

# The urgency of climate action and the aim for justice in energy transitions – dynamics and complexity

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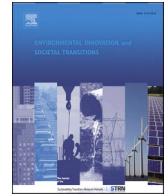
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# The urgency of climate action and the aim for justice in energy transitions – dynamics and complexity

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## ABSTRACT

Policymakers are confronted with a growing urgency to act upon climate change, while simultaneously, justice considerations are increasingly foregrounded in discussions on energy transition policies. Yet, the dynamics between urgency and justice in energy transitions are not well understood. In this study, we investigate these dynamics thoroughly by taking stock of and bridging different bodies of literature on urgency, justice, and energy transitions. We found the main dynamics to be *enabling* and *jeopardizing*. Moreover, there is much nuance within these dynamics. We find, for example, that urgency in energy transition policymaking can lead to the perpetuation of energy injustice, while implementing rapid energy transition measures can also tackle energy injustice. Our analysis advances the understanding of the dynamics between urgency and justice and supports policymakers in navigating these dynamics in their aim for a just energy transition. Based on our analysis, we outline recommendations for energy transition research and policymaking.

## 1. Introduction

Climate change is an urgent issue. Climate scientists have published alarming reports on climate change over the past decades, of which the IPCC's sixth assessment report is only the most recent example (IPCC et al., 2021). One of the main instruments to combat climate change is transitioning to a low-carbon energy system. The urgent need for climate action creates a sense of urgency to perform and accelerate energy transitions. Simultaneously, there is increasing attention among policymakers and academics for the importance of including justice considerations in energy transition policies.

The importance of urgency and justice is also voiced in the transition studies literature. In a stock-taking piece that presents key future directions of sustainability transitions research (Köhler et al., 2019), transition scholars have stressed the urgency of accelerating sustainability transitions as a rationale for researching (energy) transitions. The authors also identified a need for a research focus on the transition dynamics that, in sum, induce, reinforce, exacerbate, or mitigate injustices, now and in the future, including a call to focus on power and politics more explicitly in (energy) transitions (Köhler et al., 2019).

However, the combination of an urgent need for climate action and calls for justice adds considerable complexity to creating energy transition policies. Simultaneously, we detect that scholars often either foreground the urgency of climate action (Goulder, 2020; Ripple et al., 2020; Rinawati et al., 2013; Solomon et al., 2009), or focus on justice in the context of energy systems, energy transitions, and climate change (García-García et al., 2020; Jenkins et al., 2020; Newell et al., 2021), but the interplay between urgency and justice

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is understudied. Therefore, we seek to further investigate the dynamics between urgency and justice by asking the question: *How does the urgency of climate action relate to justice in energy transitions?* To answer this research question, we reviewed literature that (1) engages with both urgency (or emergency) and justice in energy transitions; and that (2) focuses on urgency and how it is presented in different fields of study. We use theories on justice as a framework to analyze these literatures.

With this, we seek to make both a contribution to practice and theory. First, we aim to aid policymakers in their efforts to navigate the dynamics between urgency and justice. Policymakers are confronted with a growing urgency to act upon climate change, while at the same time, justice considerations are increasingly foregrounded in discussions on energy transition policies. The first step to navigating the dynamics between urgency and justice in energy transitions is to enhance the understanding of these dynamics. Second, by focusing on the dynamics between urgency and justice, this study makes an original contribution to the literature on justice in energy transitions. With our focus on urgency, we enrich the justice debates in the context of energy transitions and climate change, and we highlight the tension between different aspects of justice.

We focus on three prevalent ways of studying justice in the context of climate change and energy transitions: climate justice, to account for the injustices related to climate change; energy justice, to account for injustices related to energy services and systems; and just transitions, to account for the injustices rooted in the transition away from fossil fuel usage. Furthermore, we use the notion of urgency as it is defined by Orlove et al. (2020) in the context of climate change: “*subjective and objective time pressure, in which delays for action will lead to increased risk or harm* (p. 10.1)”. While justice is a goal to strive for, urgency is not: it is rather a means to stress the importance of timely and effective climate action. Finally, while we are not oblivious to the fact that multiple energy transitions are happening, for example, to improve electricity access, we use the notion of energy transitions to refer to a transition away from fossil fuel usage.

This paper is divided into five sections. We first explain the *different conceptualizations of justice* that we use as an analytical framework to analyze the urgency-justice dynamics. In section three, we explain the *methods* used in this paper. We continue section four, *urgency and justice in the context of energy transitions* presenting the results of our systematic and narrative literature review. In the fifth section, *the urgency-justice dynamics*, we synthesize these findings, bringing together urgency and justice in the context of energy transitions. We find that urgency and justice can both enable and jeopardize each other in energy transitions. Recognizing these dynamics and understanding their consequences is crucial for creating policies that consider both the urgency of climate change and the importance of justice in energy transitions. Finally, we conclude with research and policy recommendations.

## 2. Different conceptualizations of justice

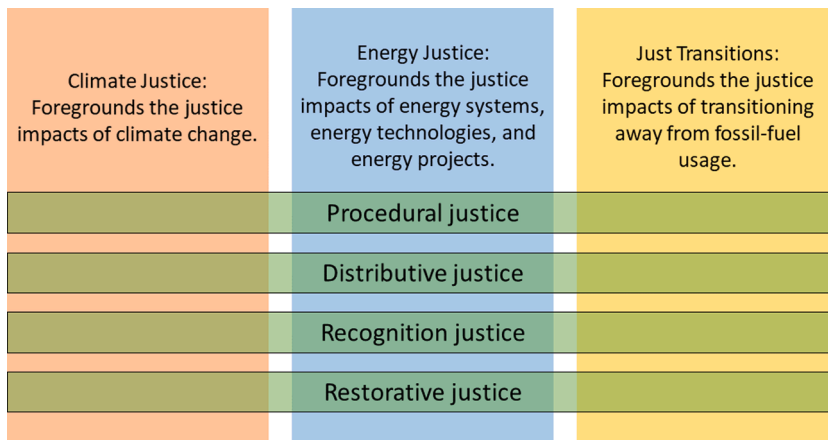
The analytical framework we use to study the dynamics between urgency and justice draws upon different justice conceptualizations that are relevant in the context of climate change and energy transitions. In particular, we focus on three important angles: climate justice, energy justice, and just transitions. While they partly overlap, each of these angles includes distinctive considerations and debates relevant for our analysis. Furthermore, within their bodies of literature, different analytical approaches exist.

It is not our aim to provide a complete overview of climate justice, energy justice, and just transitions. For such overviews, we would like to refer to publications like Newell et al. (2021); Okereke (2010) and Schlosberg & Collins (2014) on climate justice, Jenkins et al. (2016); Jenkins et al. (2020) and Sovacool & Dworkin (2015) on energy justice, and García-García et al. (2020); Heffron & McCauley (2018); Newell & Mulvaney (2013) and Wang & Lo (2021) on just energy transitions. Rather, we highlight the similarities and differences between the three types of justice, which enables us to look more specifically at the aspects of justice that are important in the urgency-justice dynamics.

### 2.1. Roots and essence of climate justice, energy justice, and just transitions

Both the climate justice and energy justice literature have their roots in the environmental justice movement. Environmental justice is generally recognized as a movement that started around 1980 in the US, where the distribution of environmental hazards like the dumping of highly toxic waste was often located near black communities (Schlosberg and Collins, 2014; Taylor, 2011). This is also when environmental justice research started to take off (Taylor, 2011). Inspired by the literature on environmental justice, climate- and energy justice literature often carries three core tenets, emphasizing distributive, procedural, and recognition justice (Jenkins et al., 2014). We do not include environmental justice as a theoretical lens, as in the context of energy transitions and climate change, these environmental justice considerations overlap to a great extent with energy justice and climate justice. However, we do incorporate the tenets-based approach that is rooted in the environmental justice literature, which we will explain in more detail in Section 2.2.

Essentially, climate justice focuses on the roots of climate change, accounting for and contesting how the impacts of climate change are most severe on those with the least responsibility for causing it, and who are often excluded from decision-making processes regarding climate mitigation and climate adaptation (Newell et al., 2021). By using climate justice, we aim to put people and communities that are disproportionately impacted by climate change into focus. Importantly, these people often cannot engage in decision-making processes on climate action. People experience various levels of climate vulnerability. These differences are rooted in the intersection of socioeconomic factors like race, class, ethnicity, and gender (Thomas et al., 2019), and spatial factors, as climate change impacts differ per region (King and Harrington, 2018). Hence, differences in climate vulnerability exist between nations and regions, but also within nations and regions (Baer et al., 2009), and even within communities. These differences in vulnerability can for example be rooted in a lower (political) representation of certain social groups, or because the increased exposure of certain social



**Fig. 1.** Visual representation of our analytical framework: the columns show the different types of justice and their impact areas, which we study through the tenets of justice shown in the rows.

groups to environmental hazards reinforces their climate change vulnerability (Thomas et al., 2019). Increasingly the focus is put on future generations and climate justice, as they are directly impacted by the GHG emissions that are currently emitted.

Energy justice is often described as “a global energy system that fairly disseminates both the benefits and costs of energy services and one that has representative and impartial energy decision making (Sovacool and Dworkin, 2015, p. 436)”. With this, energy justice literature engages with all justice impacts that energy projects, energy technologies, energy services, and energy decision-making have. This includes a focus on communities whose living environment is changed due to energy projects like solar PV parks (Yenneti and Day, 2015) or hydropower plants (Zhao et al., 2020), but it also considers inequality between communities concerning energy security and energy access (Gafa et al., 2022). Furthermore, many scholars argue for a whole systems approach to energy justice (Jenkins et al., 2014). An important concept in this context is ‘embodied energy injustices’: injustices that are hidden and distant, but connected to the extraction, processing, transportation, and disposal of energy resources (Healy et al., 2019). An example of such injustices is highlighted in a report called *In Broad Daylight* (Murphy and Elimä, 2021), which focuses on Uyghur forced labor connected to the production of PV panels. The whole systems approach to energy justice thus includes a focus on communities experiencing injustices related to the value chain of energy resources, energy technologies, or energy systems.

Just transition literature, our third theoretical angle, does not have its roots in the environmental justice movement. Labor unions coined the term ‘just transition’ in the seventies and eighties to advocate for the protection of workers and communities dependent on high-carbon industries in the transition to a low-carbon society (García-García et al., 2020; Heffron and McCauley, 2018). The term ‘just transition’ can refer to any type of transition that is policy-led with time goals, for example, any type of climate reform. However, in the past decades ‘just transitions’ have been especially linked to energy transitions (García-García et al., 2020). In this article, we also focus on just energy transitions.

Though the idea of just transitions is undergoing conceptual development (Wang and Lo, 2021, see also Section 2.2), including efforts to transcend the focus on labor in relation to energy transitions, we focus mainly on the groups that are originally targeted by just transitions: workers and communities dependent on high-carbon industries (García-García et al., 2020; Heffron and McCauley 2018). This focus is important in our analysis, as the scholarships on climate justice and energy justice do not often account for these groups. Most just transition scholars agree that the focus on workers is an essential part of just energy transitions. Eisenberg, for example, emphasizes that because there is a persisting ‘jobs versus environment’ tension, and because of the general perception that there are ‘losers’ and ‘winners’ in the energy transition, the labor argument is essential to help overcome these obstacles for the energy transition (Eisenberg, 2019). In addition to the focus on workers in fossil-intensive industries, we also consider other groups that are impacted by the phase-out of fossil fuels, for example, lower-income groups that are affected by carbon taxes (Mehleb et al., 2021).

In our analysis, we use these three types of justice as they enable us to put different justice impacts in energy transitions into focus (see also Fig. 1): climate change impacts; impacts related to energy projects, technologies, and systems; and impacts related to the transition away from fossil fuels. They provide important focus areas when aiming to design just policies in the context of urgent climate action.

## 2.2. Studying climate justice, energy justice, and just transitions

There are different analytical approaches to studying justice, and there is also quite some overlap between the approaches that are used in climate justice, energy justice, and just transitions. In climate justice literature, approaches that have been used are for example the capability approach (Schlosberg, 2012), human rights (Robinson and Shine, 2018), and climate equity (Muttitt and Kartha, 2020).

In just transitions literature, there is increasing attention to using just transitions as an integrated framework for environmental-, energy- and climate justice (Delina and Sovacool, 2018; Heffron and McCauley, 2018; Williams and Doyon, 2019). Next to this, just transitions are also seen as a theory of socio-technical transition (Jenkins et al., 2018; Sareen and Haarstad, 2018); as a governance strategy (Newell and Mulvaney, 2013; Winkler, 2020); and as a public perception (Cha, 2020; Mundaca et al., 2018).

In the literature on energy justice, there seems to be less variety in analytical approaches: some scholars create their own framework or use for example the eight principles approach (Sovacool and Dworkin, 2015), but the most used framework is the tenets-based approach (Jenkins et al., 2020), focusing on the three tenets of procedural, distributive and recognition justice, or a variation on these.<sup>1</sup> Next to the approaches mentioned earlier, both the climate justice and just transitions literature also engage to some degree with these tenets. For example, Newell et al. (2021) presented four pillars of climate justice, namely procedural-, distributive-, recognition-, and intergenerational climate justice; and Abram et al. (2022) propose to use the tenets of procedural-, distributive-, recognition-, and restorative justice as a framework to study just energy transitions. Because all three bodies of literature work, to a differing extent, with similar tenets of justice, we consider it to be fitting to use a tenets-based approach in this analysis.

We focus on the following four tenets of justice in our analysis: procedural justice, distributive justice, justice as recognition, and restorative justice. We focus on the first three tenets as they are most often used (Martin et al., 2013), and add the tenet of restorative justice as it is increasingly used in literature on climate justice, energy justice, and just transitions (Hazrati and Heffron, 2021; Heffron and McCauley, 2017; Lacey-Barnacle, 2020; Schlosberg and Collins, 2014). First, *procedural justice* can be explained as a call for equitable and fair procedures regarding energy decision-making (Jenkins et al., 2016; Sovacool et al., 2014). Second, *distributive justice* refers to “the even distribution of benefits and ills on all members of society regardless of income, race, etc. (Jenkins et al., 2016, p. 176)”. Third, *recognition justice* emphasizes the importance to identify the individuals that are affected by injustices (Jenkins et al., 2016), and it calls to include the differences in perspectives concerning climate, energy, or transitions, within different social, cultural, ethnic, and gender groups (Heffron and McCauley, 2014).

Fourth, restorative justice is about redressing the harm done to victims, holding the perpetrators of harm accountable, and engaging the community when redressing the harm (Nations and Nations Office on Drugs, 2006). This tenet of justice has three important functions in the different theories of justice: 1) it can be used to redress past damages that have already occurred; 2) it can account for crimes that are currently perpetrated; 3) it can be used to address and prevent future harm. Because of the third function, restorative justice is increasingly used in climate justice conceptualizations (Motupalli, 2018) to incorporate the principle of intergenerational justice which is imperative to the climate justice movement and scholarship (Newell et al., 2021). In the energy justice literature, restorative justice is used to prioritize the needs of victims and seeks to return to their pre-damage condition (Hazrati and Heffron, 2021). In addition, as Hazrati and Heffron argue, restorative energy justice can also serve as a proactive policy strategy to prevent future harm, for example by incorporating and considering restorative justice at the beginning of an energy project. Finally, as argued by Heffron and McCauley (2018), the notion of just transition has an inherent restorative justice element. Labor unions focused on the restoration of lost jobs due to the shutdown of for example mining industries, and the prevention of future unemployment by focusing on the creation of ‘green jobs’ to replace disappearing employment opportunities (Stavis and Felli, 2015).

Fig. 1 gives an overview of the distinct aspects of justice that are relevant in the context of climate change and energy transitions.

### 3. Methodology

To answer our research question, we took stock of and connected different bodies of literature. Our analytical framework (Section 2) which is based on different types and tenets of justice, helped us to analyze the results of our literature study. We studied the literature in two steps: first, we systematically analyzed the literature on energy transitions that engages with the interplay between urgency (or emergency) and justice. Second, we explored literature that focuses on urgency in the context of energy transitions and climate change using a narrative style review.

We find merit in our two-step literature review approach. The systematic review allowed us to study the frequency and depth of which the energy transition literature engages with the dynamics between urgency and justice. To add new insights to the discussions unfolding in these publications, we sought to explore what themes and arguments about urgency are related to climate change or energy transitions. We used a narrative review (also known as a *traditional qualitative literature review*) for this second part, as narrative reviews allow the researcher to make a qualitative synthesis of different concepts, theories, and debates, bridging these bodies of literature to provide in-depth insights (Greenhalgh et al., 2018; Sylvester et al., 2011). Narrative reviews are used to compile a great deal of information and offer a way to create a new or more expansive understanding of a subject (Werkmeister Rozas and Klein, 2010). We apply our analytical framework comprising climate justice, energy justice, and just transitions (and their tenets) to study and integrate the results of our two-step literature review.

#### 3.1. Systematic literature review

We started with a systematic literature review to explore how the dynamics between urgency and justice come to the fore in publications on energy transitions. To this end, we used the following search strings in the search engine Scopus, with a date range

<sup>1</sup> Including for example cosmopolitan justice (Sovacool et al., 2019b) and spatial justice (Bouzarovski & Simcock, 2017)



from 1983 up to 2022:

((urgency OR emergency) AND "just" AND "energy" AND "transition") OR ((urgency OR emergency) AND "justice" AND "energy")

This resulted in 76 documents, after removing duplicates. Primary inclusion criteria for our systematic literature review were peer-reviewed publications; publications available in English; and publications that engage with energy transitions. This entails that 31 of the documents found were disregarded, mainly because they did not engage with energy transitions but with other themes (e.g., domestic emergency management and home security).

We scoped through the remaining thirty-nine publications using the secondary inclusion criterium that the text mentions urgency and justice in relation to each other. This resulted in the elimination of 23 additional publications, as they mentioned both urgency and justice only in silos. The remaining 16 publications do indeed engage with the interplay of urgency and justice in the context of energy transitions. We read the publications thoroughly and systematically analyzed how the authors engage with the interaction between urgency and justice. We analyzed the texts through inductive coding NVivo software, meaning that we coded the parts of the texts that engage with the interaction between urgency and justice bottom up, without pre-conceived codes, from which themes emerge. Through analyzing these codes, we found three main themes that characterize the scholarly engagement with urgency and justice in the context of energy transitions: urgency and justice as tradeoffs; urgency and justice as reinforcing each other, and the urgency of tackling injustice in the energy system. [Table 1](#) in [Section 4.1](#) presents an overview of this systematic analysis.

### 3.2. Narrative review

For this part of the review, we focused on the notion of urgency. To add new insights to the discussions unfolding in the work on urgency and justice in energy transitions, we explored the themes and arguments about urgency that relate to climate change or energy transitions.

*Urgent* is widely used to “describe both decision contexts and the subjective experience of facing them” (Wilson and Orlove, 2021 p.51). In the context of climate change, Orlove et al. (2020) define urgency as time pressure, in which delaying action will increase the risk or harm of climate change impacts. As such, it relates closely to the notion of ‘emergency’. In 2019, the Oxford Dictionary declared climate emergency to be the word of the year, defining it as: “a situation in which immediate action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it”. Emergency is however a stronger notion: it focuses on an immediate threat to well-being, while urgency focuses on a threat to well-being in the near future. We recognize urgency and emergency as different terms, but we include work on emergency in our review as an even stronger call for rapid climate action.

While this part of our literature review was not systematic, but rather aimed at exploring key themes and insights that are useful, there was still a logic to our approach. We have used a variety of terms in search engine Scopus, such as, but not limited to: (*urgency*); (*urgency AND (climate change)*); (*urgency AND (energy transition)*); and (*urgency AND climate AND communication*). In our narrative review, we focused on highlighting debates that have a link with aspects of justice as described in [Section 2](#), like for example debates on sense of urgency and its potential to lead to undemocratic decision-making, which relates to procedural aspects of justice. We did a Scopus search, selected articles based on their abstracts, and used snowballing (tracking down references in the literature that we found through the Scopus search) to find additional literature. We found that urgency is well-studied in many scholarly fields: from medicine and psychology to environmental science and engineering. We narrowed our focus to two fields that are relevant for urgency in energy transitions: climate science, which details the urgency of acting upon climate change; and (climate) decision-making, which details how individuals, publics, and policymakers respond to urgent problems like changing climates. We selected these fields as the urgency of climate change, and the responses to this urgency by policymakers and societies, relate most closely to the scope of our study.

[Section 4.2](#) presents the findings of this narrative review. Because the narrative review includes a non-systemic selection process, there is more room for bias than there is with a systematic literature review. However, we find merit in this narrative approach exactly because it allowed us to scope through the literature and explore themes that are interesting in relation to climate justice, energy justice, and just transitions. It was not our aim to give an exhaustive account of all debates surrounding urgency in the fields that we selected, but rather to use some of these debates to deepen the understanding of the dynamics between urgency and justice.

By relating key findings in these scholarly fields to theories on climate justice, energy justice, and just transitions, we contribute to the understanding of the dynamics between urgency and justice.

## 4. Urgency and justice in literature

In the following two sections, we present the findings of our literature review. Notably, only few scholars engage with the urgency-justice dynamics in the context of energy transitions. In these debates, we detect three recurring themes which we describe in [Section 4.1](#). To substantiate and complement our systematic review, we continue [Section 4.2](#) by exploring how urgency comes to the fore in the field of climate science, after which we explore the connotations of urgency concerning decision-making processes.

### 4.1. The urgency-justice dynamics in literature on energy transitions

Through our systematic literature review, we found 16 publications that mention or touch upon the interaction between urgency and justice, in the context of energy transitions. As shown in [Table 1](#), we found three main themes that are discussed in these

**Table 1**  
Systematic literature review themes and focus.

Themes	Focus	Type of justice	Authors
Urgency and justice as tradeoffs	Just transition and labor	Distributional justice and procedural justice	Afewerki and Karlsen (2021)
	Energy project and marginalized community	Environmental justice	Koester and Davis (2018)
	Urgency compromises justice	Justice	Kumar et al. (2021)
	Urgency compromises justice	Justice	Kumar (2022)
	Renewable energy projects and marginalized communities	Energy justice, environmental justice, and climate justice	Lehmann and Tittor (2021)
	Urgency compromises justice	Just transition	Sareen (2021)
	Just transition and labor	Just transition	Wilgosh et al. (2022)
	Urgency and justice offer both productive tensions and reinforcing potential	Justice	Höffken et al. (2021)
	Urgency in energy transition important for enabling justice	Social justice	Newell and Simms (2021)
	Youth and future generations	Environmental justice and climate justice	Nkrumah (2021)
Urgency and justice as reinforcing each other	Island states	Climate justice related to human rights	Gerrard and Wannier (2013)
	Energy policy failure	Energy justice (tenets based)	Sokołowski and Heffron (2022)
	Youth and future generations	Climate justice, not specified	Stanczyk (2022)
	Urgency of providing modern energy technology	Energy justice	Islar et al. (2017)
Urgency of tackling injustice in the energy system	Urgency of cleaner cooking systems	Energy equity and justice	Kumar et al. (2020)
	Urgency of dealing with energy insecurity and inequality	Energy justice	Partridge et al. (2018)

publications: urgency and justice as tradeoffs; urgency and justice as reinforcing each other; and the urgency of tackling injustice in the energy system. Concerning urgency and justice as tradeoffs, Kumar et al. (2021) recognize for example the urgency for energy transitions in a climate-changed world, but state that justice needs thought, participation, and deliberation, which cannot be accomplished through haste. Additionally, there are also authors who emphasize how urgency in the energy transition reinforces justice. A lack of urgency in the energy transition is for example perceived to be unjust with respect to youth and future generations (Nkrumah, 2021). Additionally, Stanczyk mentions that young women and men are well aware of the ‘code red for humanity’, while the ones representing them display a ‘dangerous lack of urgency’ (Stanczyk, 2022). Finally, in a study by Partridge et al. their research participants reflected (amongst other reflections) on the urgency to tackle the injustices that prevail in the current fossil fueled energy system, through articulating the immediate need to “*identify extant systemic injustices and to address the interlocking systems of inequality that produce them* (Partridge et al., 2018:144)”.

Generally, we observe that researchers have not addressed the dynamics between urgency and justice in much detail: most scholars only give cursory consideration to the relationship between urgency and justice. The publications listed in Table 1 all provide a valuable contribution to understanding the dynamics between urgency and justice, which are used in our analysis. However, most scholars do not focus on the dynamics in these studies. Rather, they shortly, and sometimes inexplicitly reflect on these dynamics in the introduction (Islar et al., 2017; Koester and Davis, 2018; Kumar et al., 2021; Sareen, 2021; Wilgosh et al., 2022), or the discussion/conclusion section (Kumar et al., 2020) of their publication. Furthermore, while some of the studies included in our systematic review do explicate the types of justice that they refer to in their studies, many remain vague about which particular aspect of justice is relevant when considering the urgency of climate action. To create a better understanding of these dynamics, we continue this section by exploring the notion of urgency in different scholarly fields.

#### 4.2. Exploring urgency in different scholarly fields

Having discussed how the urgency-justice dynamics are described in the literature on energy transitions, we now move on to zoom in on the notion of urgency. In the following subsection, we first show how urgency is discussed in the field of climate science, by highlighting in particular the urgency of climate action and how climate impacts differ between individuals and communities. Based on this we then move on to the second subsection, where we foreground the impact that a sense of urgency can have on decision-making processes for individuals, publics, and policymakers.

##### 4.2.1. Urgency in the field of climate science

The first calls for urgency to transition towards a low-carbon society came from climate scientists. In the last IPCC reports the authors communicate the following message: climate change is widespread, rapid, and intensifying (IPCC, 2021). The report summarizes that each of the last four decades has been successively warmer than any decade that preceded it since 1850, and that hot extremes have become more frequent and intense. These messages are alarming, yet based on rather conservative scenarios regarding sea level rise, future climate, and global warming (Carvalho et al., 2022; Jakobsson and Mayer, 2022; Schwalm et al., 2020). For example, Carvalho et al. (2022) state that “*The observed warming is closer to the upper level of the projected ones, revealing that CMIPs future*

climate scenarios with higher GHG emissions appear to be the most realistic ones (p.5)". It is important to note that the IPCC predictions are conservative rather than an overestimate.<sup>2</sup> At the same time, on its website, the IPCC is quite vocal about the urgency of stronger climate policy. In one of their posts, the IPCC Chair Hoesung Lee makes a clear statement about the latest IPCC assessment report on Impacts, Adaptation, and Vulnerability: "It emphasizes the urgency of immediate and more ambitious action to address climate risks. Half measures are no longer an option (IPCC, 2022a)".

As summarized by Goulder (2020), three characteristics of climate change make immediate and more ambitious climate action especially urgent. First is the fact that most GHGs have very long atmospheric lifetimes. It would take about 1–3 centuries for atmospheric concentrations of CO<sub>2</sub> to return to pre-industrial levels if human emissions of CO<sub>2</sub> would be eliminated from today on (Goulder, 2020). This means that even if yearly CO<sub>2</sub> emissions are reduced, climate change impacts will continue to increase. Second, many climate change impacts, like sea level rise and loss of biodiversity, are irreversible (Rinawati et al., 2013; Solomon et al., 2009). Such environmental crises furthermore reinforce each other, as Cobb (2022) summarizes: "the probability of cascading events that work in tandem to bring about human extinction is well above zero (p. 245)". Third, atmospheric levels of CO<sub>2</sub> are close to being of such a magnitude that large climate change impacts will occur (IPCC et al., 2021).

Calls for urgently needed action in response to alarming trends for climate change have been articulated by climate scientists for decades (Ripple et al., 2020). The First World Climate Conference was organized in 1979 and attended by scientists from fifty nations. Since then, climate scientists have given many explicit warnings, also about insufficient progress in climate action. In 2020, a large group of scientists have called for urgency in combatting climate change. The scientists have declared 'clearly and unequivocally' through the publication of a paper 'that planet Earth is facing a climate emergency.' In this paper, which was signed by 11,258 scientists, the authors state that 'the prospects will be greatest if decision-makers and all of humanity promptly respond to this warning and declaration of a climate emergency and act to sustain life on planet Earth, our only home' (Ripple et al., 2020, pp. 8 & 11).

Climate scientists perceive climate change as an urgent issue, and as such communicate the urgency of strong(er) climate policy. Yet, the extent to which people experience a sense of urgency differs greatly. One reason for this differing sense of urgency can be rooted in the different levels of vulnerability and exposure to climate change (Thomas et al., 2019). The IPCC Report on Impacts, Adaptation, and Vulnerability summarizes that: "Vulnerability at different spatial levels is exacerbated by inequity and marginalization linked to gender, ethnicity, low income or combinations thereof (...), especially for many Indigenous Peoples and local communities (IPCC, 2022b, p. 12)". This creates differences in sense, or even level, of urgency between people, and as such it relates also to the concept of climate justice. However, differences in sense of urgency are not merely related to vulnerability or exposure to climate change. It also has to do with different levels of knowledge and perceptions about (the consequences of) climate change (Covi and Kain, 2016), and as we show in the next sections, there are different responses related to the perception or communication of urgency.

#### 4.2.2. Urgency in the field of decision-making

A sense of urgency can impact individuals, publics, and policymakers in energy- and climate decision-making, as it has an impact on how one responds to a problem that creates this sense of urgency. Arguably, a rational decision-maker would act soon and intently in an urgent situation. However, the literature suggests different impacts that urgency has on decision-making that can weaken or reverse an adequate response to an urgent situation (Wilson and Orlove, 2021). These different dynamics that urgency brings to energy- and climate decision-making can have justice impacts, as we will explore in detail in section five of this paper.

*Urgency impacts on the individual:* Scholars in the field of neuroscience and psychology relate urgency to "a specific process by which emotionality is tied to ill-advised, rash action, one result of which is engagement in risky, potentially harmful, behavior (Cyders and Smith, 2008, p. 2)". Emotionality, and the sense of urgency that it creates, can occur due to extreme positive or extreme negative affect. Urgency is furthermore associated with impulsive (acting instinctively upon emotions or involuntary impulses) and compulsive (action that results from or is related to an irresistible urge) behavior (Zorrilla and Koob, 2019).

When urgency stems from extreme negative affect, for example in the context of anxiety disorders, Malivoire et al. (2018) state that rash action is taken because immediate alleviation of discomfort is prioritized. This diminishes the quality of problem-solving, and consequently might lead to poor or unwanted outcomes, which "may only increase distress and reinforce the tendency to interpret future ambiguous scenarios as threatening (Malivoire et al., 2018, p. 213)".

*Urgency impacts on publics:* An important debate unfolding in the literature on climate change is the impact that a sense of urgency has on publics. The development in framing from *global warming* to *climate change* to *climate emergency* and *climate crisis* shows an increased sense of urgency regarding the phenomenon. However, there is no academic consensus on whether urgency should be used in climate change communication to stress the importance of climate action (McHugh et al., 2021).

Scholars in favor of communicating urgency argue that publics do not perceive climate change as an urgent problem, which these scholars see as a major obstacle to implementing urgently needed climate action (Nisbet, 2010). This argument is supported by empirical studies highlighting that increasing people's perception of threat from negative messaging can be more effective than positive messaging (Morris et al., 2020).

However, other scholars suggest that emphasizing climate urgency can have unfavorable effects on implementing climate action: perceived urgency might lead to fatalism and a decrease in people's willingness to support action (Fesenfeld and Rinscheid, 2021). Especially when information about climate change impacts is difficult to grasp or understand, this can lead to feelings of fear, fatalism,

<sup>2</sup> Critiques have also been voiced about the 'strong conservative bias in the IPCC', as this leads to optimistic and best-case scenarios being presented as formal agreements, even if they are not realistic (Cobb, 2022). Sceptics of (the severity of) climate change could misrepresent these conservative projections in favor of their own beliefs (Herrando-Pérez et al., 2019).



skepticism, and loss (Covi and Kain, 2016).

*Urgency impacts on political decision-making:* Another important debate is the impact that urgency can have in the context of policy decision-making. In the introduction of the book *Haste – The slow politics of climate urgency*, Haarstad et al. (2023) couple urgency to haste. The authors reason: “Perhaps haste is precisely what we do not need. When in haste, we make more mistakes, we overlook things, we get tunnel vision (p.1)”. While urgency and haste are not synonyms, it does seem like some policy responses to urgency lead to hasty decision-making. McHugh et al. find in their literature review that recent work on crisis and emergency “has been largely critical of emergency politics because of its anti-democratic tendency and potential for technocratic governing, while reducing the scope for accountability and transparency (McHugh et al., 2021, p. 11)”. Such emergency politics can lead to the reduction of power of marginalized groups in climate narratives and the negotiation of solutions.

This is alluded to by Sovacool et al. (2019a), who argue that notions of ‘climate emergency’ can establish elitism and inequality in climate negotiations. The authors describe that ‘elites’: individuals, institutions, or processes that have significant power in society, have their stakes in climate negotiations. Some elites might aim to start pilots or experiments, “sold on the grounds of urgency but ultimately transferring risks to those being experimented on and benefits (in the form of data, knowledge, potential patents, etc.) to the experimenters (Sovacool et al., 2019a, p. 31)”; other elites might perceive climate change as an opportunity to create profitable markets for bonds and reinsurance. Sovacool et al. stress that the urgency to combat climate change might shift power and control to these elites, in ways that would not be possible without this sense of urgency.

Another risk of stressing urgency in climate policy is that politicians will seek to diffuse blame and defend the status quo. This can lead to the implementation of ‘placebo policies’: symbolic measures that are unable to threaten the status quo, without addressing the deeper causal factors driving the climate crisis (McHugh et al., 2021). However, McHugh et al. (2021) also identified another potential pathway for politicians to deal with urgency or emergency in climate policy, called ‘treatment policy’. They provide empirical evidence, like amongst others the US Green New Deal, to illustrate that emergency can create momentum for politicians to create treatment policy: a policy that addresses the root cause of an issue.

## 5. The urgency-justice dynamics

In the previous section, we have shown through our systematic literature review that there are three ways in which the dynamics between urgency and justice are discussed in the context of energy transitions (Section 4.1, see also Table 1). Furthermore, we have explored how the notion of urgency is discussed in the field of climate science and decision-making (Section 4.2). In this section, we will integrate and build upon these findings. We do so by looking at the urgency-justice dynamics through the lens of climate justice, energy justice, and just transitions, providing important nuance to the current debate which is characterized by a cursory understanding of how urgency and justice relate to each other. Broadly, we distinguish two dynamics between urgency and justice in energy transitions: a *jeopardizing dynamic* and an *enabling dynamic*. These dynamics structure our analysis below.

### 5.1. Jeopardizing dynamics between urgency and justice

Through our systematic literature review (see also Table 1), we found some authors who focus on a tradeoff between the urgency of climate action and calls for justice in energy transitions. Some of these authors argue that urgency in decision-making compromises justice considerations (Afewerki and Karlsen, 2021; Kumar, 2022; Kumar et al., 2021; Sareen, 2021; Wilgosh et al., 2022); and other authors hint towards the idea that urgently needed climate action can be dismissed on justice grounds (Koester and Davis, 2018; Lehmann and Tittor, 2021). In other words, the jeopardizing dynamic works in two ways: the urgency of climate action can jeopardize justice in energy transitions, but a focus on justice can also obstruct rapid and adequate energy transition policies.

#### 5.1.1. Urgency of climate action as jeopardizing justice

Our systematic literature review hints towards two types of justice that are potentially jeopardized by the urgency of climate action: distributive justice (linked to the unfair distribution of the costs of an energy transition), and procedural justice (not linked to a specific type of justice). With regards to the first, distributive justice in the context of just transitions, Wilgosh et al. (2022) describe that there is a tension between the depth and urgency of energy transitions, in which they relate depth to protecting workers in energy transitions. Furthermore, Afewerki and Karlsen (2021) argue that increasing urgency of sustainability transitions leads to an emphasis on speeding up transitions, and consequently destabilizes incumbent industries leading to unemployment.

With regard to the latter, procedural justice, the argument by Kumar et al. (2021) is exemplary: “As the discourse of crisis, urgency, and emergency becomes dominant, however, we risk losing sight of political and ethical consequences for people’s everyday lives, especially in the global South (p. 1)”. The authors further reason that while urgency is crucial for energy transitions in a climate-changed world, justice needs thought, participation, and deliberation, and therefore cannot be accomplished through haste. This specifically links to procedural justice considerations. Studies on urgency in decision-making processes confirm the idea that urgency in decision-making can jeopardize just procedures. One key concern of urgency in the context of climate-, energy-, and transition decision-making is that the sense of urgency can lead to anti-democratic tendencies, favoring elites, and potentially leading to placebo policies (see also Section *Urgency impacts on political decision-making*). The notion is also associated with technocratic governing and reducing the scope for accountability and transparency (McHugh et al., 2021).

These tendencies can lead to unjust procedures relating to climate-, energy-, and just transition decision-making. For example, regarding climate justice, an important concern relates to the unequal power relation between the ones who are primarily responsible for climate change, and the ones who are facing the negative climate impacts (Okereke, 2006). Considering that urgency can have

anti-democratic tendencies, urgency in energy transition decision-making can further limit the already inadequate access of vulnerable communities to decision-making processes, increasing procedural injustice.

Finally, the literature on urgency in decision-making points us toward two other aspects of justice that can potentially be undermined by urgency: distributive- and restorative energy justice. The concept of energy justice encompasses a broad range of issues related to the distribution of benefits and costs of energy resources and technologies, including embodied injustices (Healy et al., 2019; Jenkins et al., 2014). While an energy transition is seen as an opportunity (if not an obligation) to address such injustices (Eisenberg, 2019), urgency in decision-making can prioritize short-term relief for individuals (Cyders and Smith, 2008) and lead to ‘placebo policies’: the adoption of symbolic policies that do not address the root causes of injustice (McHugh et al., 2021). Additionally, the deployment of renewable energy technologies can also give rise to human rights violations, such as forced labor in the manufacture of polysilicon and lithium mining (Joint Research Centre, 2020; Murphy and Elimä, 2021). Therefore, the pursuit of urgency in climate and energy decision-making can hamper efforts to achieve distributive and restorative energy justice and perpetuate the injustices associated with the fossil-fueled energy system.

### 5.1.2. Calls for justice as jeopardizing urgently needed climate action

In our systematic literature review, we also found authors who reflect on (renewable) energy projects that might be urgently needed but generate unjust impacts on marginalized communities. In the context of large renewable energy projects, Lehmann and Tittor conclude that “... triple inequalities can imply the denial of RE projects by actors who belong to marginalized groups – despite of a global urgency of decarbonization (Lehmann and Tittor, 2021, p. 1)”. With ‘triple inequalities’, Lehmann & Tittor refer to the risk that marginalized communities, who have little (historic) responsibility for climate change, and who are currently facing most impacts of climate change, also (will) bear the costs of new energy projects. An example of energy projects that are initiated due to the urgency of climate action, with (unintended) unjust impacts, is the production of wood pellets for heating fuel. This disproportionately impacted rural (and marginalized) communities living close to wood pellet factories in the Southeastern United States (Koester and Davis, 2018).

Another prevailing dynamic is the tendency to misuse the just transition rationale as a discourse of delay in climate action. Shue (2023) and Cobb (2022) point out that the denial of anthropogenic climate change becomes increasingly implausible. Hence, actors that have stakes in fossil fuel-intensive industries resort to more subtle ways of delaying climate action. According to Shue, this includes strategies like the promotion of carbon offsets, greenwashing, and heavy lobbying, which are also practiced by politicians. This relates to the critique by Heffron and McCauley on just transitions: the scholars argue in a recent publication that the focus of just transition policies is mainly on compensating the fossil fuel industry and that just transition funds mainly support the continued use of fossil fuels (Heffron and McCauley, 2022). Practiced in this way, the authors argue, the ‘Just Transition’ is a threat to the Energy & Climate 2030 targets.

Adding to this, a study by Lamb et al. (2020) shows that justice considerations are prone to become a delay discourse. Example quotes that they use to illustrate this are “we can’t allow climate protection to jeopardize prosperity and jobs” by the German Minister for Economic Affairs and Energy, and the claim by the UK Treasury minister that an aviation tax would “hammer hard-working families and prevent them from enjoying their chance to go abroad” (both quotes taken from Lamb et al., 2020:4). Also, policymakers are susceptible to argue for disproportional caution in setting ambitious levels of climate policy because they fear to lose public support. By emphasizing the downsides of urgency in climate action or energy transitions, attention is deflected from the harm that these policies can avoid, which closes the door to building more inclusive policies (Lamb et al., 2020). As such, energy justice and just transition considerations can jeopardize urgently needed climate action.

## 5.2. Enabling dynamics between urgency and justice

Through our systematic literature review, we also found scholars that foreground reinforcing dynamics between urgency and justice (Gerrard and Wannier, 2013; Höffken et al., 2021; Newell and Simms, 2021; Nkrumah, 2021; Sokolowski and Heffron, 2022; Stanczyk, 2022). For example, Höffken et al. (2021) state: “When engaging in a less dualistic and more integrative way of thinking about urgency and justice we can see them as two parts of the same coin: rather than being oppositional, both notions can reinforce each other’s thrust (p. 159)”. In addition, we found publications focusing on the urgency to tackle injustices in energy systems, which require energy transitions (Islar et al., 2017; Kumar et al., 2020; Partridge et al., 2018). We refer to both considerations as a dynamic in which urgency in energy transitions enables justice. In addition, there are also many studies that foreground the importance of justice in creating public support for urgently needed energy projects and policies. As such, justice can also enable urgently needed climate action.

### 5.2.1. Enabling justice by treating energy transitions with urgency

The authors focusing on how urgency in energy transitions can enable justice, mainly foreground climate justice aspects. Newell and Simms emphasize in their article that a transition pathway that is in speed and scale incompatible with climate change targets, will consequentially lead to: “a world of worsening climatic upheaval, in which positive feedbacks trigger irreversible processes of environmental change whose impacts disproportionately fall on low income and marginalized groups (Newell and Simms, 2021, p. 912)”. In this line of reasoning, it is imperative to treat the transition away from fossil fuels with urgency to achieve a just outcome. In addition, Nkrumah (2021) and Stanczyk (2022) emphasize that climate change will be one of the major challenges faced by youth, who do not feel represented by (older) policymakers who do not act upon the urgency of the problem.

Several tenets of climate justice can be enabled by urgency in energy transitions. First, an important aspect of climate justice relates to addressing the unequal distribution of climate impacts, which disproportionately affect vulnerable communities with limited access to energy and climate policy decision-making (Newell et al., 2021). For example, accelerating the transition away from fossil fuels is an

urgent matter for climate-vulnerable communities, like the ones living on island states (Gerrard and Wannier, 2013). However, international negotiations on emission reduction targets often favor high carbon-emitting nations Sadai et al. (2022), resulting in the adoption of insufficient measures (Fuss et al., 2016). Such power imbalances contribute to both distributive- and recognition climate injustices: the cost of insufficient measures to prevent catastrophic climate impacts is disproportionately high for vulnerable (island) communities, while their perspectives are not treated as equally important to the perspectives of high-carbon emitting nations. These injustices could be overcome partially if privileged individuals with access to policymaking would treat energy transitions with greater urgency.

Second, urgency in energy transitions can also enable restorative climate justice by preventing future harm related to climate change impacts. Restorative justice holds offenders accountable and centers victims (Motupalli, 2018). In this case, the victims of the current use of fossil fuels are not only present communities but also future generations. The offenders of climate agreements are setting the stage for future harm, making it crucial to act urgently to transition away from fossil fuels. The sooner we decrease greenhouse gas emissions, the higher the chances of limiting global warming to 1.5 °C, which is necessary to prevent further harm (Goulder, 2020). Therefore, urgency in energy transitions is not only a means of addressing present injustices but also a means of preventing future harm and achieving restorative climate justice.

Additionally, energy transitions can be utilized to tackle injustices of different natures in the energy system. According to various scholars, there is an urgency for tackling energy injustices, including an urgency to increase marginalized communities' access to renewable energy, education, and healthcare (Islar et al., 2017), an urgency to transition communities to cleaner cooking systems (Kumar et al., 2020), and an urgency to tackle energy insecurity and inequality (Partridge et al., 2018). Urgency in the transition away from fossil fuels can enable distinct types of energy justice, especially restorative justice, if this transition is utilized to tackle existing energy injustices. However, as we argue in 5.1.2, under the time pressure of urgency the opposite could also happen in which injustices are perpetuated in new energy systems.

### 5.2.2. Justice as enabling urgently needed climate action

In our systematic literature review, we found authors who reflect upon the idea that urgently needed energy projects can be rejected on justice grounds (see also Section 5.1.2). If not enough attention is given to procedural, distributive, recognition, and restorative justice, public support for urgently needed energy (transition) projects and policy will lower, consequently slowing down the implementation of such urgently needed projects and policies. Conversely, this also means that focusing on the different aspects of justice can enable urgently needed climate action. In our systematic literature review, we found publications highlighting the importance of justice considerations as a condition for creating a rapid energy transition. Sokołowski and Heffron analyzed the literature on energy policy failures, stating that a lack of both urgency and justice creates energy policy failure (Sokołowski and Heffron, 2022). The authors further state that an energy policy failure can also be described as an unjust energy policy, thereby centering energy justice as a condition to reach energy and climate goals. Williams and Doyon more firmly express this stance: “we cannot achieve a rapid sustainability transition without addressing the question of justice (Williams and Doyon, 2019, 144)”.

Both energy justice and just transition scholars foreground justice as a condition for creating a rapid energy transition by many scholars (Roddis et al., 2018). With regard to energy justice, many articles and cases show that procedural energy justice can enable public support and social acceptance of energy projects and energy policies. The literature on energy communities and procedural justice is exemplary in this regard (see for example Hogan et al., 2022; Simcock, 2016). In the context of just transitions, Mundaca et al. also couple public support and acceptance mainly to procedural aspects of justice, stating that “the institutional representation of stakeholders and the ability to be heard are of prime importance (Mundaca et al., 2018, p. 294)”.

Furthermore, with regard to urgency and just transitions, Cha argues “understanding and mitigating the economic and social costs [of reducing emissions], known as just transition, can help build public support and acceptance of a low-carbon transition (Cha, 2020, p. 1)”. The importance of accounting for groups impacted by the phase-out of fossil fuels, to create public support for accelerating energy transitions is also acknowledged by for example Eisenberg (2019) and Newell and Mulvaney (2013). An example of procedural and distributive injustice related to just transitions is given by Mehleb et al. (2021), who investigated the yellow-vest movement in France. The authors show that it was not the carbon tax, but the perceived unfairness concerning the procedures and the distributions of costs and benefits that created the most opposition against the carbon tax policy. The protests eventually lead to the postponement of the carbon tax. Hence, distributive, procedural, and recognition justice are important enablers for taking urgently needed climate action.

### 5.3. Reflecting on the urgency-justice dynamics

Above, we have shown that there are multiple ways in which urgency and justice interact in the context of energy transitions. In sum, we find that:

- 1 Procedural justice in the context of climate justice, energy justice, and just transitions is jeopardized by urgency in energy transitions.
- 2 The dynamics that urgency brings to decision-making can jeopardize restorative and distributive energy justice. This is because, amongst others, the prioritization of short-term relief and placebo policies can hinder overcoming (embodied) energy injustices.
- 3 Energy justice considerations can lead to the dismissal of urgently needed renewable energy projects.
- 4 Just transition discourses are also misused by politicians to delay energy transition policies, and just transition funds and policies might (unintentionally) result in financially supporting fossil fuel usage. As such, a focus on just transitions can also jeopardize urgently needed climate action.

- 5 Most aspects of climate justice, except procedural justice, are enabled by urgency in energy transitions.
- 6 Several aspects of energy justice and just transitions, but in particular procedural justice, are of key importance to create public support for urgently needed energy transition policymaking.

Sometimes, these interactions are contradicting. For example, relating to energy justice: on the one hand, urgency in energy transition policymaking can lead to the perpetuation of energy injustices (Section 5.1.2), as the urgent pressure to act might foster rash decision-making, placebo policies, and a focus on short-term relief. On the other hand, fostering rapid energy transition measures might also tackle energy injustices (Section 5.2.1).

Furthermore, we focused on distinct groups that are targeted by climate justice, energy justice, and just transitions. Of course, these groups can overlap. As such, it is not always straightforward to designate clear victims of the (fossil-fueled) energy system. As Klinsky points out, there are many people who (will) suffer from climate change, while also having contributed to it (Klinsky, 2017). Finally, it is important to keep in mind that the different aspects of justice do not exist in silos: they impact each other. For analytical reasons, however, in this article we focused on certain types of justice aspects to nuance their relation to urgency. With this, we aim to give policymakers the tools to better navigate the enabling and jeopardizing dynamics of urgency and justice in their efforts for realizing rapid and just energy transitions. In addition, we hope to spark further discussion in the energy transition literature on these dynamics. In the following section, we highlight some key points that, following our analysis, demand further attention.

## 6. Conclusions

In this study, we sought to investigate the relationship between urgency and justice in the context of climate change and energy transitions. We found the main dynamics to be *enabling* and *jeopardizing*. Importantly, there is much nuance within these dynamics, in which for example some distinct aspects of justice can simultaneously be enabled and jeopardized by urgency. Based on our analysis we outline the following recommendations for energy transition research and policymaking:

First, the enabling and jeopardizing dynamics that we identified in our analysis are likely to occur, but do not emerge inevitably. Jeopardizing dynamics can be minimized and mitigated when making energy transition policies; and enabling dynamics can be utilized by policymakers to maximize the potential for urgency to enable justice in energy transitions, and vice versa. To create just transition policies, it is therefore essential that scholars and policymakers understand and focus on both dynamics. Unfortunately, we find in our analysis that policymakers tend to foreground jeopardizing dynamics: justice is prone to being used as a discourse for delay in climate action by politicians (Lamb et al., 2020). Such a perspective ignores the justice implications of slowing down energy transition policymaking. This implies that policymakers need to increase their focus on the enabling dynamics between urgency and justice in energy transitions, to navigate both dynamics.

Second, we see that some research focuses on the tradeoff between urgency and justice. While we recognize this, we would like to stress that there exists a tradeoff between distinct aspects of climate justice, energy justice, and just transitions, and the tenets by which they are underpinned. Some of these aspects are enabled, and some are jeopardized by urgency. As such, energy transition policy will likely lead to injustices, either because the transition is not in line with the urgency of climate action, or because urgency in decision-making jeopardizes certain aspects of energy justice and just transitions. Of key importance is to balance or weigh the different possible injustices. This highlights the need for future research efforts on weighing or measuring justice impacts in energy transitions.

As a starting point for weighing justice impacts, we suggest looking beyond nation-state borders, including a focus on the principle of common but differentiated responsibilities. Considering the importance of public support for energy transition policies, a potential pitfall might be that policymakers and researchers foreground justice concerns of the communities that influence public support. Such a focus, however, needs to be complemented so that considerations of justice impacts that occur along the value chain are taken more prominently into account.

Third, we recommend increasing the focus on justice considerations throughout the value chain of (novel) energy systems, both in transition research and in policy. The upstream and downstream human rights and environmental impacts of the energy system and energy transitions need to be considered in national energy transition policies. An example of a step in the right direction is the European Commission's proposal for a *Directive on corporate sustainability due diligence*, which expresses an aim to foster sustainable and responsible corporate behavior throughout global value chains (European Commission, 2022).

Fourth, we would like to point out that the urgency of mitigating climate change, and the severity of climate impacts, will only grow if no (adequate) energy transition is performed. *Postponing* policy will lead to a higher sense of urgency to transition away from fossil fuel usage, which will postpone the jeopardizing dynamics between urgency and justice. Goulder (2020) argues that delaying climate action will lead to significant and costly temperature increases, and as the costs of mitigating climate change will rise, the willingness of politicians and publics to bear these costs might lower. In a similar vein, we expect as the urgency of climate action increases, the jeopardizing dynamics between urgency and justice will be reinforced, leading to injustices of for example procedural and recognition nature. Postponing energy transitions to deal with jeopardizing dynamics is therefore fairly unproductive. Instead, we suggest going forward with energy transition policies while taking these jeopardizing dynamics seriously and mitigating them where possible.

Fifth, there are alternative initiatives, like energy communities and citizen assemblies, in which the jeopardizing dynamics between urgency and justice are successfully mitigated. The outcomes of these initiatives are not per definition just, as van Bommel and Höffken (2021) analyzed in detail in the case of community energy initiatives. Yet, these initiatives do inhibit the potential to enable procedural justice and just transition principles while adhering to the urgency with which climate action is needed. Lessons can be learned from inclusive community energy initiatives, successful citizen assemblies, and grassroots movements, to mitigate the jeopardizing dynamics of urgency and justice.

Finally, we suggest challenging underlying structures of inequality and power differences to minimize the jeopardizing dynamic of urgency and justice. In a system of high inequality, urgency in decision-making will likely perpetuate inequality, at worst exacerbate it. Energy policy rooted in the techno-optimistic, imperialistic, capitalistic schools of thought that are largely responsible for inequality and climate change, will face many challenges to successfully counteract inequality and climate change. In a similar vein, Bainton et al. (2021) conclude that it is not possible to simultaneously support an urgent energy transition and aim for energy transitions to have a just outcome “without radically reimagining how resource extraction is conducted or without confronting the internal contradictions of extractive capitalism (Bainton et al., 2021:631)”. This line of thought demands a more critical reflection on energy transition research, including for example reflections on capitalism in sustainable transitions (Feola, 2020) and attention to decolonizing transitions and embracing more epistemic diversity (Ghosh, et al., 2021), but also alternative pathways like degrowth (Dunlap and Laratte, 2022) or post-growth (Nieto et al., 2020), and associated notions like energy sufficiency (Bocken and Short, 2016; Zell-Ziegler et al., 2021), fossil fuel divestment (Healy and Barry, 2017) and societal metabolism (Marín-Beltrán et al., 2022). These reflections and considerations can be useful to enhance the enabling potential between urgency and justice in energy transitions.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

No data was used for the research described in the article.

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