of this statement. In 2011, the Union only needed a 9.7 p.p. increase every five years to reach 100% of renewable energy share in 2050 and ideal CPI (Dupont, 2016). Today, the EU needs 13 p.p every five year to reach 100%. The current REPowerEU objectives should, if implemented well, result in a 10.2 p.p. increase and lead to a renewable energy share of 83.5% in 2050, far less than the 100%. Thus, if the EU wants to have a still decent outcome in 2050, it will need to maintain a high but still achievable pace. If it waits any longer, the pace it would need to follow would become unrealistic. Thus, keeping the manta *better late than never in mind*, now is the last realistic change for the EU to achieve its climate goals.

Furthermore, they should be wary of focussing too much on gas infrastructure. We certainly understand that a temporal increase in gas consumption is needed to become energy independent. However, our analysis shows that with the current proposals, the EU will have more than double the amount of gas infrastructure it actually needs. We propose to re-assess these investments and only use them for achieving energy security in the short-term and (if necessary) medium-term. Long-term investments are a waste of money and resources, and can better be used to accelerate the installation of renewable energy plants or ease the effects of the Green Transition for the weakest in our society.

This is tied to the use of LNG. Policy makers should understand that using LNG emits far more emissions compared to pipeline gas. This happens during the production phase of LNG, in countries far away from the EU. Thus, this increase does not show up in the in EU-statistics. However, climate change does not stop or start at the EU borders. If the EU wants to achieve its goal of becoming the global leader in combatting climate change, it should achieve this by being a good example for other countries and collaborating with them, not by being a bad neighbour and just dumping its trash at the communal park. We understand that the use of LNG is necessary to achieve energy independence and to stop funding the Russian war chest, but policy makers should understand the risks of using LNG.

Nevertheless, we want to applaud policy makers for not pushing climate objectives away like in the past crises. There were brave individuals and groups who managed to convince the EU that the Green Transition is the only valuable long-term solution. This new shift, the ardent defence of the climate objectives and the surprising strengthening of existing targets offer a sprinkle of hope in the battle against climate change.

Chapter 11: Conclusion

Conclusion of the study

REPowerEU has high levels of CPI in the policy output and medium-high levels of CPI in the policy process. It has proven that policymakers can respect and even strengthen (some) climate policy targets in the face of a crisis. The unjust invasion of Ukraine has incentivized politicians to strengthen and accelerate the Green Deal. Taking the initiative, the whole Commission has shown itself as a pro-climate stakeholder, and not only individual DG's. One possible explanation for this shift could be the leadership style of von der Leyen. We also see an increase in the recognition of the functional interrelations and the importance of achieving climate objectives.

REPowerEU was, however, hampered by the low involvement of external pro-climate stakeholders. The short period of time available has made stakeholder consultations difficult. This is especially the case in the Commission, though they claimed to build further on past stakeholder consultations. However, we argued that this is not a viable alternative. External pro-climate stakeholder involvement was better in the Parliament, where they helped strengthening the DNSH-principle.

In the Council, more ambitious countries were blocked by the limits of the Institution, in particular the QMV voting system. Furthermore, it remains the least transparent Institution, making it difficult to assess the level of CPI in detail. However, we do see that the Council now recognizes the functional interrelations and the importance of climate policy.

We also see that in REPowerEU, there is a focus on using gas and developing gas infrastructure. From an energy security perspective, this is understandable, as the EU needs to be energy independent from Russia as quickly as possible. However, our analysis showed that there will be too much invested in gas infrastructure, LNG infrastructure in particular. The EU will end up with far more infrastructure than it actually needs. Additionally, policymakers should understand that using LNG means emitting far more GHG's than mentioned in in the European statistics.

However, the REPowerEU proposals have increased the targets that otherwise would have been lower. For example, the Commission's initial proposal was to raise the share of renewable energy target form 31% to 40%. REPowerEU proposed to increase this to 45%, and the provisional agreement now has a 42.5% target. This has increased the (potential) levels of CPI in the policy output to high-very high levels. Without the Invasion of Ukraine and REPowerEU, it seems very unlikely that the initial proposal of 40% would have been raised to 42.5% during trilogue negotiations. It is much more likely that this 40% proposal would have been downgraded. So, REPowerEU has increased the strength of the climate goals and the levels of CPI in the EU's energy policy. Nevertheless, we once again stress that the actual implementation of this plan still need to happen and that the longer we wait, the more difficult it will becomes to achieve our objectives.

Critical reflection

As every decent study, we are critical for our own research. First, we will be critical for our framework. We could mention the fact that we do not use a weighted score in our conceptual framework. This means that we assume that the influence of every variable in this framework is equal. But there is no evidence that the influence of external pro-climate stakeholders is equally as important as those of internal pro-climate stakeholders or as the recognition of functional interrelations. REPowerEU is characterized by low levels of CPI for external pro-climate stakeholders, but has still high levels of CPI in the policy output and medium-high levels of CPI in the process. Thus, it does not seem that the low influence of external pro-climate stakeholders resulted in weaker climate policy. This can be taken into account for further research.

Furthermore, our interviewees mentioned that the distinction between internal pro and non-pro climate stakeholders is artificial. They argue that every member state has accepted the Climate Law, so they are supporting combatting climate change. While our analysis showed that there still can be staunch opposition against strong climate policy targets, it is true that the political commitment and the recognition of functional interrelationships has risen. This may make the dichotomy of pro-or non-pro climate stakeholders insufficient. Maybe relabelling them on a scale ranging from weak to strong pro-climate stakeholders might be a better reflection of the current political landscape.

On the topic of relabelling, something can be said about the naming of the CPI levels in the policy output. Table 5.1 shows that ideal CPI means reaching the climate goals. Almost achieving the climate targets (80-90 %) is labelled as very high levels of CPI. The label 'very high' sounds positive. However, we should ask ourselves if we want a positive sounding label for *only* achieving 80-90% of the climate goals and thus actually not achieving them. In the current context, where scientists have repeatedly stated that every tenth of a degree matters in combatting climate change, this does not seem a good idea. We propose to change the labels, whereby ideal CPI becomes 'sufficient or enough' CPI, very high becomes 'almost enough' or 'almost sufficient', high becomes 'insufficient' *etc*.. This new label creates an entirely different atmosphere and might urge policymakers to follow the scientific consensus.

We cannot say whether or not the high degree of CPI in REPowerEU is part of a long-term evolution towards more CPI in EU policy. After all, we did not perform a longitudinal study. Likewise, we did not perform a thorough comparative study where we looked at CPI within or in-between different policy areas. However, we used the same framework as Dupont (2016), who researched the RED and the EPBD, which we also studied. For these directives, we do see that CPI levels are higher today. This seems to suggest that CPI is higher in REPowerEU than previous policy directives or packages. It does seems that the European Union has taken the need to become rapidly energy independent from Russia as an opportunity to accelerate the Green Transition and increase its levels of CPI.

An additional shortcoming is the fact that REPowerEU is not yet fully ratified and implemented. Therefore, the effects of the police package are not clear yet. Therefore, we recommend to carry out a study on CPI in REPowerEU when the effects are fully understood in order to examine if our results and conclusions have changed.

Another negative is the difficulty we had collecting data. Like mentioned earlier, we contacted high-profiles persons for interviews, but received only three positive answers. Additionally, we could not properly access the internal decision making procedures in the Commission and the Council. Furthermore, we could not access some data because it was situated behind a paywall which could only be removed by taking a subscription. This was the case for Enerdata, a specialized databank on energy, and ENDS Europe, a news agency specializing in European environmental news. These organizations were contacted to ask if they could make an exception for our research, but to no avail.

Furthermore, only looking at REPowerEU is in essence an artificial separation of EU policies. For example, we did not look at the EU price cap for gas, EU biodiversity plan or the EU's farm to fork initiative which are closely related to, but not an official part of REPowerEU. However, the price cap will undoubtedly affect the import and production of gas, while introducing stringent protection laws could stall the construction of renewable power plants. On the other hand, this is countered by introducing the concept of overriding public interest. Making our food sector green, including its energy consumption, will also affect energy demands. These examples show that, nowadays, climate policy is present and integrated in a lot of sectors which was also mentioned in interview 2. Thus, one has to keep in mind that separating one policy package is artificial and will not give a complete understanding of the integration and interaction between policy sectors.

Contributions

Our study has both theoretical and practical contributions. On the theoretical side, we combined the analytical framework of Dupont (2016) with the one from Kettner and Kletzan-Slamanig (2020). This was the first time this was done. This proved to be fruitful, as the time-variable helped to explain the levels of CPI, in particular the low levels of CPI in the involvement of external pro-climate stakeholders. Additionally, we saw that the conceptual framework of Dupont (2016), while still very useful and important, might need some small updates related to the changing context and the increased awareness of climate change. Additionally, our study showed that variables from the analytical framework of Dupont (2016) are still very relevant and useful in in explaining the levels of CPI. On the practical side, we showed that policy makers are investing too much in gas infrastructure and that they should be wary for the dangers of a potential lock-in. We also explained why they should be cautious using LNG, as this has more negative effects on the climate compared to pipeline gas. Additionally, our analysis showed how urgent a rapid implementation of the Green Transition is. Furthermore, this study can help policy makers to get a better understanding of CPI and its importance in climate and energy policy.

Final words

The Russian Invasion of Ukraine has been a wake-up call for the EU and its members that energy independence is important if they no longer want to be dependent on an expansionist authoritarian regime. The EU, driven by the Commission, chose to achieve this energy independence not only by focusing on fossil fuels, but on accelerating the Green Transition. This is the first time this happened, as past crises often pushed climate objectives to a sideliner (Wolf & Ladi, 2020). Now, using the binding targets of the EU Climate Law and the proposals of the Green Deal to build upon, the Commission and elements of the Parliament managed to increase ambition, though not as much as they had hoped. Some actors, mainly in the Council, tempered the ambitions. Furthermore, not all measures taken seem adequate enough to achieve the long-term goal of net-zero neutrality. The excessive focus on gas infrastructure and LNG use could also hamper climate objectives. Achieving these objectives will depend on the implementation of REPowerEU and the wider Green Deal. Our analysis showed that significant efforts will have to be made. However, the fact that the EU has committed itself to answer this crisis with a focus on climate objectives and has committed itself to achieve the targets it set out, provides hope that the battle against climate change is not yet lost. We still have a long way to go, but at least we are walking in the right direction.

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Summary interviews

This section contains summaries of the interviews that were conducted for this research. We want to mention that the pronouns he or she are not necessarily correct. We did this to increase anonymity.

Interview 1

Assistant of MEP involved
in REPowerEU Chapters

1. Do you consider energy policy important in the role to achieve climate policy objectives?
The interviewee answered with "Yes absolutely, there is clearly a link and a very important one". The energy sector plays a huge role in climate because of the high level of pollution The interviewee also stated that the importance of the energy sector was highlighted after the invasion. The EU's dependency has been highlighted because of the war. It is not only about cutting of Russian energy imports but also about creating new renewable energy sources.

2. Was there interaction with external stakeholders (companies, NGO's, etc.) during the legislativeprocedure. If yes, how often and with which medium? If not, why not?

   According to the interviewee, the co-rapporteurs were, even before formulating parliament position, always available for external stakeholders. She does mention that an official stakeholders analysis was not repeated because of rushing, but informal negotiations did take place and they were extremely open to all the input. The input played a key role in 2 points
   1. It helped to provide a good leverage in obligating consideration with stakeholders in drafting chapters. First, the Council said there was no time. But the fact that external stakeholders pushed for this helped to include this in the final agreement.
   2. Second, Commission and Council wanted a derogation from the DNSH principle. The Parliament did not support this and was supported by external pro-climate stakeholders. This helped to diminish the possible derogation from the DNSH principle.

3. Do you see achieving energy security and achieving a climate neutral continent as a contradiction or not?
   For the interviewee , it is clear that some political groups put more emphasis on energy security, and the urgency in particular. So less focus on ultra-sustainability, but first on energy security.

The interviewee stated that her group agreed that there was a need energy security, but that they also need to think about sustainability. Her group agreed that you can look at temporal solutions that are not fully sustainable, but only if there are no other options.

4. How was an agreement reached in Parliament?
   The interviewee stated that the process was challenging because there were a lot of committees involved. It was difficult because different Committees had exclusive competence on some chapters, so contradictions were possible. The Committee of the interviewee focused on passing an agreement in the plenary and than changing it in the trilogues, so looking to find different compromises so to see if they can land somewhere in the trilogues.

5. The Council of the EU did not support the 20 billion funding method as proposed by Parliament. How was an agreement reached?
   During the trilogues itself, the tricky part was that each committee had a different rapporteur. Thus we had a big team involved.
   According to the interviewee, a big point of discussion was funding.
   Funding was left unsolved until last minute, mainly because the presidency wanted to first look at which projects would be eligible before funding. The parliament wanted to secure funding first and than look at which projects. The end deal was a compromise. Another discussion was present at the level of DNSH.

6. Would you consider the Commission a pro-climate stakeholder or not?
   In general yes, with REPowerEU yes, but also concerned a bit about the urgency.
   During the negotiations, the Parliament was supported by the Commission on some issues, like for example the mandatory consultations with stakeholders. It was less supportive when discussing the applications of DNSH, as the Commission wanted to stay closer to the initial project and because of the urgency. Overall, constructive and supportive but sometimes not.

7. Would you consider the Parliament a pro- climate stakeholder or not?
   Yes, has been proven many times.

8. Would you consider the Council a pro- climate stakeholder or not?
   The interviewee stated that the member states are committed to climate targets but that national priorities and urgency sometimes take priority.

9. What is your opinion on the influence of the Czech Presidency in the past negotiations?
   They put their footprint on regulation and favored the Druzhba pipeline project, which normally should not have been eligible for funding. However, they did their best to consolidate requests of members but they also looked at own priorities.

10. What are possible pitfalls that could prevent achieving the Climate policy objectives?
    The interviewee thinks that the biggest challenge is the fact that there are elections next year. This causes governments to not focus on the REPowerEU chapters. Only one chapter has been formally submitted and two or three have been informally submitted to the Commission for feedback. She also hopes that the campaigning will not lead to a lose of focus. If the governments continue to lose time now, they will have little opportunities in the future.

11. Do you think that giving the EU more competence in energy policy would increase or decrease the likelihood of obtaining climate policy objectives?
The interviewee says that she supports giving more competence to the EU in many areas, like health issues which underperformed because of the pandemic. On energy, she also believes this would solve some problems and harmonize solutions. However, she does recognize that the treaties of the EU will not be reformed soon, making a transfer of competences to the EU not something for tomorrow. Thus, she takes a more pragmatic approach and states that, for now, we should increase the amount of cross border projects. That would move us in the rights track.

Interview 2
Member of a Commission cabinet

1. How does the Commission view the relation between energy policy and climate policy?
   The interviewee says that climate policy is energy policy, it goes hand in hand. They are not a story of the one or the other. She also says that 'Fit for 55' is the bedrock on which REPowerEU is build. 'Fit for 55' would already have been ambitious, but REPowerEU is even more ambitious, as we cannot wait until 2030. Energy targets not part of climate targets, but tools we need to achieve these targets.

2. How did the really short time in which REPowerEU was drafted (3 months) affected the drafting process and outcome?

   A lot of discussions with stakeholders had already been happened, so the Commission builds on that. They did not start new stakeholders consultation. So the Commission did not start from scratch with REPowerEU. The interviewee stated that she expected that stakeholders would not be against diversification. Thus, she believes that a short period did not affect the quality.

3. Was there interaction with external stakeholders (companies, NGO's, etc.) during the legislative procedure? If yes, how often and with which medium? If not, why not?
   See previous answer.

4. Of these stakeholders, how many of them were pro-climate stakeholders, i.e. stakeholders who are in favour of strong climate objectives?
   See previous answer

5. The Council of the EU and the European Parliament proposed different targets for the RED and the EED. How did the Commission contribute to reaching an agreement?
   The Interviewee was only involved in negotiations on the inclusion of REPowerEU chapters in the RRF. She was not involved in the other negotiations. However, she states that for all the negotiations, the Commission has a role of defending its proposals but also finding a compromise. The Commission is, to an extent, a objective third party.

6. Would you consider the Commission a pro-climate stakeholder or not?
   The interviewee does not view the Commission as a stakeholder, but as a regulator. But she sees the Commission is pro-climate and always has been. She mentions the ETS system as an example, as no other country or region in the world has this. This system was born in the Commission. Furthermore, there is binding legislation in place that the Commission can use in a debate to hold actors accountable to these targets. Though she does mention that the Green Deal has given more impetus to climate objectives in general and in particular to biodiversity and nature.

7. Do you consider the von der Leyen Commission more pro-climate compared to previous legislatures?
   See previous answer.

8. Would you consider the Parliament a pro- climate stakeholder or not?
   The Interviewee says that both the Council and the Parliament have agreed on the Climate Law, so you have to give them that. The Parliament seems to always be more ambitious, but that is not always the case according to her. The Council is different because member states have different situations. Some member states have a tougher challenge to achieve climate objectives, so normal that you defend you interest. The interviewee also mentions that she considers the distinction between pro- and non pro- climate stakeholders artificial. There is a lot of political will to combat climate change and all actors agree that climate change should be tackled, though they have different viewpoints on how to do it. She does say that there is not a lot of focus on biodiversity and nature, which she considers a mistake.

9. Would you consider the Council a pro- climate stakeholder or not?
   See previous answer.

10. What is your opinion on the influence of the Czech Presidency in REPowerEU negotiations?
    See next answer.

11. What is your opinion of the influence of the Swedish Presidency in REPowerEU negotiations?

    According to the interviewee, there are some differences between the presidencies, both cultural and personal. But no difference in value judgment to that, only a different style. According to her, the Czech presidency did a remarkable job on getting 'Fit for 55' over the finish line, in parallel with REPowerEU. The Czech were really successful, we are making progress. This is not to say that the Swedes are not doing a great job. But for a presidency, its sometimes not in your hands what tasks need to be done. Furthermore, the interviewee says that presidencies do play a crucial role, but also other member states. So its difficult to measure success based on what they accomplished, as the content and context of a proposal plays an important role.

12. What are possible pitfalls that could prevent achieving the Climate policy objectives?
    There are always pitfalls,. However, the interviewee believes results will be delivered because of the ways policy is designed. She mentions the cap and trade system, which automatically leads to the desired targets. However, big efforts still have to be made. There are also challenges, such as inflation and poverty. These can impact the political will. The Biggest challenge is a fair transition because we need to include everyone in the Green transition. On the targets that are on paper, she does believe that we will achieve them.

13. Do you think that giving the EU more competence in energy policy would increase or decrease the likelihood of obtaining climate policy objectives?

    The interviewee considers the division in competence right now as a good mix. Some things have to happen on the grounds, where member states have a better position to decide. The EU has a better position for other issues. The interviewee gives the example of the new ETS system for road and buildings. This was introduced because member states were not sufficient did not drive down their emissions sufficiently enough. So European measures were taken to help member states to achieve their sectors. So an assessment on which level actions are best taken has to be made. For energy specifically, member states retain the power to choose what kind of energy sources they use and the Commission respects this.

At the end of the interview, the interviewee wanted to add that REPowerEU is basically and acceleration from the Green Deal and the 'Fit for 55'. This acceleration needed to happen in order

to become energy independent. Furthermore, she does no longer view energy policy and climate policy is something separate, the are integrated. She argues that this can be said for all sectors. For example, trade policy should also think about climate policy.

Interview 3
Assistant of MEP involved in EED

1. Do you consider energy policy important in the role to achieve climate policy objectives?

   The assistant confirmed that there is a link between energy policy and climate policy. He referred to document of the IEA to support this claim. In particular, he mentioned that energy efficiency plays a vital role in achieving the 'Fit for 55' objectives.

2. Was there interaction with external stakeholders (companies, NGO's, etc.) during the legislativeprocedure?
   The interviewee confirmed that there was contact with external pro-climate stakeholders. He referred to the website of the rapporteur, were all these meetings are mentioned. The external pro-climate stakeholders contacted the MEP and his team, not the other way around.

   3. Of these stakeholders, how many of them were pro-climate stakeholders, i.e. stakeholders who are in favor of strong climate objectives?
   The interviewee said that there was a balance between pro-climate stakeholders and other stakeholders on the EED. There was a bit more interaction with industrial stakeholders because there are more of them, but he still considered it balanced overall.

4. Did the REPowerEU plan had a significant impact on EED legislative procedure or not?
   The assistant said that REPowerEU definitely had a big impact on the EED. In the Parliament, it helped to increase awareness and political commitment to increase the energy efficiency target.

5. Was there opposition inside the ITRE Committee on the 14.5% reduction target?
   The interviewee said that there were different perceptions of the target, in the beginning there were different positions of different political groups. The draft rapport of rapporteur said 19%, the Greens said 20% , the EPP said 11%. For the parliament as a whole, there was support to increase the target, the question was how much
   An agreement was reached by compromising. The target was higher than the Commission, but there were compromises on other places.

6. The Council of the EU did not support the EED targets set by Parliament. How was an agreement reached?
   An agreement was reached by compromising. The Assistant mentioned that there were lots of discussions. The Council wanted some flexibility.

7. Would you consider the Commission a pro-climate stakeholder or not?
   The Interviewee mentioned that he views the Commission as a pro-climate stakeholder.

8. Would you consider the Parliament a pro- climate stakeholder or not?
   The assistant mentioned that there are different groups in Parliament who can be considered pro-climate and others who cannot be considered pro-climate stakeholders. But overall, he does view the Parliament as an institute that wants to increase targets to reach climate policy objectives.

9. Would you consider the Council a pro- climate stakeholder or not?
   Council based on different member states, it depends within the Council, as such they do acknowledge the need for pro-climate objectives, not as far as we would like.
   The interviewee alludes to the fact that the Council is made up of different countries which have their own views. This means that their climate objectives are not as high as he would like. However, he does say that the member states recognizes the importance of climate policy objectives.

10. What is your opinion on the influence of the Czech Presidency in the past negotiations? See next question.

11. What is your opinion of the influence of the Swedish Presidency in the past negotiations?
    He says that they both used the general approach of the Council as a basis, though they put emphasis on different arts. He did not negotiate with the Czech Presidency on the hard targets, so he cannot compare it with the Swedish Presidency.

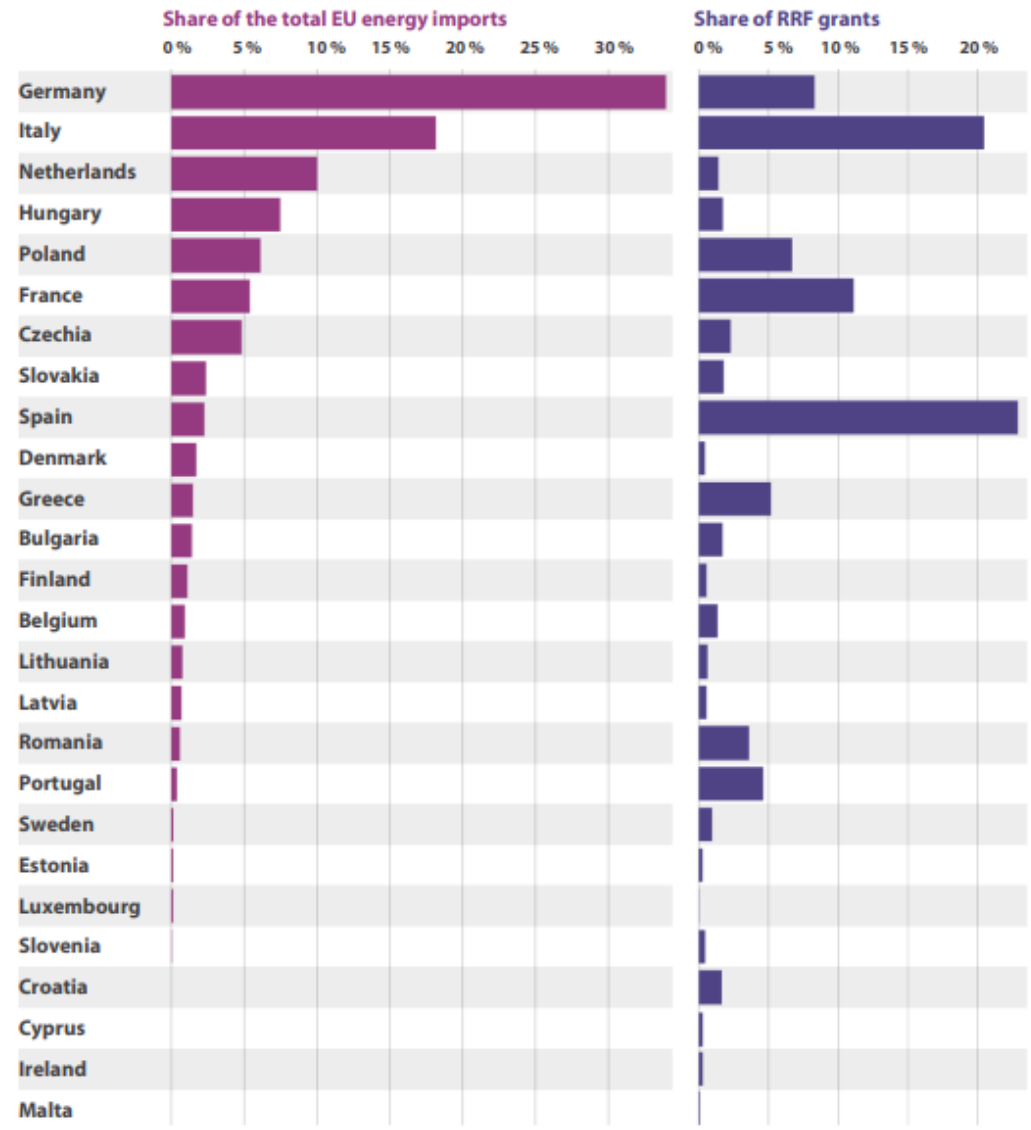
12. What are possible pitfalls that could prevent achieving the Climate policy objectives?
    The implementation phase contains a lot of possible pitfalls. However, the assistant said that the Parliament has made sure that there are strong governance aspects included in the EED. This gives the Commission power to monitor the implementation. Another challenge is assuring that the EU has enough raw materials to support its green transition. Slow permitting procedures are also a possible pitfalls, as is the lack of skilled workers.

13. Do you think that giving the EU more competence in energy policy would increase or decrease thelikelihood of obtaining climate policy objectives?
    The interviewee says that the EU is important to drive the ambition. It offers a common base for all member states where they can build upon. He is not sure of part of the implementation phase should be carried out by the implementation phase should be carried out by the EU, as there are a lot of regional differences. Member states have better knowledge on these differences than the EU. He gives the Nord See as an example. Here, regional countries are building a vast network of wind energy infrastructure. They have more knowledge on this project than the EU. The Member states also have more trust of the citizens. On the other hand, the interviewee does believe that there should be more coordination between member states concerning the electricity grid.

Annex

Annex 1

Share of total EU energy import from the Russian Federation vs estimated share of grant using RRF allocation key (ECA, 2022).



* Information not available for Austria.

Annex 2

List of additional possible objectives in REPowerEU chapters proposedby the European Parliament. The text in bold are the proposals made by Parliament.

"(...), aiming to contribute to the REPowerEU objectives, by:

(a) improving energy infrastructure and facilities to meet immediate security of supply needs for gas, ***including LNG****, notably to enable diversification of supply in the interest of the Union as a whole****, while ensuring that the relevant infrastructures are hydrogen ready****,*

*(b) boosting energy efficiency and savings in buildings****, including via investment schemes targeted to vulnerable households, SMEs and micro-enterprises****,*

(ba) decarbonising industry, ***increasing energy storage capacity****, increasing production and uptake of sustainable biomethane,* ***renewable energy****,* ***renewable fuels of non-biological origin (RFNBOs)****, and renewable or fossil-free hydrogen and* ***speeding up permitting processes for plants producing renewable energy, including the improvement of related electricity generation and other infrastructure, including by accelerating permitting procedures,***

(bb) addressing energy poverty, in particular through measures benefitting vulnerable and low-income households,

(bc) incentivising reduction of energy demand, including by upscaling existing energy savings solutions,

(bd) boosting low-carbon energy sources within the Union, [Am. 8]

(c) addressing internal ***and energy interconnectors and*** *cross-border energy transmission bottlenecks****, including the connection of grids to new renewable energy sources****, and supporting zero emission transport and its infrastructure* ***in a just and inclusive way****, including railways,* ***thereby contributing to ensuring affordable energy and transport in the Union,***

(d) supporting the objectives in points (a), (b) and (c) through an accelerated requalification of the workforce towards green ***and the related digital*** *skills* ***and energy transition, including for the administrative implementation of those objectives****, as well as support of the value chains in key materials and technologies linked to the green transition* ***and the use of sustainable construction materials and products, thereby reducing the dependency on primary critical raw materials relevant to the energy transition."*** (Parliament, 2022, p. 15-16)

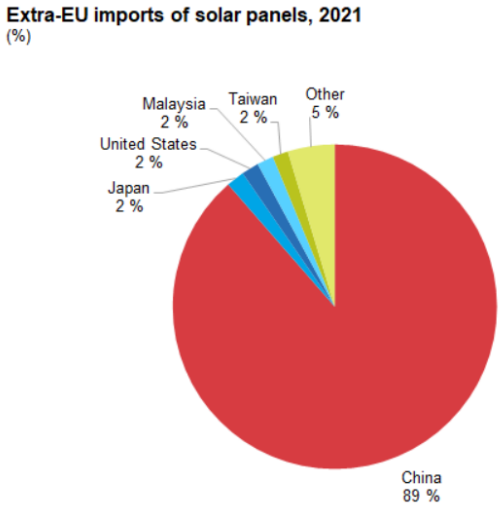
Annex 3

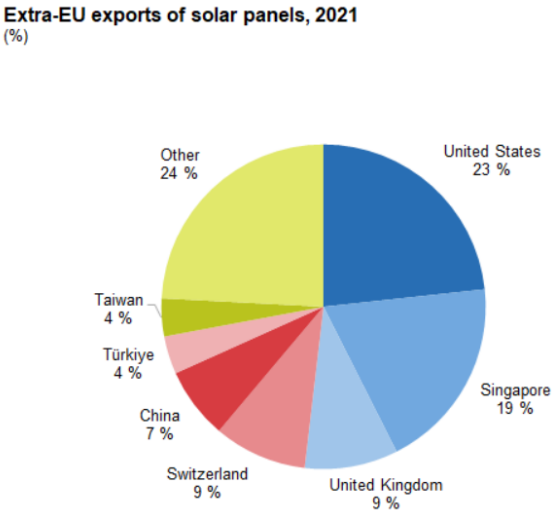
Allocation key REPowerEU chapters.
Source: Regulation (EU) 2023/435, 2023.

Member State	Share as % of total	Amount (in EUR 1 000, current prices)
Belgium	1,41 %	282 139
Bulgaria	2,40 %	480 047
Czechia	3,41 %	681 565
Denmark	0,65 %	130 911
Germany	10,45 %	2 089 555
Estonia	0,42 %	83 423
Ireland	0,45 %	89 598
Greece	3,85 %	769 222
Spain	12,93 %	2 586 147
France	11,60 %	2 320 955
Croatia	1,35 %	269 441
Italy	13,80 %	2 760 000
Cyprus	0,26 %	52 487
Latvia	0,62 %	123 983
Lithuania	0,97 %	194 020
Luxembourg	0,15 %	30 000
Hungary	3,51 %	701 565
Malta	0,15 %	30 000
Netherlands	2,28 %	455 042
Austria	1,05 %	210 620
Poland	13,80 %	2 760 000
Portugal	3,52 %	704 420
Romania	7,00 %	1 399 326
Slovenia	0,58 %	116 910
Slovakia	1,83 %	366 959
Finland	0,56 %	112 936
Sweden	0,99 %	198 727
EU27	100,00 %	20 000 000’

Annex 4

Source: Eurostat 2021a





Annex 5

List of targeted measures able to generate energy savings in the short-term (one-year).
Source: Commission, 2022d

Possible measures	***Description of measures***	***Estimated impacts in one year (Mtoe)***
Cross-cutting energy services and financing measures		
Information campaign on multiple energy wastage in households and small businesses	Targeted information campaign, inciting citizens to turn down heating and boiler temperature, avoid consumption at peak hours, close doors, turn off heating in unused rooms, switch-off lights, block draughts, lower energy use in retail shops. This should also include advice services, such as one-stop-shops or energy efficiency kits, for citizens and SMEs.	11 Mtoe

Certification and maintenance	Free-of-charge advice, inspection, energy audits and energy performance certificates to create awareness and provide recommendation on energy savings, as well as spot checks in thermal heating systems and fast-track maintenance to reduce wastage	3.5 Mtoe
Modify energy pricing to encourage lower energy use and fuel	Remove preferential treatment of fossil fuels and flat rates for energy. Introduce progressive tariffs and other solutions to foster savings and encourage switch from gas to electricity	2.4 Mtoe
Encourage purchase of more efficient appliances	Member States to provide information and incentives. The EPREL consumer interface provides readily accessible comparable information.	
Roll-out of innovative financing practices and further support ESCOs	Fast-track innovative financing schemes and financial products can support the increased uptake of energy efficiency measures and generate energy savings in the short-term (on-tax and on-bill financing schemes, energy efficiency	0.7 Mtoe

Annex 6

Overview of the different deadlines proposed in article 9a of the EPBD regarding the installation of solar panels.

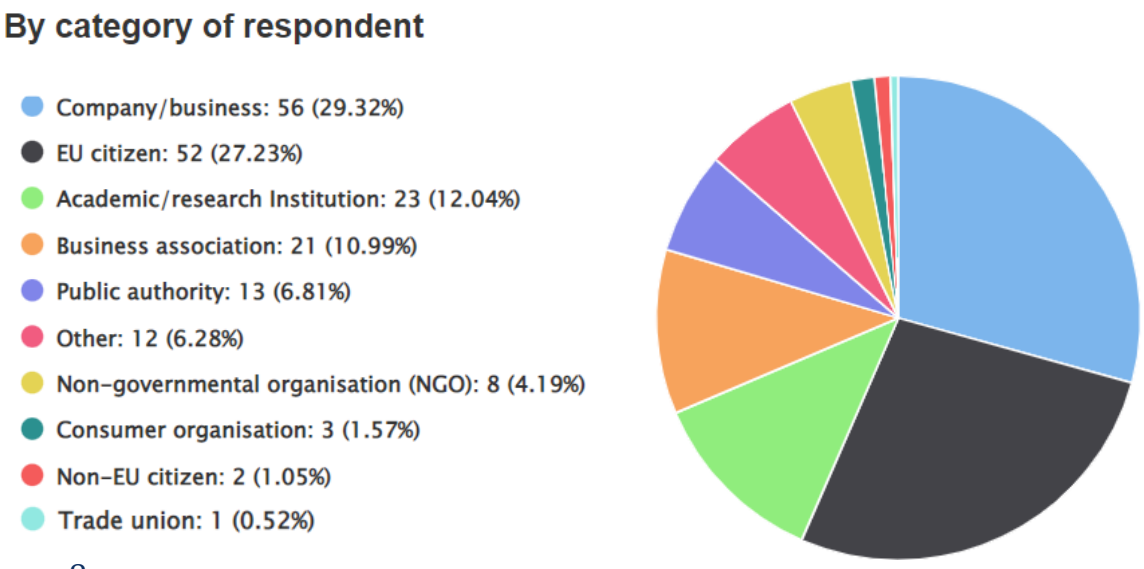
Commission proposal (Commission, 2022)	ITRE Draft (ITRE, 2022)	ENVI opinion (ENVI, 2021)	Position of Parliament (Parliament, 2023)	General Approach Council (2022d)
all new public and commercial buildings with useful floor >250 m² 31 December 2026	All new public and commercial buildings with useful floor >250 m² 1 January 2025	all new public and commercial buildings with useful floor >250 m² Date of transposition of Directive	All new public and non-residential buildings 24 months after entry into force Directive	all new public and commercial buildings with useful floor >250 m 31 December 2026

all existing public and commercial buildings with useful floor >250 m² 31 December 2027	all existing public and commercial buildings with useful floor >250 m² 31 December 2027	all existing public and commercial buildings with useful floor >250 m² 31 December 2026	All existing public and non-residential buildings 31 December 2026	
				All existing public and non-residential buildings undergoing a major or a deep renovation with useful floor > 400 m² 31 December 2027
All new residential buildings 31 December 2029		All new residential buildings Date of transposition of Directive	All new residential buildings and roofed carparks 31 December 2028	All new residential buildings 31 December 2029
	All existing buildings 31 December 2030			
	All existing buildings undergoing major renovation of the roof At entry into force of Directive		All buildings undergoing major renovation	

			31 December 2032	

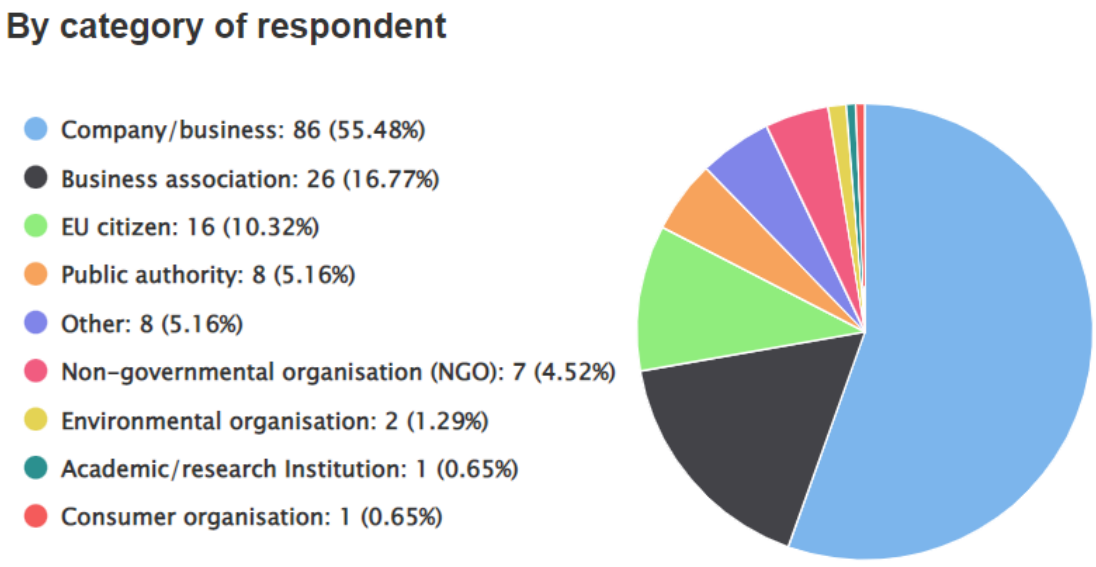
Annex 7

Categories of respondents public consultations EU Solar Energy Strategy.
Source: Commission, 2022i.



Annex 8

Categories of respondents public consultations Recommendation on speeding up permit-granting procedures for renewable energy projects and facilitating Power Purchase Agreements / RepowerEU legislative proposals
Source: Commission, 2022h.



Annex 9

Overview deadlines REPowerEU chapters.

Type of project	Commission's proposal (Commission, 2022)	Council's General approach (Council, 2022)	Parliament (Parliament, 2022)
Find suitable land, sea or inland water areas	12 months	18 months	12 months
Find renewables go-to areas	24 months	30 months	24 months
Validation deadline	30 days	45 days	30 days
Validation deadline go-to areas	14 days	30 days	14 working days
Screening of application go-to areas	30 days	45 days	30 days
Screening application go-to areas <150 kW electrical capacity	15 days	30 days	15 days
Completion of procedure	24 months + 3 months possible extension	24 months + 6 months possible extension	18 months + 3 months possible extension.

Completion of procedure offshore renewable projects	No separate deadline for offshore projects	36 months + 6 months possible extenion	No separate deadline for offshore projects
Completion of procedure < 150 kW electrical capacity	12 months + 3 months possible extension	12 months + 3 months possible extension	6 months
Completion of procedure go-to areas	12 months + 3 months possible extension	12 months + 6 months possible extension	9 months + 3 months possible extension
Completion of procedure go-to areas offshore renewable projects	No separate deadline for offshore projects	24 months + 6 months possible extension	No separate deadline for offshore projects
Completion of procedure go-to areas < 150 kW electrical capacity	6 months + 3 months possible extension	6 months + 3 months possible extension	6 months+ 3 months possible extension
Completion of procedure go-to areas electrical capacity offshore wind projects	No separate deadline for offshore projects	12 months + 6 months possible extension	No separate deadline for offshore projects
Completion of procedure repowering of renewable energy power plant in go-to area with increase <15%			30 days