

# **Energy, capability, and justice**

**A foundation for a normative account of energy systems**

Nathan Adam Wood

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The candidate confirms that the work submitted is his own, except where work which has formed part of jointly-authored publications has been included. The contribution of the candidate and the other authors to this work has been explicitly indicated below. The candidate confirms that appropriate credit has been given within the thesis where reference has been made to the work of others.

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# Abstract

Energy impacts our lives in a multitude of ways. Some of these impacts can drastically improve our lives, others can be detrimental to the things we value in life. In this thesis, I develop a space through which to connect energy to the things we value to better understand and articulate the impacts of energy systems.

To develop this space, I explored the ways through which we have commonly connected energy systems to the things we value and investigated the efficacy of more recent attempts to understand these connections through ideas of energy justice. To assess the efficacy of these approaches, I outlined the role moral and political philosophy can plausibly play in describing the things we value and their relations to energy systems. I found a substantial divergence between my own account of the role of moral and political theory in describing the impacts of energy systems and the uses of moral and political theory in existing approaches to energy justice. I argued this divergence limits the capacity of energy justice approaches to draw on moral and political philosophy to articulate and analyse the impacts of energy system in a meaningful way.

I produced a series of outputs which form a foundation for a viable account of energy justice. I developed a capabilities-based framework to articulate the impacts of energy consumption and production and the tensions between them. I outlined a pluralistic approach of testing the ability of different moral theories to reflect the dynamics underpinning energy dilemmas. I presented arguments detailing how trivalent conceptions of justice, which pre-date energy justice discourse, can form a viable basis for an account of energy justice. In concluding, I point towards future avenues of research, conceptual and procedural, through which to develop this foundation into a reflexive account of energy justice.

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## List of abbreviations (LOA)

CC	Climate change
CCM	Climate change mitigation
CO <sub>2</sub>	Carbon dioxide
EJ	Energy justice
FAO	Food and agricultural organisation
FFDE	Fossil fuel derived energy use
HDI	Human development index
IEA	International energy agency
IPCC	Intergovernmental panel on climate change
NIMBY	Not in my back yard
TCEJ	Triumvirate conception of energy justice

# Chapter 1 Energy and the things we value

This thesis focuses on the relationships between energy systems and justice; how we should discuss these and how we can best capture them. Early on, this thesis points to a collection of literature which illustrates how both the production and consumption of energy can significantly impact on attaining or being deprived of the things we hold valuable in life. Describing the aspects of energy systems that impact the things we value is only one side of understanding these relationships. Understanding and articulating what it is in life which we hold valuable and how we might meaningfully connect these values to energy systems is another substantial pursuit. It is this latter pursuit on which this thesis primarily focuses.

A central facet of this thesis is that to understand the relationships between energy systems and the things we value requires an effective means of articulating the things we hold valuable, connecting them, and understanding how energy systems impact these valuable things. Disciplines which study the production and consumption of energy are not always best situated to conceptualise or capture these complex relationships. The introduction of this thesis outlines why this is and sets out a framework which reaches the necessary level of abstraction for both the things we value and different aspects of energy systems to allow us to discuss them in relation to one another, enabling the illustration of the important relationships between them.

The first section of this chapter moves briefly through ways in which energy systems have been connected to our lives through the dichotomy of production and consumption. Developments in this thinking are drawn on to illustrate how the production and consumption of energy stem from interconnected systems which impact the things we hold valuable in both positive and negative ways.

The following sections focus on understanding how the production and consumption of energy in relation to things we value can help to explicate the role of energy in our lives and the importance of such values in shaping the systems that produce the energy we use. Section 1.1 elaborates on the need to discuss energy at a level of abstraction which connects to our lives. Section 1.2.1 – 1.2.3 outlines the ways in which this level of abstractions has been achieved and the developments which have produced more nuanced understandings of energy systems. Section 1.2.4 introduces the concept of the “energy dilemma” and outlines how we might understand the connections between energy systems and our lives as pertaining to moral issues. Section 1.3 covers existing work, namely approaches to energy justice, which attempts to explicate and respond to energy dilemmas using ideas of justice from moral and political philosophy. Section 1.4 outlines several moral and political distinctions and concepts which offer a preliminary understanding of justice and which help to justify the selection and use of moral

concepts used throughout the rest of the thesis. Section 1.5 illustrates how these distinctions and concepts can be used to question the efficacy of existing approaches to energy justice, and how these concepts might be used to further develop our understanding of the relationship between energy systems and the things we value and the importance of understanding this. Sections 1.6 and 1.7 outline the methods employed in this thesis and breakdown where these methods are employed throughout this thesis.

## 1.1 Understanding energy

‘Why does energy exist? One does not see or feel energy. You can detect directly and sensorially certain parameters that are related to the quantity called energy: mass, temperature, velocity, shape, phase, position, chemical composition, electric charge, separation, *etc.* But none of these is energy’ (Lehrman, 1973 p.15)

Despite ambiguity over its definition, energy is a measurable property and its transformations and subsequent effects can be observed and accounted for with relative confidence. Lancor (2014) describes energy as ‘rich in lexical and conceptual complexity that makes it fertile ground for misunderstandings’. It is a broad idea that arises in and embodies numerous disciplines, discourses and abstractions (Sovacool and Dworkin, 2014). Different fields provide their own working definition that is useful in their own context, but these definitions are not always uniform (Lancor, 2014). The first law of thermodynamics states that energy can neither be created nor destroyed. The quantity of energy in the universe is fixed, only transforming from one form to another, never decreasing nor increasing. All events require the transfer of energy from one system to another – if an object is to be moved or heated it must have some force transferred to it to do so – natural scientists refer to this as performing ‘work’ on an object. However, this concept of work is seemingly detached from the lives we live and does not readily help us articulate the relationship between energy and the things we value.<sup>1</sup>

Instead of energy transformations, the relationship between energy and the things we value might be better articulated through discussing energy in terms of trophic levels – the different stages through which energy is transferred in ecosystems. Biological sciences describe life as a continuous input of energy. Light produced as a product of fusion occurring in the centre of our sun, is converted into chemical energy via photosynthesising cells, which is in turn used to produce biomass. Biomass is consumed by animals (including us humans), the chemical energy locked in this biomass enables us to move, work, think, and reproduce – things we might reasonably value. However, these transfers of energy focus exclusively on the energy we ingest and absorb. We are surrounded by and embedded in a range of systems which enable us to attain different ends by harnessing energy in varying forms to

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<sup>1</sup> Shove et al. (2014) make a similar point regarding the concept of work when connecting energy and social practices.

achieve valuable outcomes. Trophic levels do not incorporate the energy in these systems or provide means to connecting these systems to things we value.

Neither the language of transformations, nor trophic levels can adequately describe the relationships between our use and production of energy and the things we value. When thought of in these ways, energy seems almost entirely removed from the areas of our lives which we might have reason to value.

This thesis is not so much concerned with explaining energy transformations or trophic level energy transfers, but rather in how energy, our capture and use of it, overlaps with what we value about our own lives and the lives of others, and how we might better come to understand and articulate this. Releasing the chemical energy stored in biomass to heat food or between hydrocarbons to push the pistons which power a motor car, or converting the potential energy of water stored in a dam into electric charge to power a street light, are all examples that we can begin to relate to the lives of humans. However, to meaningfully discuss these issues requires terminology and concepts that can capture both the complexity of energy systems and the quality of human lives. This requires discussing energy at an abstraction beyond that of a property that is transferred between objects or through trophic levels. The following sections explore two ways in which literature has articulated the relationship between energy and our lives: through consumption and through production.

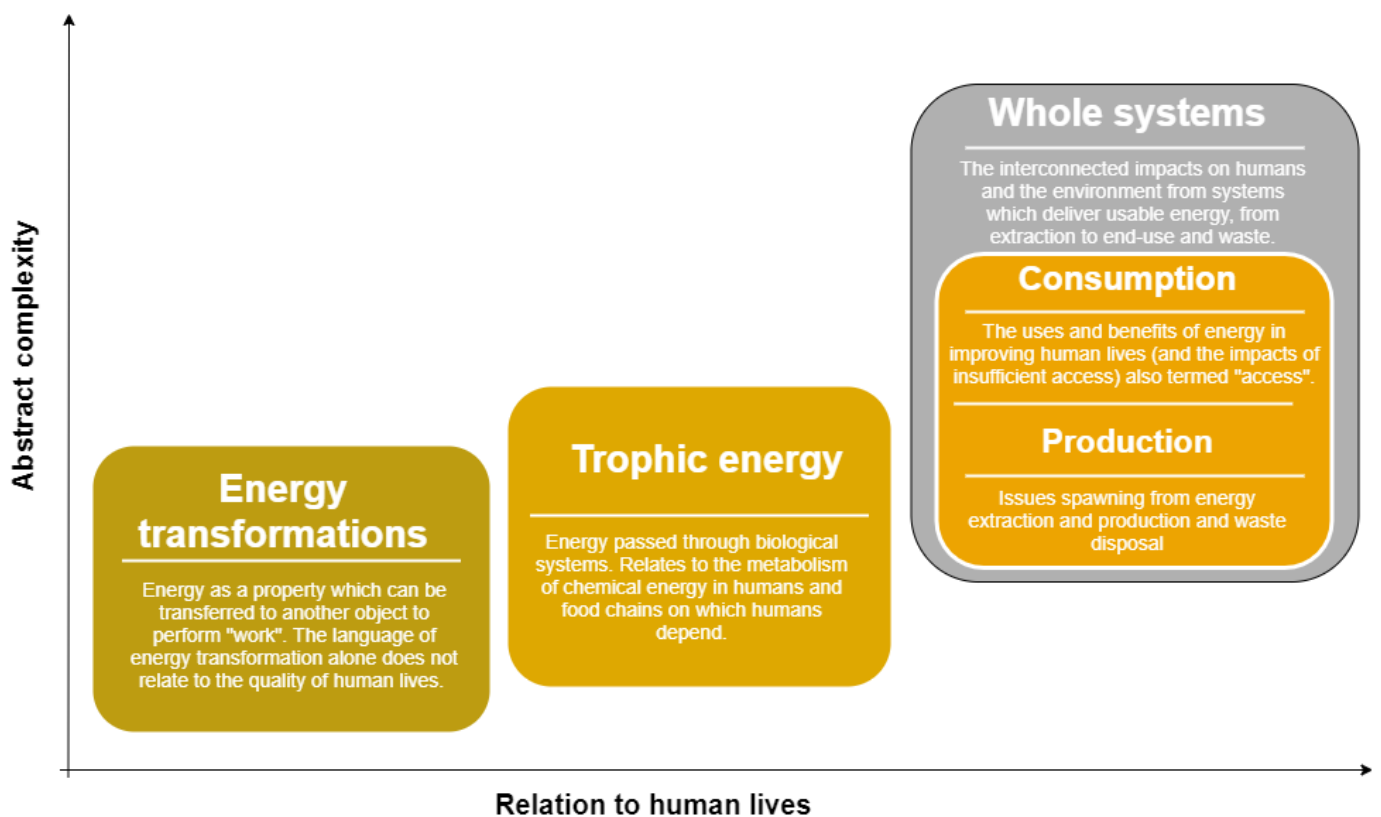


Figure 1-1 Arriving at conceptions of energy which enable the articulation and relation to human lives. Source: Own illustration produced using draw.io

## 1.2 Contextualising energy: from production to consumption

### 1.2.1 Consumption and Access

The ability of a society to capture and consume energy has been and remains seen as fundamental to development (White and Carneiro, 1949, United Nations, 2018). Development is often viewed normatively as *progress*, although ideas of development and the means to achieve these are being increasingly contested (Steinberger et al., 2012, Raworth, 2017, Raworth, 2012, O’Neill et al., 2018, Steffen et al., 2015). For example, Steinberger and Roberts (2010) found that increasing energy use beyond a certain level did not necessarily result increases in a range of human development indicators.

Aside from arguments contesting the extent to which energy use contributes to development, the indicators on which development is measured may not be the most effective means of articulating why energy access is important in our daily pursuits. For example, the human development index is a composite of life expectancy, gross national income per capita, and level of education, but these concepts alone do not provide the explanatory link between energy access and the other areas of our lives which we value, such as participating in society. Therefore, although development and associated ideas of progress are linked to energy access, it does not necessarily help us to understand the importance of energy access in our lives. Rather, it might be more appropriate to see development and energy access as aiming towards the same ends - as opposed to framing energy access as a *means* to development. To better understand these ends it helps to visit literature on energy access.

Discussion of energy relating to human lives has often been framed in terms of *access* (Bickerstaff et al., 2013, Walker and Day, 2012, Gillard et al., 2017). Access has often been articulated in terms of the ability to use a range of energy services (lighting, heating, refrigeration etc.), which are frequently embedded within a domestic setting (Bouzarovski and Petrova, 2015). These services all depend on the delivery of energy in various forms to certain locations. This energy will likely have been embodied in natural resources such as coal, oil, gas, moving water, wind, and sunlight – energy in this form is often described as ‘primary energy’ or ‘energy carriers’ (Pachauri et al., 2004). The primary energy which is delivered to humans in the form of services is referred to as ‘end-use energy’ (Sovacool, 2011). ‘Energy services’ subsequently acts as a term which enables the relation of energy, held and carried in various forms, to services which improve a human life (Sovacool, 2011, Fell, 2017).

Discussing our relationships with energy in these terms creates a space for the articulation of the benefits of energy access for humans. For example, the delivery of primary energy in the form of gas, enables us to heat our homes and prepare food, whilst being connected to electrical grids enables us to illuminate these spaces. These services in turn yield numerous benefits to our mental and physical health (Liddell and Morris, 2010, Marmot et al., 2011). Living in a warm, well-lit home for example, helps people to avoid and recover from illness, but can also produce a suitable environment for a child to study and complete their homework (Liddell, 2009). Of course, the converse is true of these relationships. Living

in a cold, poorly lit home, may exacerbate an illness and make it difficult for a child to study at home. As such discourses which focus on energy access are primarily motivated by the problems stemming from its absence (Boardman, 1991, Boardman, 2013).

Discourses focusing on the deprivation of adequate energy services have sought to conceptualise these issues under terms such ‘fuel-poverty’, ‘energy-poverty’ and ‘domestic energy deprivation’ (Bouzarovski and Petrova, 2015). Li et al. (2014) note that there has been significant confusion as to what each term aims to capture, with certain authors taking them to be synonyms, whilst others pointing out key differences and functions in the individual concepts. Bouzarovski and Petrova (2015) outline ‘energy poverty’ as a term used to describe low levels of networked energy provision due to economic under-development, and ‘fuel poverty’ as a term to describe rising energy costs and issues of access within developed countries. Regardless, each term embodies or relates to a concern regarding the impacts of inadequate access to a set of energy services (although this concern might not always be articulated in relation to “services”).

Both energy and fuel poverty have traditionally focused on energy within the home, and subsequently often end up focusing on thermal energy and lighting (Buzar, 2016, Li et al., 2014, Sovacool et al., 2012). Energy services, however, improve our lives in other ways external to the domestic setting. In order to capture these interactions some scholars have proposed expanding the scope of these concepts. Sovacool et al. (2012) put forward arguments to broaden the scope of energy poverty, arguing that mechanical power and mobility are essential energy services in reducing poverty (also see Lucas et al. (2016) and Mattioli et al. (2017)). Such additions to these concepts help us recognise the breadth of impacts energy access (or lack of) has on human lives.

As we introduce more variables, discussing energy in terms of access becomes ever more complex. Inequalities between demographics and different personal situations mean that a set of energy services or level of access to end-use energy for one person will not result in the same outcomes for another. Walker and Day (2012) for example, outline how fuel poverty strongly reflects several social inequalities, illustrating that factors such as income, age, health, and disabilities all affect how vulnerable a person is to fuel poverty.

Further questions then arise as to what level of deprivation of these services requires action to be taken (Walker and Day, 2012). Judging which services, and to what levels, we should prioritise ultimately entails judging which activities and states we value and which spatial, social, economic, and political features impede or facilitate the attainment of these (Bouzarovski and Simcock, 2017). The goal of these discourses is not the provision of specific services, but to deliver certain outcomes for people and societies. These judgements often ultimately rely on normative beliefs, intuition, and reasoning. An outcome like good health seems to be an intuitive and objective goal that the provision of energy services can aim to contribute to. However, once we again ask why good health is important, our



answers lead us back to normative reasoning; good health is pertinent to maintaining healthy social relations, being able to participate in society, being able to reason. But there is no way to objectively prove that to do, be, and have certain things is right or good. Ways of exploring, articulating, and reasoning which outcomes we should aim for and which things in life we should value are explored shortly. However, first it is important to explore the other ways in which energy and the systems that extract, transport, and produce it relate to human lives.

## 1.2.2 Extraction and production

The extraction and production of energy impacts the lives of humans across a range of scales. Primary energy sources, such as coal can help illustrate this point. The extraction of coal is associated with a range of issues that relate to the quality of people’s lives. For example, figure 1-2 taken from Healy et al. (2019) illustrates a range of issues stemming from coal supply-chains which impact on the quality of people’s lives, including forcible displacement, hazardous waste and environmental contamination. Later the combustion of this coal, to produce heat and electricity, will emit greenhouse gases, contributing to on-going climate change (IPCC, 2018).

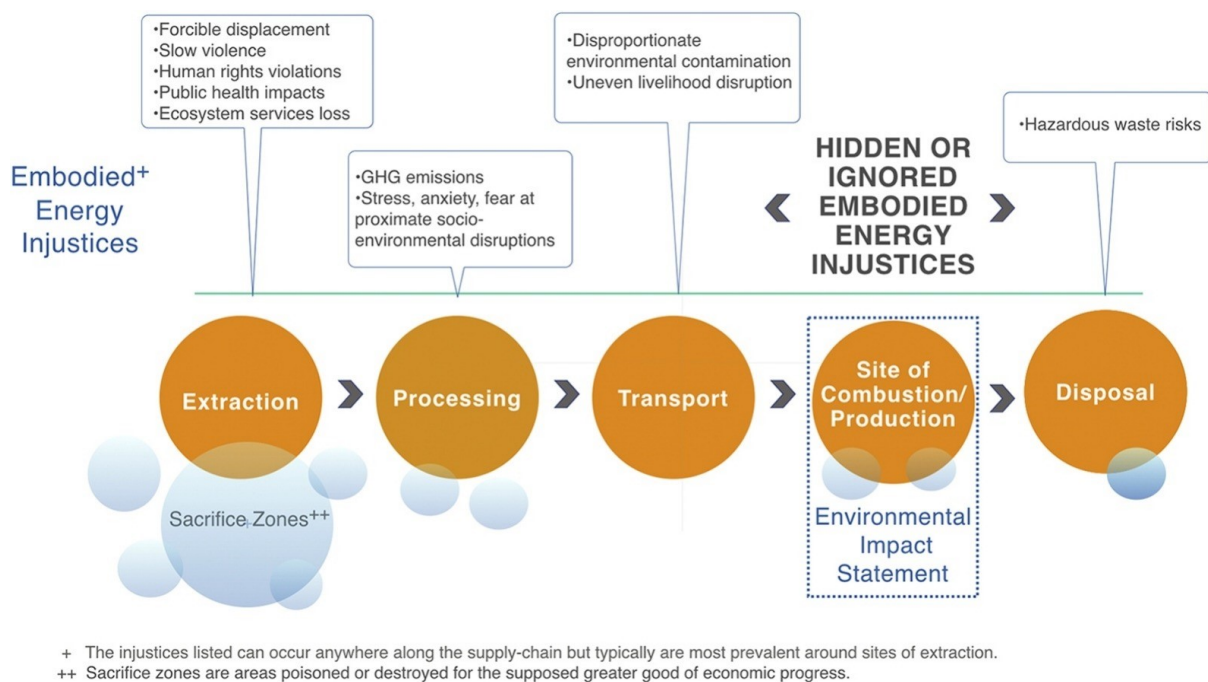


Figure 1-2 Healy et al.'s, (2019) illustration of energy issues associated with the coal supply chains from extraction through to waste disposal.

Climate change itself underpins and contributes to a multitude of issues such as famine, dislocation and separation, droughts, and heat-waves, and these events and situations contribute to many forms of human suffering (Adger, 2006, Shue, 2014, Kinney et al., 2008, Greenough et al., 2001, Rosenzweig et al., 2001). Evidently a single energy source can produce a range of issues and hazards throughout its extraction, production, and use. Many such examples exist. Air pollution, a cause of respiratory

diseases, is linked both to industrial energy use and the combustion of fossil fuels for freight, public and private transport (Gallagher, 2005, Derwent et al., 2005, Gulliver and Briggs, 2004, Harrison et al., 2015). Wind turbines can spoil the visual and audio landscape for those who live in proximity to them (Petrova, 2016, Wolsink, 2000). Nuclear energy and its accompanying waste poses security risks and disposal problems for present and future generations (Berkovitz, 1992). The use of hydroelectric technology is a source of displacement and can disrupt ecological and agricultural systems and thus local food security (Xie, 2003, Zhouri and Oliveira, 2006).

Evidently the production of energy can negatively impact a range of things we value. In noting this, we can therefore see that both energy production and consumption are connected to the attainment and deprivation of many things we might have reason to value. The following sections outline how we might connect and discuss these issues in tandem.

### 1.2.3 “Whole systems”

So far, I have established that issues surrounding energy systems have been conventionally viewed as either pertaining to consumption or production. However, within recent energy scholarship there has been a push to recognise the interconnectedness of issues of consumption and production (Winkel, 2018, Sovacool et al., 2015, Bouzarovski and Simcock, 2017). I specify recent energy scholarship because work exists external to this sphere has articulated similar dynamic in relation to issues of environmental justice, which often begin with, or relate to, the production or consumption of energy (see Holifield et al., 2009, Walker, 2009). Within energy justice, a discourse and set of approaches explored in later sections, this push has manifested as a “whole systems” approach (Jenkins et al., 2016, Jenkins et al., 2014).

Bouzarovski and Simcock (2017) offer an apt description of this as a call to “transcend the production-consumption binary”. Bouzarovski and Simcock (2017) describe how energy poverty, an issue typically described as occurring at the end-use stage of energy systems can be influenced by factors such as local climates, the quality of housing stock, and the quality of energy transmission infrastructure. The logic underpinning “whole systems” therefore is that focusing on specific points at which energy related problems manifest may not reveal the underlying causes of the issue.

### 1.2.4 Introducing the energy dilemma

The range of energy related issues discussed so far can be described using the term ‘energy dilemma’ (Sovacool, 2008, Bradshaw, 2010, Qing and Sullivan, 1999). This term is often used loosely, and I have been unable to find a definition for it. Authors tend to draw on the term when describing a specific issue or set of issues which result from an energy system. For example, a country’s need to transition to renewable energy whilst meeting growing energy demand might be termed an energy dilemma, but so might the public opposition to a small scale wind development, or any of the issues revolving around energy access discussed above. Fuel or energy poverty and their underpinning social and material

deprivations might also be summarised using the term. In this way ‘energy dilemma’ can act as a useful catch all for any issue pertaining to energy systems, not just describing a problem that exists in a singular instance or space, but one that is connected to and exists in tension with other phenomena and dynamics in broader society.

Authors tend to discuss energy dilemmas from a normative standpoint. They are described as normative because they deviate from how a person believes the world *ought* to be. This view of the world is often informed by implicit assumptions about the types of lives, goods, and states people or societies are entitled to live, have, and be. We can objectively measure how many households have poor insulation or how many populations are displaced by large scale energy projects, but we have to draw on reason and intuition to justify why the consequences of these situations are worthy of discussion or concern. Often, we assume which situations and events are problematic because they conflict with something we hold valuable, whether that is freedom, fairness, equality, democracy, autonomy, or some other value. Moral values like these are inherent in fully realising and understanding the range of issues energy systems present us with today (Hall, 2013, Sovacool et al., 2013, Jones et al., 2015). The following section outlines a simple exercise to illustrate how we might arrive at connecting certain values to the benefits and burdens which arise from and in relation to energy systems.

### 1.2.5 Energy Dilemmas and Moral Dilemmas

Because of its broad range of uses, describing an energy related situation or event as ‘energy dilemma’ has a limited capacity to convey seriousness or severity; little information is expressed regarding the urgency and extent to which an energy dilemma impacts the things we value. This disconnect between energy dilemmas and their apparent ethical implications has prompted a number authors to reassess how we discuss and view energy systems (Sovacool et al., 2016, Sovacool and Dworkin, 2014, Jones et al., 2015). Within the past decade many energy scholars have attempted to broaden their focus to incorporate these issues into energy scholarship and policy (Bickerstaff et al., 2013, Walker and Day, 2012, Healy et al., 2019, McCauley et al., 2013, Jenkins et al., 2016, Sovacool et al., 2013, Sovacool and Dworkin, 2014, Hall, 2013). These approaches will be explored in greater detail shortly. However, I find it useful to outline a simple exercise concerning the use of moral theory to outline and frame an energy dilemma.

This particular exercise draws on the work of Aristotle to arrive at a goal or value to which our actions should aim, once we discover this value, we can then use it to assess how access to energy and the issues which spawn from energy systems aid or hinder our pursuit of this goal. This method is just one example as to how we might reason what is important in our lives and the lives of others. The literature on morality and justice is vast and contains a multitude of approaches to reasoning and justifying what is morally important. I chose to draw on Aristotle’s approach here because of its simplicity and

approachability - it seems a good place to start the ball rolling when introducing more complex and detailed understandings of morality and justice later.

### 1.2.6 An exercise in framing energy dilemmas through ‘the ultimate end’

In *Nicomachean Ethics* Aristotle asks ‘what is the ultimate purpose of human existence?’ In asking this Aristotle is pursuing the ultimate end of all our actions (Ross et al., 2009). Aristotle reasons ‘to be an ultimate end, an act must be self-sufficient and final, that which is always desirable in itself and never for the sake of something else’. To answer his question Aristotle assesses whether the ends of certain actions are actually in the pursuit of something else. Essentially asking why we want a particular good or outcome from a pursuit. Aristotle concludes ‘it is easy enough to see that we desire money, pleasure, and honour only because we believe that these goods will make us happy. It seems that all other goods are a means towards obtaining happiness, while happiness is always an end in itself.’

By happiness Aristotle is referring to the concept of *eudaimonia*. *Eudaimonia* differs from traditional conceptions of happiness as an emotion or state that can be brought on in a pleasant situation. Instead *edaimonia* is a richer concept which embodies ideas of flourishing and well-being, which might consist of numerous components e.g. health, education, friendships, participation, autonomy etc. Importantly this conception of ‘happiness’ or *Eudaimonia* is not a means to anything else. And Aristotle argues it is this good to which all other activities ultimately aim.

Combined, the exercises illustrated in figures 1-3 and 1-4 below, illustrate how pursuing the “ultimate end” of energy use offers a means, albeit a simple one, of providing a level of abstraction to meaningfully articulate how energy systems relate to human lives – their impact on the attainment of “the good”. Here we don’t have to subscribe to the idea of *Eudaimonia*, many contemporary theories of morality and justice make space for pluralistic conceptions of the good – the idea that different groups and people will have overlapping but differing ideas about what is valuable in life. These ideas are explored further in later sections (chapters three and four) on capabilities and justice, but I raise this here because we can follow a similar line of enquiry when trying to capture why particular aspects of energy dilemmas are important.

Using an example of accessing energy services (see figure 1-3), we can ask ‘why is it important we have access to adequate lighting?’ This question has multiple answers, for example we might answer, so we can study at home, prepare food when it is dark outside, have guests in our home, and move around safely in the night. Each of these answers seems reasonable. But we can follow our line of questioning and ask why each of the outcomes is important; having guests enables the fostering and maintenance of relationships, preparing food in a safe environment contributes to our health, studying at home can improve our employment prospects. The further we follow this line of reasoning the more abstract our answer will become.

An answer which seems to meet the criteria of ‘self-sufficient and final’, the ultimate reason for measuring, conceptualising, and responding to these issues might be to improve the lives of people are able to lead. Accurately capturing and conceptualising how inadequate access to energy can result in the deprivation of things we value is a vital step towards recognising how we can improve our lives. Similarly, we can view a range of energy dilemmas in reference to how they interfere with the things we conclude are important in our lives.

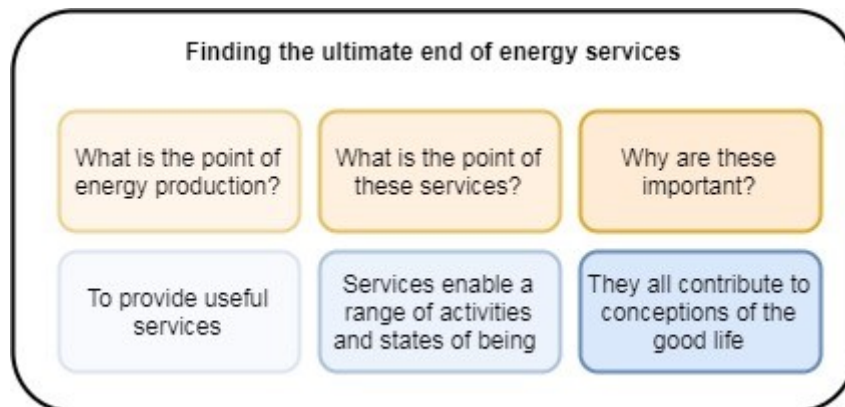


Figure 1-3 a visualisation exploring the ultimate ends of energy services. Source: own illustration produced on draw.io

It might have become apparent that reasons we believe energy access to be important are also the reasons why we find many other things important. The list of goods we need to flourish that energy access can help sustain might also be degraded through the outputs of energy systems. For example, we know that energy access can help us maintain good health but certain products of energy use and production - air pollution for example - can result in the deprivation of good health. Good health is key to many conceptions of a good life (Nussbaum, 2001, Doyal and Gough, 1984, Max-Neef, 1991). As such we can use a similar line of reasoning to frame why certain aspects and impacts of energy systems impede the ability of humans to live out their conception of the good life. Figure 1-4 illustrates this method, using ideas of the ultimate end to explain why an energy dilemma is a *moral* problem.

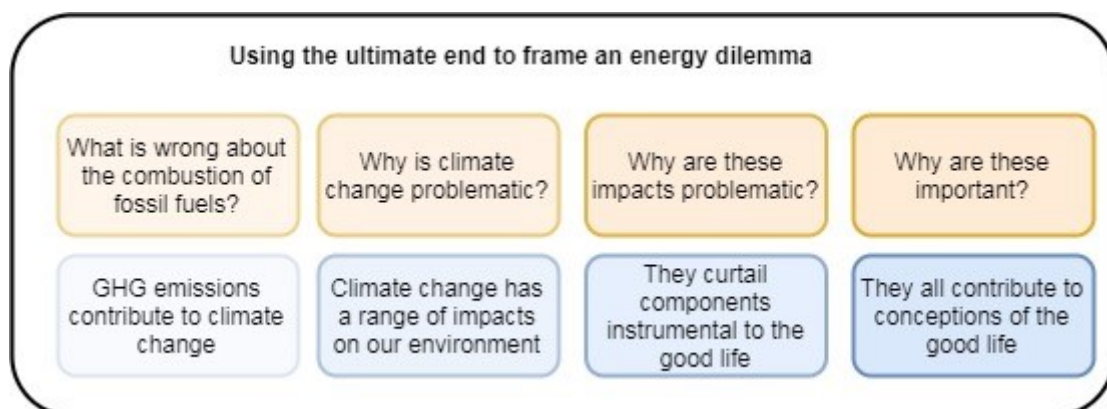


Figure 1-4 Framing the energy dilemma of climate change using the ultimate end. Source own illustration produced using draw.io

This exercise has illustrated one way in which we might begin to view and understand the moral implications of energy dilemmas. Later, this chapter uses the idea of the ultimate end to set out concepts and approaches which can help explore and connect different conceptions of this “ultimate end” to the impacts of energy dilemmas on the things we value. I use the idea of an ultimate end to illustrate how concepts from moral and political philosophy can be used to frame and articulate complex energy dilemmas that span entire energy systems; and how we might understand the necessary spaces for people who endure energy dilemmas to articulate their own values in relation to these energy dilemmas. Before doing so, I discuss a growing range of literature which has begun to relate moral concepts, primarily ideas of justice, to energy systems in different ways. Many contributions of this thesis arise from building on or responding to this literature.

### 1.3 Energy and justice: emerging research

So far, I have outlined the different ways in which different types of energy dilemmas have been discussed and I have illustrated a simple way in which we might connect these dilemmas to the things we hold valuable about our lives. Understanding how we might arrive at considering something normatively or morally problematic does not just depend on how an energy dilemma relates directly to an abstract value but also depends on understanding how societal, material, and political dynamics interact with the attainment or deprivation of this value.

This thesis attempts to establish and understand the efficacy of several recent attempts to use ideas of the things we value, as a means of connecting energy systems to their ethical implications (such approaches do so through drawing on ideas of justice which are explored in the following sections). Based on this enquiry, the outputs of this thesis set the foundations for a broad account of how energy dilemmas relate to the valuable aspects of our lives.

In the following sections I outline two key areas of research which are either critiqued or drawn on throughout this thesis. First is the discourse of “energy justice”. Energy justice as a discourse consists of a number of disparate uses of moral and normative concepts to frame and explore a range of energy dilemmas, but also contains a number of broader over-arching approaches to energy justice. It is primarily these over-arching approaches on which this thesis focuses. Second, are ideas from moral and political philosophy which I see as essential tools in assessing gaps in current approaches to energy justice and then in developing an alternative means of connecting our values to impacts of energy dilemmas. The capability approach is featured in each chapter of this thesis and offers what I argue is a viable space in which to link the impacts of energy dilemmas to people’s lives in a meaningful way.

### 1.3.1 Energy justice: decoupling discourses and approaches

Over the past decade a burgeoning range of literature has drawn on different moral concepts to explore, analyse, and advise on a range of energy dilemmas (Cowell et al., 2011, Walker and Day, 2012, Goldthau and Sovacool, 2012, Sovacool et al., 2013, McCauley et al., 2013, Bickerstaff et al., 2013, Sovacool and Dworkin, 2014, Snell et al., 2015, Jones et al., 2015, Mattioli, 2016, LaBelle, 2017, Galvin, 2019, Pellegrini-Masini et al., 2020, Middlemiss et al., 2019, Day et al., 2016). A key motivation for the import of moral concepts into energy scholarship, is that often energy decisions are decoupled from the range of ethical issues they create or compound (Sovacool and Dworkin, 2015). Moral concepts and ideas of justice in particular, are argued to provide important structures through which to connect energy systems and their ethical consequences (Sovacool et al., 2016).

This general approach of applying ideas of justice to energy dilemmas has spawned a discourse often referred to as “energy justice”. However, before proceeding, it is important to note that relating justice to problems stemming from or relating to energy systems is not a novel idea. A number of literatures and discourses, on which certain energy justice approaches draw on, already focus on energy dilemmas (Walker, 2012, Schlosberg, 2012, Schlosberg, 2009, Schlosberg, 2004, Müller, 2001, Paavola and Adger, 2002, Adger et al., 2006, Shue, 2014).

Energy justice discourse consists of a diversity of contributions. For example, a collection edited by Bickerstaff et al. (2013) contains pieces of work on issues surrounding energy vulnerability, energy production, low carbon transition and nuclear energy. These contributions range in their appeal and use of philosophical concepts, with certain authors drawing substantially on particular concepts and ideas of justice to discuss an issue (Fuller and Bulkeley, 2013), whilst others draw more generally on broadly interpretable concepts such as equity and fairness (Adams et al., 2013). In such collections of work energy justice is used as a broad umbrella term, within which a range of energy dilemmas, discrete approaches, and framings sit simultaneously.

Within energy justice discourse however, individual approaches exist, which seek to offer over-arching approaches or visions of energy justice. These approaches do not solely draw on moral concepts as exploratory or analytical tools to address individual energy dilemmas but attempt to offer a conception of “energy justice” that can be applied to and encompass a broad range of energy dilemmas (Sovacool et al., 2017, Jenkins et al., 2016, Sovacool and Dworkin, 2014). For simplicity, I refer to these works as “approaches” but, amongst other things, they have been referred to as normative approaches, frameworks for analysis, movements, and a ‘cross-cutting social science research agenda’ (Jenkins et al., 2016, Sovacool et al., 2016, Fuller and McCauley, 2016). It can therefore be confusing deciphering the exact functions and purpose of each approach to energy justice – and establishing this, forms a key part of this thesis.

Confusion over the purpose of these approaches can be compounded as proponents of these approaches often conflate energy justice discourse with their own individual approach (See Jenkins et al., 2016, Jenkins, 2018). A number of special editions and collections for example, begin by outlining energy justice in terms of particular individual approaches, despite contributions to these editions not subscribing to or applying these approaches (See Jenkins et al., 2017, McCauley et al., 2019).

For now, however, we can describe *energy justice discourse* as a collection of disparate and diverse uses of moral and broadly normative concepts to frame and explore a variety of energy dilemmas in discrete instances; and we can describe individual approaches as seeking to construct an over-arching framework which is designed to be applied to a range of energy dilemmas as to provide insights and normative guidance relevant to responding to these dilemmas. This is a slight over-simplification, as many discrete contributions to energy justice discourse can make valuable contributions to broader understandings of energy and ideas of justice, but for now this distinction suffices for separating these approaches from broader energy justice discourse.

### 1.3.2 Approaches to Energy Justice:

Within energy justice discourse two approaches have become particularly prominent, named here as the *principled approach* and *the triumvirate conception of energy justice* (See respectively Sovacool and Dworkin, 2014, McCauley et al., 2013). Here I briefly describe the approaches based on the claims and descriptions given by their respective authors. However, many of these claims are critically assessed and challenged in chapter three and four of this thesis.

“A triumvirate conception”

Originally laid out in McCauley et al. (2013) underpinned by a trivalent account of justice which presents energy justice as consisting of three core components: procedural, recognition-based and distributive justice. These broad interpretations of justice are often used to categorise and, to an extent, describe certain aspects of energy dilemmas. The triumvirate conception of energy justice has the goal of providing ‘all individuals, across all areas, with safe, affordable and sustainable energy’ (McCauley et al., 2013, Jenkins et al., 2016). This approach has also had significant uptake within broader energy justice discourse. Throughout this thesis this approach is referred to as the triumvirate conception of energy justice or the “TCEJ”. Scholarship focusing on this approach makes frequent claims regarding the approaches’ ability to guide “ethically sound” decision making and to identify and respond to energy related injustice (Jenkins and Martiskainen, 2018, Heffron et al., 2015, Heffron and McCauley, 2017). The TCEJ loosely resembles earlier trivalent accounts of environmental justice, which also described justice as consisting of distributive, procedural and recognition-based dimensions (Schlosberg, 2009, Schlosberg, 2004, Schlosberg, 2013). However, the TCEJ differs substantially in its interpretation and



use of these dimensions of justice - this is discussed substantially in chapter four.<sup>2</sup> However, to summarise here, the TCEJ's own interpretation of a trivalent conception of justice overlooks key details that enable a trivalent conception of justice to reflect and help to understand how particular grievances arise and are perpetuated. These issues stem primarily from the TCEJ's tendency to isolate each dimension of a trivalent account of justice (distribution, recognition and procedure). In earlier accounts of trivalent justice, the connections between distributive, recognition-based, and procedural issues are key to understanding how a single grievance can stem from and be perpetuated by each of these three dimensions. The separation of these dimension within the TCEJ literature acts to conceal the relationships between them and therefore limits our understanding of energy dilemmas and the way in which we might respond to them. This thesis uses the term TCEJ to refer to the frameworks set out in a specific group of literature (Jenkins, 2018, Jenkins and Martiskainen, 2018, Jenkins et al., 2017, Jenkins et al., 2016, Jenkins et al., 2014, McCauley et al., 2013, Heffron and McCauley, 2014, Heffron et al., 2015, McCauley et al., 2016, Heffron and McCauley, 2017).

“A principled approach”

A framework initially outlined in Sovacool and Dworkin (2014) offering normative principles to guide and frame the formulation of responses to current energy dilemmas and future energy policy based on a survey of philosophical concepts and accounts of justice.<sup>3</sup> This approach draws on a range of moral theory and concepts initially: virtue, utility, human rights, procedural justice, welfare and happiness, freedom, posterity, and fairness (Sovacool and Dworkin, 2014). Responding to criticism that the approach only contained western concepts a number of “non-western” theories and concepts were added: ubuntu, Taoism and Confucianism, Hinduism and Dharma, Buddhism and indigenous perspectives of the Americas (Sovacool et al., 2017). A key output from this approach is, as LaBelle (2017) refers to it, a “normative checklist” of values that energy decisions should promote: availability, affordability, due process, good governance, sustainability, intergenerational equity, intragenerational equity, and responsibility (Sovacool and Dworkin, 2014). This approach to energy justice envisions ‘a

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<sup>2</sup> Trivalent conceptions of environmental justice feature prominently in chapter four of this thesis, offering an understanding of the dynamics which modulate the attainment or deprivation of capability in a broader foundation of an account of a viable energy justice.

<sup>3</sup> Another work proposed by Sovacool et al., (2013) synthesises two principles from reviewing a range of justice literature: a prohibitive principles which states: ‘Energy systems must be designed and constructed in such a way that they do not unduly interfere with the ability of people to acquire those basic goods to which they are justly entitled.’ And an affirmative principle that follows: ‘If any of the basic goods to which people are justly entitled can only be secured by means of energy services, then in that case there is also a derivative entitlement to the energy services’. This work is apt in describing why energy systems are linked to varying conceptions justice and is sometimes cited in literature on the principled approach initially outlined in Sovacool and Dworkin (2014) but is markedly different in structure and function to principled approach. This work is drawn on in chapter two of this thesis but is treated as a stand alone contribution instead of an individual approach to energy justice.

global energy system that fairly disseminates both the benefits and costs of energy services, and one that contributes to more representative and impartial energy decision-making’ (Sovacool et al., 2016).

A key theme in both these approaches is that appealing to certain moral values and ideas of justice can result in “fairer” or “just” energy systems and energy decision-making (Jenkins et al., 2016, McCauley, 2017, Sovacool et al., 2016). Authors of the TCEJ in particular make a number of claims regarding their approach. Heffron et al. (2015), for example claim ‘energy justice can achieve a just and equitable balance between the three dimensions of the energy trilemma [which Heffron et al. (2015) describe as policy, economics, and environment]’; whilst Jenkins et al. (2018), in reference to energy transitions, suggest the approach must be engaged with to uncover what is “just, equitable and right”. The validity of these claims and others are examined in chapter three and four.

Both approaches adopt, and to a certain extent develop, the aforementioned “whole systems” approach (Sovacool et al., 2019, Jenkins et al., 2014). In doing so, both can be seen to contain “calls” to transcend the production-consumption binary – to view energy dilemmas as embedded and connected to the broader energy systems and societies (Jenkins et al., 2016, Sovacool et al., 2016). Both approaches also view energy systems and their associated dilemmas as amalgamations of social and technical factors (Jenkins et al., 2014, Sovacool and Dworkin, 2015).

These approaches are not the sole focus of this thesis but require substantial examination because they *initially* appear to be exploring a key component of this thesis: articulating the intersection between energy systems, the things we value, and the role of moral theory in exploring and articulating this. In this thesis the TCEJ ultimately draws more focus for two reasons. One is because of its extensive claims to be able to produce certain normative outputs and guidance. The other is that out of the two approaches, the TCEJ has been positioned as improving upon existing “grounded” work on justice, namely accounts of environmental justice (Jenkins, 2018, Heffron et al., 2015). However, both approaches feature significantly throughout this thesis.

For the past decade, the literature on energy justice approaches has remained largely uncritical of itself. Two outputs in particular which critically seek to develop existing approaches to energy justice approaches are the ones of Galvin (2019) and Pellegrini-Masini et al. (2020)<sup>4</sup>. However, authors and proponents of the TCEJ and principled approach have scarcely revisited their approaches with a critical lens and the rare instances where they claim to do so have, in some instances, transformed into advocacy for their approach.

One of few examples can be found in Heffron and McCauley (2017), who despite claiming to provide the first critical account of the emergence of the energy justice concept in research and practice (they

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<sup>4</sup> I emphasise “critically” here because there are numerous other articles which add and remove concepts from energy justice approaches without providing a critique of the approaches. I detail both Galvin (2019) and Pellegrini-Masini et al. (2020) in chapter 5.

claim multiple times to provide a “critical theoretical exploration of energy justice frameworks” and a “critical account of the emergence of the energy justice concept”), soon after state “it is not the aim of this paper to critically assess these frameworks but in terms of assessing their value to different disciplines and exploring their merit”. Instead, they critique “how scholarship has engaged with them [energy justice] and how these concepts have engaged with policy”. After this “critique”, Heffron and McCauley (2017) conclude that their “critical account of the energy justice concept builds evidence for policy-makers to justify its use. It is the first article to account for its beginning in both practice and research.”

Some self-critiques have resulted in more fruitful additions to energy justice approaches. Sovacool et al. (2017) for example, respond to criticism that their “principled approach” is dominated by western perspectives and so move to include a more diverse range of non-western philosophies. However, by and large the underlying structures and methods of these approaches have remained unchanged since their initial inceptions. For instance, the triumvirate approach to energy justice set out in McCauley et al. (2013) is repeated in McCauley et al. (2019). It is only very recently that some authors have noted the tendency and limited impact yielded by literature which repeats an over-arching approach to energy justice without developing it further (Jenkins et al., 2020).

A constant trait of work on these approaches is that although they might occasionally include a new moral concept the actual underlying working of these approaches remains the same. As such, there has been little reflection or update on the role moral theory plays in these approaches.

#### 1.4 Understanding moral theory

To better explore and understand the objectives and purposes of these approaches, and the extent to which these have been achieved, it helps to understand the purpose and uses of moral theory, and how such theories describe and envision justice. In the following sections I outline work by Sen (2009) on different approaches to moral and political philosophy. Following this I outline the concept of capability, which Sen himself advocates for as a component of an “accomplishment-based” component of a realised-focused theory of justice.

This thesis draws on a range of moral and political philosophy; however, these philosophies rarely fall neatly under one of these labels and it is difficult to decipher where moral theory becomes political and where political philosophy becomes moral. For example, in his edited collection of classic moral and political theories, Morgan (2011) describes included theories as being moral theories, political theories or “both”. Therefore, in this thesis I often use the term “moral theory” as a broad catch-all for this collection of over lapping and intersecting scholarship.

A key idea permeating the purposes of moral and political theories is that they offer a means of identifying and articulating problems in such a way as to point towards avenues for amelioration. As

Bufacchi (2011 p.32) summarises O'Neill (1984), "we need moral theory in order to recognise a problem as being a moral problem at all". Sen (2009) makes a useful distinction regarding this, suggesting moral theories achieve this in one of two ways: they can either outline what a perfectly just society looks like and then attempt to illustrate how a given situation falls short of this ideal picture of justice; or they provide a comparative framework to assess which of two options is more desirable.<sup>5</sup> Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) Sen (2009) refers to the former as "transcendental institutionalism" and the latter as "realised-focus comparison", both aforementioned approaches to energy justice draw on varying combinations of these types of theories. It is useful to understand these distinctions as they help to justify the later use of certain moral and political concepts in this thesis.

#### 1.4.1 Transcendental institutionalism

According to Sen (2009), transcendental institutionalism attempts to identify social characteristics of justice that cannot be transcended. Transcendental theories attempt to describe the most just society theoretically possible, being the most just vision of a society this vision cannot be "transcended". By this Sen means transcendentalist are initially concerned with identifying "the nature of the just". These theories therefore focus on envisioning an ideal society. They do so through focusing on the institutions, that is the public rules, systems, offices, and values, which would result in a perfectly just society. Sen adds that these institutions also rely on non-institutional features, such as the social interactions and behaviours of actual people, which arise in the form of "specific behavioural assumptions" which "are made that help the working of the chosen institutions". In other words, assumptions regarding the behaviours of people exist to complement how a certain institution would function. To elaborate this point Sen includes a quote from Rawls' *A Theory of Justice*, who falls into the category of transcendentalism: "the other limitation on our discussion is that for the most part I examine the principles of justice that would regulate a well-ordered society. Everyone is presumed to act justly and to do his part in upholding just institutions" (Rawls, 1971 pp.7-8). Sen suggests that these types of theory have come to dominate contemporary political and moral theory.

#### 1.4.2 Realised-focused comparison

Realised-focused comparison describes a set of theories which involve comparisons of societies that either already existed or which could plausibly exist. Therefore realised-focused comparison is concerned with judging which out of multiple plausible scenarios is more just than the other. Sen describes these theories as being primarily concerned with the removal of manifest injustice in the worlds in which they were developed, as opposed to outlining the conditions and assumptions under

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<sup>5</sup> This is similar to distinctions between ideal and non-ideal theory, whereby ideal theory describes the assumptions which precede justice and where non-ideal theory lacks idealised assumptions about justice. (See Meshelski, (2019) and Valentini, (2012) for further discussion).

which a perfectly just society could exist. Sen argues that realised-focused understanding of justice focuses on actual realisations and accomplishments, rather than on only theorising the right institutions and rules. The realised-focused comparison approach therefore focuses on things which can emerge in societies, such as the lives people can lead. It is this type of theory for which Sen advocates.

Sen (2009 p.15) argues “if a theory of justice is to guide reasoned choice of policies, strategies or institutions, then the identification of fully just social arrangements is neither necessary nor sufficient”. To illustrate this point Sen uses the example of trying to choose between two pieces of art, a Picasso and a Dali. He argues “it is of no help to invoke a diagnosis (even if such a transcendental diagnosis could be made) that the ideal picture in the world is the Mona Lisa” (Sen, 2009). This may initially seem trivial but Sen is making the point that it is not necessary or helpful to know that the Mona Lisa is the most perfect artwork in world, if we are choosing between two other non-perfect options. Sen (2009) then states that this point may appear deceptively simple and asks “would not a theory that identifies a transcendental alternative also, through the same process, tell us what we want to know about comparative justice?” to which he answers “no”.

Sen outlines how a transcendental approach does not account for the dimensions in which objects or options differ, arguing that descriptive closeness is not necessarily approximate to “valuation proximity” - or closeness to a set of values. Sen draws another analogy: “A person who prefers red wine to white may prefer either to a mixture of the two, even though the mixture is, in an obvious descriptive sense, closer to the preferred red wine than pure white wine would be” (Sen, 2009).

The idea here is that two options, both imperfect, may embody and reflect different dimensions and qualities which are not so easily compared by contrasting them with an ideal, perfect, but non-existent option. Sen builds on this logic advocating for an “accomplishment-based” understanding of justice based on the idea that a theory of justice cannot supplant the importance of the lives and experiences people can live and have. This is not to say that institutions and rules are not important but rather that realised aspects of justice extend beyond arrangement-based understandings. Sen suggests we should understand this in terms of people’s “capability”, a concept which has gone on to spawn a field of its own (see Sen et al., 1991, Robeyns, 2005, Smith and Seward, 2009, Robeyns, 2016b, Nussbaum, 2001, Nussbaum, 2011). This thesis draws on the idea of capability in several ways to explore and articulate the links between energy dilemmas and justice. The following section outlines capability in more detail.

### 1.4.3 Capabilities

As alluded to above, the idea of capability is posited as a means of comparing and articulating quality of life, but also as a space in which questions of social justice such as inequality can be meaningfully discussed (Sen, 2001). Others, such as Martha Nussbaum, have drawn on the idea of capability to develop a “partial theory of justice” that prescribes a universal set of capabilities, to which all humans

are entitled to “basic” levels, whilst others have sought to analyse certain institutions and social practices through a capabilities approach (see Robeyns, 2016a).

The approach centres around two concepts, “capabilities” and “functionings”. Functionings describes the things we are able to do and be, for example, being nourished or educated, whilst capability refers to the ability of a person to achieve valued functionings (Robeyns, 2005). The approach therefore focuses on a person’s capability to achieve valued “functionings”. It is the opportunity or freedom to achieve these functionings that is important within the approach.

A core theme within any application of the capability approach is the claim that the attainment of well-being, in the form of capability, is of utmost moral importance (Brighthouse and Robeyns, 2010, Nussbaum, 2003). Central to this claim is the distinction between the means to and ends of well-being attainment. Means to well-being, which are not capabilities themselves, are considered purely instrumental, whereas well-being is seen as an end in itself (Robeyns, 2005). However, a capability which is an end can also be a means to another capability. For example Robeyns (2005), notes that “the capability of being in good health is an end in itself, but also a means to the capability to do work”.

Underpinning the development of capability, was the idea that traditional “goods” and “rights” which contemporary moral and political philosophy sought to distribute did not account for interpersonal differences in the ability of people to convert the same resources into valued outcomes. Sen (1979) argues this in response to a particular set of goods Rawls (2001) prescribes called “primary goods” (these are the goods Rawls (2001) describes as ‘what persons need in their status as free and equal citizens, and as normal and fully cooperating members of society over a complete life’). Sen argued that given the same quantity of resources and the same values, there may be a significant disparity between the valued outcomes two people could achieve depending on certain differences between them: “if people were basically very similar, then an index of primary goods might be quite a good way of judging advantage. But, in fact, people seem to have very different needs varying with health, longevity, climatic conditions, location, work conditions, temperament and even body size...so what is involved is not merely ignoring a few hard cases, but overlooking very widespread and real differences.” Sen (1979 pp.215-216)

Nussbaum’ (2001) universal list includes the capabilities of: life; bodily health; bodily integrity; sense; imagination, and thought; emotions; practical reason; affiliation; other species; play; and control over one’s environment (a more detailed list is included in chapter 2). Unlike Nussbaum, Sen avoids defining a universal list of capabilities and instead argues that a community’s capabilities should be self-defined through a process of public deliberation and reasoning (Sen, 2001). As is outlined in the following section the use of capability in this thesis treads a line between these two approaches, pointing to the practical use of well-reasoned predefined set of capabilities but also emphasising the importance of a concept that can enable people and communities to articulate their own values through various forms

of deliberation and procedures. It is important to note that although this is seen a key point of departure for the two approaches, Nussbaum (2001) suggests her list does not have to be fixed and is open to additions and changes.

Regardless of approach, the conceptual space which the capability approach forms to understand various aspects of the world can be understood as the “capabilities space” (See Day et al., 2016). As outlined in the following section, it is this ability to connect and frame a range of different circumstances that makes capability a viable starting point to understand the moral impacts of energy dilemmas.

As with all theories, the capabilities approach has its limitations. One frequent criticism of the capability approach, which is worth addressing here, is that the approach is too individualistic and pays insufficient attention to groups (See Robeyns, 2005, Smith and Seward, 2009). Robeyns argues that this individualist critique of capabilities is often derived from the conflation of the capability approach’s ethics and ontology. Robeyns (2005) distinguishes between the ontological and ethical aspects of the capabilities approach, arguing that the approach commits to ethical individualism but incorporates an ontology which recognises the that recognises the connections “between people, their social relations, and their social embedment” (Robeyns, 2005 p.108). Schlosberg and Carruthers (2010) takes this a step further, arguing that communities and groups are capable of suffering injustice. They highlight that when environmental movements discuss capabilities, they do so as much at a community level as they do an individual level. In other words, communities are just as capable of possessing functionings as the individuals of which they consist.

## 1.5 Energy, moral theory, and the ultimate end: aims and research questions

Based on the previous sections, we can deduce two common characteristics of moral and political theories. Firstly, these theories provide concepts necessary to articulate why a certain situation or action is problematic - moral concepts they provide enable us to articulate dynamics which we previously could not. Second, in describing why something is morally problematic, moral, and political theories also point towards avenues of amelioration – whether by enabling the comparison of different responses or through imaging a completely just world. Sometimes decoupling these two characteristics can be useful - to use the descriptive aspect without necessarily subscribing to the overall moral sentiments of an approach. For example, in chapter three I note a utilitarian approach can help yield an understanding of the thought and decision-making processes behind certain energy developments, even if we do not find the approach a particularly compelling way to describe the things we value or make decisions.

The overarching aim of this thesis is to assess and then develop the extent to which moral theory informs our understandings of the relationships between energy and the things we value. Understanding this relationship can be instrumental in finding appropriate ways to more effectively address the underpinning dynamics which perpetuate energy dilemmas. To fulfil this overarching aim the two characteristics of moral and political theory mentioned above form the basis of two sets of research

questions. The first set focus on the role of moral theory in existing approaches to energy justice and explores the efficacy of energy justice approaches in using moral theory to understand energy dilemmas and to produce normative guidance. The second set of questions focus more broadly on the role moral theory can play in informing our understanding of energy dilemmas and the things we value and implications this might have on developing more viable understandings of energy justice.

### 1.5.1 Existing approaches: what are they doing?

The first set of research questions revolve around asking whether existing approaches to energy justice can perform the same functions as those outlined in the above paragraphs. Two research questions become useful in exploring this:

1. What purpose is moral theory serving within existing approaches to energy justice?
2. Are approaches to energy justice able to derive genuinely novel guidance from the moral theory they cite?

Expanding on the first question, part of this thesis involves investigating the ability of these approaches to articulate the problematic aspects of energy dilemmas at a sufficient level of abstraction. One which provides a meaningful understanding as to how an energy dilemma can impact the valuable aspects of a person's or community's life, and vice versa, how a person's circumstances can impact their vulnerability to energy dilemmas.

Despite both energy justice approaches drawing on different combinations of transcendental and realised-focused theory, both offer brief transcendental-like visions of energy justice i.e. they provide conceptualisations of an ideal energy system which can act as a transcendental point of comparison. The TCEJ aims to 'to conceptualize a world where all individuals, across all areas, have safe, affordable and sustainable energy that is, essentially, socially just' (Jenkins et al., 2018), whilst the principled approach envisions "a global energy system that fairly disseminates both the benefits and costs of energy services, and one that contributes to more representative and impartial energy decision-making" (Sovacool et al., 2016). Galvin (2019) notes something similar, suggesting that current approaches to energy justice have an underdeveloped moral foundation and tend to default to a Rawlsian-style transcendentalism. Pellegrini-Masini et al. (2020) also note comparable limitations regarding the grounding of energy justice approaches in philosophical thought (both Galvin (2019) and Pellegrini-Masini et al. (2020) provide their own solutions to these limitations which I outline in chapter five).

When the goals of energy justice approaches are discussed in reference to Sen's comparison of transcendentalism and realised-focused comparison, these goal's transcendental leanings – envisioning a just or fair energy system – do not, at least on their own, lend themselves to the comparison or analysis of different energy dilemmas or scenarios. However, a theme in both approaches to energy justice revolves around the procedures through which we respond to energy dilemmas. The TCEJ discusses



this broadly within the context of “procedural justice” and the principled approach refers to this as “due process” (although it also uses the term “procedural justice”) (Jenkins et al., 2016, Sovacool and Dworkin, 2015). These approaches recognise procedural aspects of justice as pertinent in responding to energy dilemmas, however the use of moral concepts to inform on how procedural spaces should function in relation to energy dilemmas is relatively underdeveloped. General calls for information disclosure, “equitable procedures” that engage all stakeholders, impartiality, and fair representation appear to fill this gap (Jenkins et al., 2016, McCauley et al., 2013, Sovacool et al., 2017).

In response to these limitations, the first line of enquiry of this thesis focuses on the purpose and uses of moral theory in existing approaches to energy justice, asking (1) whether approaches to energy justice are using moral theory to articulate and describe aspects of energy dilemmas in a way that was previously not possible. We can then ask (2) if moral theory genuinely aids in producing the normative guidance or avenues for amelioration these approaches claim to offer. These are pertinent questions, especially with regards to the claims made by authors of the TCEJ – that the approach can produce normative guidance and find what is “just and equitable” in reference to various energy dilemmas (see Jenkins et al., 2018, Heffron et al., 2015). If the answer to these questions is negative – that moral theory is not being drawn on- it does not just mean the impact of including moral theory in these approaches is limited. It also suggests certain aspects of these approaches are misleading. Placing normative claims side-by-side with moral theory and ideas of justice, creates the perception that normative claims have been substantiated by moral theories. I am not saying broad, looser, or colloquial language of justice, divorced from theory, should not be used when talking about energy dilemmas. Rather, I am saying that if an author is to cite a set of moral concepts and then proceed to make broad normative claims then they should show how and why these moral concepts relate to their claims.

Importantly, this issue presents a potential gap in broader energy justice discourse as to the role and uses of moral theory in exploring and describing energy dilemmas. The following section presents how this gap can be developed.

### 1.5.2 Capability, moral theory, and energy dilemmas

The second set of research questions revolves around the descriptive use of moral theory and the use of moral theory to produce normative guidance. This culminates as two closely connected research questions:

3. How can moral theory be drawn on to describe and explore energy dilemmas?
4. How can moral theory be drawn on to effectively develop ideas of energy justice?

The “ultimate end” exercise discussed earlier, becomes relevant here, particularly to question three. As part of an attempt to improve on existing understandings of energy justice and to respond to both

question three and four this thesis seeks to explore a viable way of using moral theory to articulate and better understand the impacts of energy dilemmas on those who endure them.

As illustrated earlier in the exercise in finding the “ultimate ends”, whichever concept we arrive at can be used to help frame the impacts of energy access or energy deprivation, but also the wider impacts of energy systems, such as environmental harms. In this respect, key to understanding the links between energy systems and the things we value is the selection of moral concepts that can meaningfully articulate these issues and relationships. The capability approach, I argue, is well positioned to do this. A number of papers, external to energy justice approaches, have sought to use capabilities in this way (Day et al., 2016, Middlemiss et al., 2019, Hillerbrand, 2018). Whilst, other contributions have used capabilities to articulate the impacts of environmental issues (Holland, 2008, Holland, 2014).

I do not try to outline specifically what this “ultimate end” is. However, as indicated in the preceding section, I set the foundations for exploring a plausible space in which people can come to meaningfully connect the impacts of energy dilemmas to the things they value. This entails being able to understand the capabilities, concepts, and procedures necessary for a person or community to be able to engage in these spaces. In this sense the “ultimate ends” refers to the valued things a person or group can meaningfully articulate when given the sufficient conditions. The ultimate ends becomes a broad, but confined, pluralistic space which can facilitate the articulation of certain values and their relationship to energy dilemmas.

A key aspect of the capabilities approach which I find appealing is that we should make these comparisons based on the types of lives people are able to lead and the things they value. As both Sen (2001) and Nussbaum (2001) argue, this is best understood in terms of capabilities. The capacity for capability to account for difference between people yields a sensitivity to the social, economic, geographic and a wide range of other disparities, which underpin people’s varying vulnerability to energy dilemmas. Energy scholarship, particularly within recent years has begun to engage with the range of socio-economic issues which intersect energy systems to form “energy dilemmas” (Liddell and Morris, 2010, Marmot et al., 2011, Walker and Day, 2012, Snell et al., 2015, Gillard et al., 2017, Mattioli et al., 2017). The same technical or logistical issue combined with varying circumstances of a person or community who endure the issue can produce entirely different circumstances.

The second question focuses on developing energy justice discourse, it moves from a descriptive focus to ways in which understandings of energy justice might be better developed. Given the focus on guiding policy and decision making that already pervades energy justice discourse and approaches, I find Sen’s outline of realised-focused comparison approaches to justice a compelling and plausible approach to exploring energy dilemmas. An appealing aspect of this approach is that applications of realised-focused comparison can be analogous to formulating and choosing between different policy options – none of which will result in a perfectly just energy system, but some of which will be more

just than others. We can compare the circumstances in which a current energy dilemma sits to the circumstances different responses may plausibly create.

The case can be made that capabilities provide a suitable space in which to articulate and understand the impacts of energy dilemmas in relation to the things people value. However, even if we can now use this space to articulate what is morally problematic about energy dilemmas, this does not mean we now have solutions to these dilemmas. A key point of emphasis in this respect is that moral theory should be used as extensively, in the formations and details of the procedures and processes which enable us to arrive at these normative conclusions, as it is in the frameworks which demand these processes. Both Sen's and Nussbaum's approaches place significant focus on participating in political processes as a means of attaining capabilities. Sen's approach posits that essential capabilities should be decided on through communities' deliberations, whilst Nussbaum's list contains a number of politically centred capabilities i.e. control over one's environment which is partly defined as "being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association." (Nussbaum, 2001 p.79-80). In either case, the attainment of capabilities can be seen not just as the products of certain events but also as necessary to engage in procedural spaces. In this respect, the extent to which moral theory can inform on procedural spaces is seen as significant way of meaningfully contributing to energy justice discourse.

## 1.6 Methods: Applying and synthesising philosophy

This thesis can be framed broadly in terms of exploring the "ultimate end" to which energy systems aims and developing a space in which to understand and articulate this end. It involves asking whether existing approaches offer a means to explore what this end might be, or how we might better understand and discuss this end. Finding negative answers to these questions, this thesis then moves to investigate these questions independently of existing energy justice approaches.

The methods employed in this thesis fall broadly into what might be described as applied philosophy. Usually in philosophical works the methodology is implicit, and not discussed. However, given the interdisciplinary nature of the work contained in this thesis, it is useful to outline this general methodology.

### *Informal logic*

A key aspect of philosophical arguments revolves around constructing a set of propositions to support an argument. In general, philosophical arguments are underpinned by "informal logic" or "a theory of argument". Hitchcock (2007 p.106-107) defines arguments as "claim-reason complexes" which consist of premises and conclusions and explains "it is appropriate to conceive of an argument as a sequence consisting of a set of reasons followed by a conclusion indicator followed by a conclusion" (a conclusion indicator is a word which suggests an inference e.g. "therefore"). A key aspect of

argumentation then is both providing true premises and conclusions which follow from the premises. We can therefore criticise an argument based on the truth of its premises, and the validity of the inference to the conclusion (Hitchcock, 2007).

This relatively simple logic underpins much of the work in chapters three and four, especially in sections which explore and critique existing approaches to energy justice. These chapters look at the underlying premises and arguments of existing approaches to energy justice and essentially scrutinise whether their premises are true, the arguments work, and accordingly, whether we should accept their conclusions. However, these chapters are not solely restricted to this method. As outlined above, this thesis also entails exploring the role different moral theories and concepts can play in understanding and articulating the ethical impacts of energy dilemmas. The methods entailed in this are best described as an empirical approach to applied philosophy.

### *Applied and empirical philosophy*

Bufacchi (2011 p.43) describes applied philosophy broadly as covering all philosophical research that has bearing on issues of practical concerns stating, “applied philosophy is primarily concerned with making a theoretical contribution to some issue of practical concern.” Bufacchi (2011) suggests applied philosophy can either suggest solutions to practical ethical issues or explicate problems that need to be resolved and advocates for an “empirical approach” to achieve this:

1. *Empirical research* begins with a practical issue and is seen as problem driven. At this stage, any prior philosophical knowledge should be used to define a problem, as opposed to creating an *a priori* philosophical hypothesis. In other words, we should not create a philosophical hypothesis before we have defined the problem we are investigating.
2. *Reflective equilibrium*: based on empirical research a preliminary theory is constructed. The theory is then tested both deductively and inductively, empirical research is re-examined in reference to the new theory, then the theory is refined in response through a cyclic process. This part of the process is referred to as “reflexive equilibrium”, which describes the mutual adjustment between the philosophical theory and our intuitive responses (Glover, 2012, Bufacchi, 2011). Key to this idea is that the philosopher should be willing to go “back and forth”, being both inductive and deductive, until the philosophical hypothesis coincides with the empirical research (Bufacchi, 2011).
3. *The determining role of case studies*: empirical case studies become an essential input in the development of a philosophical theory, such studies therefore are beyond just supportive of a philosophical proposition and instead essential in its formation.

As is now evident, this process of inductive and deductive reasoning has partially already begun. I have described different types of energy dilemmas and have outlined a theory which might best explain and articulate their moral relevance.

However, this process of inductive and deductive reasoning began before I selected these theories. Both Nussbaum and Sen undertook this process during the development of their respective theories. Having both developed and tested their respective approaches on case studies, interviews and in Sen's case his own lived experience (Sen, 2001, Nussbaum, 2001). For example, when referring to her list of capabilities Nussbaum (2001 p.75) states "the list represents the result of years of cross-cultural discussion, and comparisons between earlier and later versions will show that the input of other voices has shaped its content in many ways."

These theories therefore have already been through significantly more cycles of testing and refinement than I could hope to achieve in this thesis. In a way I am drawing on the results of this empirical philosophy, whilst perhaps attempting to perform this cycle in a marginal way on distinct concept's ability to reflect, describe, and connect the aspects of energy systems we find important or problematic. It is important to emphasise that this process is cyclic and therefore depending on field-specific developments, its application does not have to start at empirical research but can begin at *reflective equilibrium* or the *determining role of case studies*.

Although they do not frame their research in this respect, I see Day et al. (2016) as a seminal endeavour into using a moral concept to describe, then explain the connection between energy systems and well-being, at a meaningful level of abstraction which can increase our understanding of an energy dilemma and plausible responses.

The method of testing a moral concept to see how well it describes or coincides with an issue is drawn on significantly in all chapters of this thesis. Chapter two essentially tests the ability of the capability space to articulate the moral dilemmas at the intersections of energy systems, societies, and the environment, using the example of climate change, fossil fuel dependency and climate change mitigation. Chapter three provides a means of comparing theories in this respect as a push to expand the range of moral concepts energy justice approaches utilise. Chapter four also draws on this method, developing the way in which capabilities can reflect underpinning dynamics which perpetuate energy dilemmas.

### *Theoretical synthesis*

Although there are some marginal contributions to the refinement of certain theories attempted in this thesis many of its contributions result from what Sovacool et al. (2018) refer to as "theoretical synthesis". This entails the connection and integration of existing concepts into a new conceptual framework. In chapter two, this synthesis manifests in the integration of several capability-centred concepts which enable the construction of a framework which encapsulates issues of energy production and consumption within the same moral frame i.e. capability. Similarly, chapter four brings together several descriptive dimensions of justice and work on the capability approach to set the foundation for a viable account of energy justice. However, this does not solely involve synthesis. Articulating the

connections between these concepts, to some degree, involves “invention” (Sovacool et al., 2018). The concepts themselves are not novel, but the connections between them are.

## 1.7 Methods, chapters, and structure

This thesis is structured in the following way. Each following chapter employs a combination of the above methods. Figure 1-5 illustrates the over-arching structure and thematic connections between each chapter of this thesis.

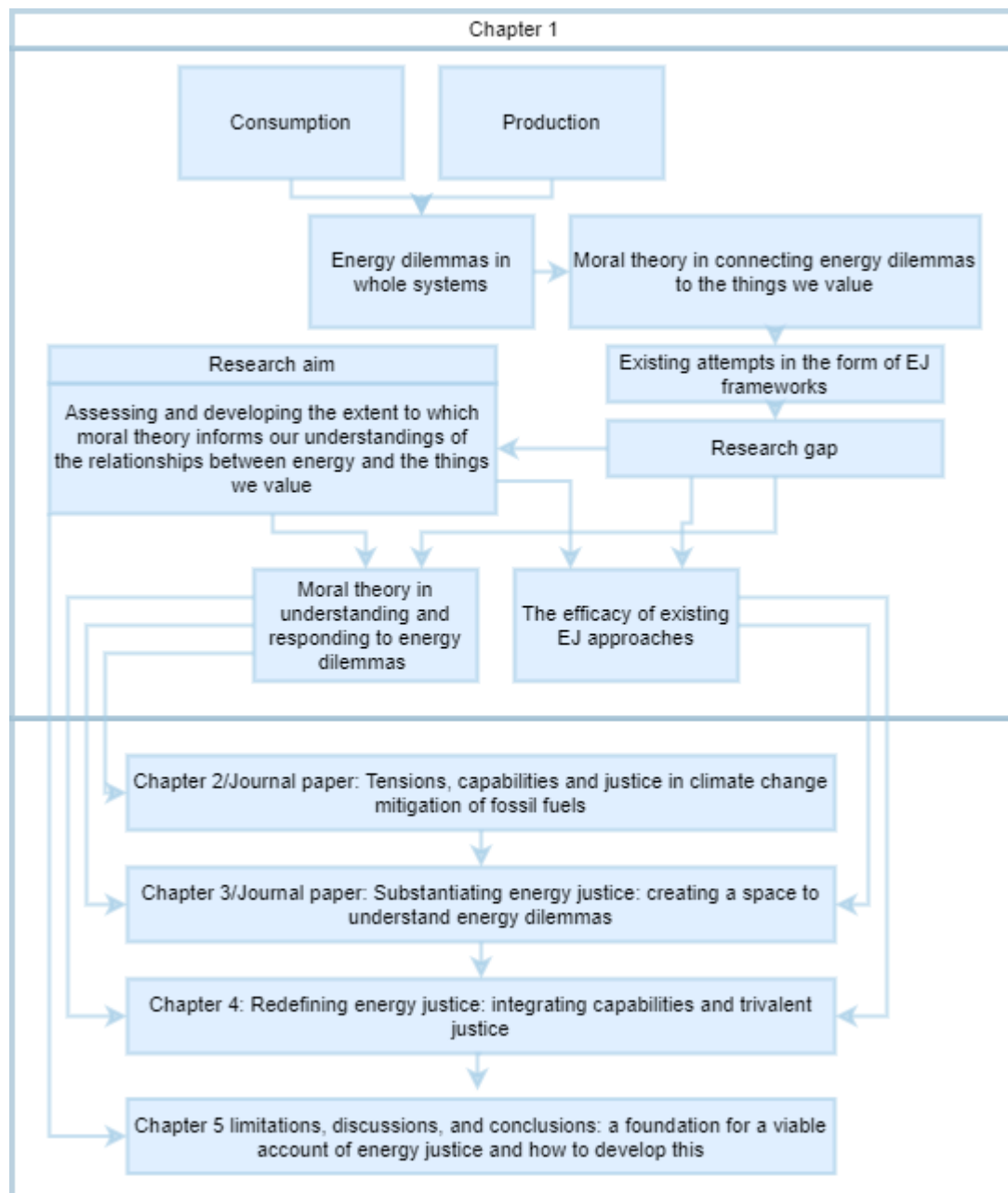


Figure 1-5 Thesis structure and thematic connections. Source: own illustration

### Chapter two

Chapter two entails a theoretical synthesis of several capability-centred concepts to bring the production-consumption binary into the same frame. With regards to the empirical philosophical method, this chapter can be seen as implementing step one of the cycle, using prior philosophical knowledge (in this case pre-existing capability centric-concepts) to define the well-being tensions between climate change impacts, climate change mitigation, and fossil fuels dependency.

### *Chapter three*

Chapter three can be interpreted as applying an informal logic methodology asking whether the premises energy justice approaches put forward align with the overall conclusions. Here it is helpful to think of their premises as their underlying philosophical conceptions and views of energy dilemmas and their conclusions as their over-arching frameworks and outputs. Following this, chapter three outlines a method which resonates with the empirical-philosophical method, illustrating a means of testing different moral concepts' ability to define an energy dilemma before suggesting how this practice could help refine existing approaches to energy justice.

### *Chapter four*

Chapter four focuses solely on the TCEJ and offers the strongest application of informal logic in this thesis. This chapter explores the claims of the TCEJ in detail and scrutinises the frequent claims of this approach's ability to produce more "just" energy systems and to provide viable normative guidance in response to energy dilemmas. Following this, the chapter employs both theoretical synthesis and aspects of empirical philosophy to develop a foundation for a viable account of energy justice. This chapter simultaneously synthesises a range of moral and political concepts whilst illustrating the ability of the capabilities approach to define and illustrate the relationship between dimensions of a trivalent account of justice, recognition, procedure, and distribution.

### *Chapter five*

Chapter five of this thesis offers a discussion of the findings and outputs presented in earlier chapters and points to future avenues of research.

Combined these chapters present the state of energy justice approaches and seek to develop the ways in which we connect moral ideas, the things we value, and energy systems.

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# Chapter 2 Tensions, capabilities, and justice in climate change mitigation of fossil fuels

N. Wood, K. Roelich

## Abstract

In order to mitigate the well-being impacts of climate change effectively, we must reduce our use of fossil fuels. However, many contemporary forms of well-being attainment still depend heavily on the use of fossil fuel derived energy. Therefore, certain necessary forms of climate change mitigation are likely to conflict with current means of well-being attainment in many groups and societies. In particular our concern is that certain forms of mitigation, which target lifestyle choices, consumption behaviour, and technological choices, do and will have disproportionate impacts on certain vulnerable groups in society e.g. households in fuel poverty or individuals with particular disabilities. It is evident that climate change mitigation discourse has only sparsely integrated well-being thought. We argue that a fuller integration of well-being into mitigation thinking could help avoid exacerbating current and future well-being conflicts that will arise between climate change mitigation and fossil fuel derived energy use.

To help achieve this, we reason that climate change mitigation and fossil fuel derived energy use must not be viewed separately but by their relationships to well-being. We articulate the individual processes of fossil fuel derived energy use, climate change mitigation, and well-being attainment in more detail, presenting their relationships to one another in the form of tensions. We present a capabilities conception of well-being that we argue is best suited for operationalising well-being with regards to fully capturing these tensions. We then develop a conceptual framework through a theoretical synthesis of existing literature on well-being, energy, and climate change, which illustrates how these tensions arise. This framework also serves to illustrate how a change in one process will affect the others. We outline how this framework can help illustrate the points at which misguided climate change mitigation can conflict with current means of attaining well-being from fossil derived energy. We then conclude that the use of this framework and further integration of well-being thought could help avoid and ameliorate well-being conflicts when developing future climate change mitigation.

## 2.1 Introduction

Energy plays a role in the attainment of well-being (Nussbaum, 2001, Martínez and Ebenhack, 2008, Karekezi et al., 2012) and its absence can be a contributing factor to well-being deprivation (Liddell and Morris, 2010, Sovacool, 2014, Lucas et al., 2016, Day et al., 2016). It is also the case that many of the energy services and goods on which well-being attainment partly depends are currently powered by, or in part produced using fossil fuel derived energy (FFDE) e.g. current means of transport, heating,

lighting and energy production (Fell, 2017, Mattioli et al., 2017, Day et al., 2016, Simcock and Mullen, 2016). We therefore take FFDE to currently be a key, but extrinsic component of well-being attainment of many people around the world.

It appears that energy use naturally intertwines with the attainment of well-being.<sup>6</sup> However, the results of intensive energy use and production (in particular fossil fuels derived energy) can have converse impacts on well-being attainment globally<sup>7</sup> (Mitchell, 2011, Holland, 2014, Healy et al., 2019). Climate change is a prominent example of this. Primarily the result of greenhouse gases (GHGs) from the excessive use of FFDE, climate change has and will continue to have substantial and widespread, negative global well-being impacts (Adger, 2001, Pachauri et al., 2014). To mitigate these impacts we must significantly reduce GHG emissions (IPCC, 2018). In many cases this means reducing or changing consumption behaviour and lifestyles which we ordinarily rely on to attain well-being (we refer to these as a type demand-side mitigation and these forms of mitigation are our main focus throughout this paper) (Springmann et al., 2017, Lamb and Steinberger, 2017, Creutzig et al., 2018).

It is evident that tensions exist between well-being attainment, FFDE use and climate change mitigation (CCM). As Creutzig et al. (2018) suggest reducing energy use and GHG emissions must be balanced with the goal of enhancing human well-being. A challenge arises, however, when noting the limited incorporation of well-being into CCM discourse. In a review of human well-being and climate change mitigation, Lamb and Steinberger (2017) state ‘climate change mitigation is fundamentally motivated by the preservation of human lives and the conditions which enable them’. Despite this ostensibly true claim, they find the field has so far failed to incorporate well-being thought beyond a superficial level (Lamb and Steinberger, 2017). A pertinent example is the United Kingdom’s Climate Act, which sets out clear targets for emissions reductions but does not refer to well-being once (CC Act, 2008).<sup>8</sup> Indeed, when exploring the acceptance of energy transitions Demski et al. (2019), found values associated with needs and justice, such as fairness and equity are perceived by the public to be side-lined or even absent. Outputs from *Just Transition* and *Energy Democracy* discourses have included the concept of well-being to a limited extent, largely within the design of qualitative studies. McCauley and Heffron (2018) note this shift from quantitative to qualitative focuses on dimensions of injustice within environmental, climate, and energy justice scholarship, with studies focusing on more procedural aspects of research. For example, Damgaard et al. (2017) utilise the capabilities conception of well-being when assessing the energy justice implications of bioenergy developments in Nepal. However, a robust conceptualisation of the relationships between well-being, energy, and CCM is lacking. In particular

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<sup>6</sup> It is important to note that after a point energy intensive pursuits have diminishing and limited abilities to deliver gains in well-being See Brady et al. (2007).

<sup>7</sup> Including impacts of extraction and global supply chains, see Mitchell (2011) and Healy et al., (2019).

<sup>8</sup> PDF word search feature for ‘well-being’, ‘wellbeing’, ‘health’, ‘welfare’, ‘inequality’, & ‘equality’ – although ‘needs’ arises once in regard to taking account of the needs of citizens unduly disadvantaged by waste reduction programmes.

there is limited examination of the extent to which well-being issues which result from the combustion of fossil fuels and CCM can be framed as justice issues using the same theoretical lens.

In essence links between well-being and CCM are being made, but there is a need to integrate this into CCM more effectively. This must be done whilst recognising that well-being is currently strongly linked to FFDE use, in order to recognise and address the implications of CCM strategy on FFDE-dependent means of attaining well-being.

These processes and the relationships between them are complex and need to be communicated more effectively. Therefore, in Section 3.2 we articulate these processes in more detail along with the tensions and relationships between them. In section 2.3 we present a capabilities conception of well-being which lends itself to being operationalised within this context, arguing that a broad, holistic conception of well-being must be used in order to more fully capture these tensions. In section 2.4 and 2.5, using this conception of well-being, we develop a new framework through a theoretical synthesis<sup>9</sup> of existing conceptualisations of the relationships between energy use and well-being, and the links between well-being and environmental issues. Finally, in section 2.6 we discuss the implications and uses of our framework as a tool and guide for assessing and developing CCM strategies.

We argue that it is not just the links between CCM and well-being that require substantiating, but also the conception of well-being which we utilise to illustrate them. As such, we draw from, and expand on substantial existing work on the capabilities approach, utilising it as a means of assessing a person's freedoms, opportunities, and abilities to attain well-being (Sen, 2001, Nussbaum, 2001, Holland, 2008, Holland, 2014, Smith and Seward, 2009, Day et al., 2016, Schlosberg, 2012). We take well-being to be tantamount to attaining sufficient levels of Nussbaum's Central Human Capabilities, enabling a person to live a life of dignity (Nussbaum, 2001). Importantly, the capabilities approach frames the ability to attain well-being as a matter of justice, and conversely that the deprivation of capabilities constitutes an injustice (Nussbaum, 2001). This enables us to frame the potential well-being implications of CCM-fossil fuel energy conflicts as justice issues, which we believe to be an important contribution to grounding energy justice within philosophical discourse. We also highlight that the work within the capabilities approach can incorporate distributive, procedural and recognition components of justice (Holland, 2014, Holland, 2017, Schlosberg, 2012, Sovacool et al., 2016). We suggest the framework becomes most useful when combined with information about vulnerable groups, in particular those with already pressing needs and requirements for which extra access to energy is essential. We illustrate the benefit of continuing this work within the capabilities space. We outline the expansive tool set the capabilities approach yields as both a normative framework, which can guide the development of CCM,

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<sup>9</sup> We use this term based on the definition given in Sovacool et al. (2018) on promoting novelty, whereby the theoretical synthesis entails integrating existing theories on concepts into a new conceptual framework.

and a partial theory of justice which can assess current and potential injustices caused by disruption to current means of well-being attainment.

## 2.2 The tension triangle

Here we provide more clarity on the tensions and relationships between FFDE use, CCM, and well-being attainment. We find a useful way to visualise this, is in the form of a triangle. At each point on the triangle sits a process; FFDE use, well-being attainment, or CCM, with each process sitting in relation to the adjacent processes.<sup>10</sup>

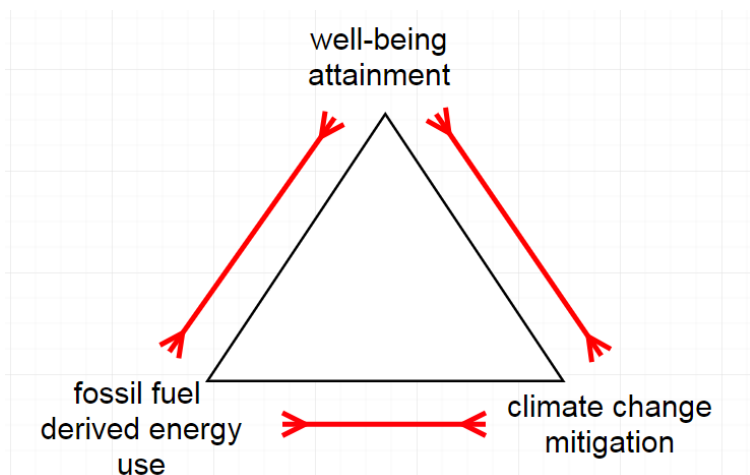


Figure 2-1 'The Tension Triangle' illustrating how FFDE use, well-being attainment, and climate change mitigation sit in tension to one another.

We refer to 'tensions' as the relationships between these processes that pull in different directions e.g. the use of FFDE to attain well-being conflicts with well-being implications of climate change which is caused by FFDE use. These tensions arise primarily from two conflicting processes. First, our dependency on fossil fuels for well-being provisioning energy services leads to excessive GHG emissions and climatic change. Second, the resulting climate change poses large scale well-being issues, which to avoid, or at least reduce, requires substantial mitigation efforts (IPCC, 2015).

In order to understand how these issues relate to one another, we need to assess the issues driving these tensions through a well-being lens. To help better understand the importance of these processes in terms of well-being we briefly outline the links between well-being and FFDE use, well-being and climate change.

### 2.2.1 FFDE use and well-being

There are both positive and negative connections between well-being and FFDE use, it is these connections which create a tension between the two processes. The positive connection between FFDE use and well-being lies in the general relationship between energy use and the attainment of well-being.

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<sup>10</sup> CCM, fossil fuelled derived energy use and well-being attainment could also be described as outcomes.



However, the majority of nations still rely predominantly on the combustion of fossil fuels to derive energy (IEA, 2017). As such, many relationships between well-being and energy that exist are currently facilitated by FFDE.<sup>11</sup> Perhaps most prominently the relationship between energy and well-being can be seen within developmental literature. Development itself is hailed as a major source of well-being enhancement (Sen, 2001, Nussbaum, 2001). Energy is acknowledged to play a prominent role within this, having a positive impact on productivity, health, education, safe water and communication services process (UN, 2005, IEA, 2011, Gaye, 2007). FFDE in particular is paramount to many forms of well-being maintenance, such as household heating, heat for cooking, and many contemporary forms of transport, which enable access to a greater range of well-being enhancing services such e.g. education, healthcare, recreational areas (Walker and Day, 2012, Mattioli et al., 2017). Malakar et al. (2018) argues that shifting towards the use of modern energy carriers such as electricity, liquid petroleum, and natural gas, could eliminate the well-being constraints associated with the use of solid fuels such as wood, dung and crop residue within the developing nations – of course this shift might contribute to other issues regarding growing GHG emissions.

The importance of energy in attaining well-being is echoed within justice literature. Sovacool et al. (2013) argue that people have a derivative entitlement to energy services if any of the basic goods which they are justly entitled to can only be secured through the use of energy services. In essence, if energy services are the only means through which an individual might achieve a particular good or state of well-being that a theory of justice prescribes, then energy becomes an entitlement of that individual.

The negative relationship between FFDE use and well-being we focus on here is climate change.<sup>12</sup> It is well established that the combustion of fossil fuels, and the subsequent greenhouse gas emissions, are the largest contributor to ongoing climate change (IEA, 2012). Climate change continues to have well-being impacts throughout the globe including an increased frequency of severe weather events, disrupted weather cycles, and irreversible damage to provisioning ecosystems (Pachauri et al., 2014). (York, 2012)

Both global inequality and the regions subject to significant climate hazards renders developing nations particularly vulnerable (Shue, 2014). Sea temperature increase will further contribute to global food security concerns, particularly as many vulnerable nations depend on seafood as a primary source of

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<sup>11</sup> It is important to note therefore that other renewable sources of energy could replace fossil fuel use and still provide similar means of well-being attainment. However, at a certain point increasing energy consumption does not appear to contribute to gains in well-being (Steinberger and Roberts, 2010). Therefore, a focus on maintaining and attaining other means of well-being may help partially decouple the energy-well-being relationship, and could provide avenues to maintain well-being whilst mitigating climate change (Brand-Correa & Steinberger, 2017). It is also worth noting that the introduction of renewable energy sources does not necessarily displace the use of fossil fuels (York, 2012).

<sup>12</sup> it is important to note that the extraction, production and combustion are linked to and the cause of a plethora of well-being issues throughout the globe, for example, land rights issues, air pollution, environmental degradation at the point of extraction etc (see Healey, (2019) and Mitchell (2011)).

protein (FAO, 2016), with studies observing habitat destruction and fish stock migration in line with ocean warming (Allison et al., 2009). Rising temperatures will also contribute to sea-level rise, which poses the threat of coastal flooding to regions in which a growing proportion of humanity resides (Nicholls and Cazenave, 2010). An increased frequency of flooding and droughts will be a growing source human suffering especially in the global south (Pachauri et al., 2014). Within the global south, women and children are thought to be particularly vulnerable to abuse during these events (Lane and McNaught, 2009). For example, during times of drought, many young women in Ethiopia and Bangladesh were obliged to labour for cash in local towns, forgoing education opportunities in doing so, and increasing their exposure to potential abuse and exploitation (Swarup et al., 2011). Although by no means exhaustive, this list illustrates some of the potential and ongoing impacts to human well-being that climate change poses.

These relationships illustrate the positive and negative well-being implications of fossil fuels which create an intrinsic tension between FFDE use and well-being attainment.

### 2.2.2 Climate change mitigation and well-being

As with the relationship between FFDE use and well-being attainment, the tensions between CCM and well-being attainment, manifest through two relationships, one positive and one negative.

The positive relationship occurs through CCM's motivation to preserve well-being attainment and to prevent further well-being deprivation that will occur through unchecked climate change. To avoid or minimise the well-being impacts of climate change discussed above we must implement broad forms of mitigation, a necessary means of doing so is to reduce our use of FFDE (IPCC, 2015). CCM is primarily motivated by the maintenance of current systems of well-being attainment e.g. well-being provisioning systems, a stable climate and the issues we outline in section 2.1 (Adger, 2010). Although climate change is already having widespread well-being impacts, prompt and effective mitigation could help avoid or minimise these in the future (IPCC, 2018).

The negative relationship between CCM and well-being arises through certain forms of mitigation, in particular demand-side mitigation, which requires broad changes to consumption habits and lifestyles. In essence, we must restructure many current means of well-being attainment, such as those listed in section 2.1 above. However, attempts to curtail certain consumption choices and dis-incentivise certain activities may impact certain groups more than others e.g. low income households, those with disabilities or susceptibility to illness, and elderly demographics (Snell et al., 2015, Walker and Day, 2012). Numerous studies illustrate the regressive impacts of carbon taxes, energy policy, and carbon trading, which are frequently criticised for disproportionately impacting low income and vulnerable groups (Wier et al., 2005, Ayres, 1997, Bristow et al., 2010, Callan et al., 2009, Feng et al., 2010, Starkey, 2012, Barrett et al., 2018). A pertinent example are UK energy policies which are designed to support a transition towards a low carbon energy system. The UK government added a levy to household

energy bills, 20% of which is used to fund energy efficiency improvements within homes i.e. installing insulation and other energy saving measures. However research by Barrett et al. (2018), found that the UKs poorest households spend 10% of their income on energy, whereas the richest spent only 3%, meaning the levy on energy bills disproportionately impacted low income households. Wier et al. (2001) found that energy needs for rural households were greater than those of urban households. Such disparities suggest forms of mitigation such a carbon taxation and carbon trading may impact rural homes disproportionately (Wier et al., 2005).

These two relationships illustrate that CCM's motivation to preserve well-being may in some cases result in the curtailing of people's well-being elsewhere.

### 2.2.3 FFDE use and climate change mitigation

Sections 2.2.1 and 2.2.3 illustrate that both CCM and FFDE use are linked through their conflicting means of preserving and delivering well-being attainment. Thus, we can see a direct tension between CCM and FFDE use, it is unlikely we can continue one process without disrupting the other. If we continue to combust fossil fuels for energy use, our ability to curb climate change through effective mitigation will be curtailed. Likewise, if we implement effective CCM it is likely that we will not be able to depend on FFDE for current means of well-being attainment. As a result, we can see that CCM and FFDE use sit in direct tension to one another.

We find that in order to fully capture the tensions between CCM and FFDE use, a robust and holistic conception of well-being must be utilised. Dominant forms of assessing well-being have largely been hedonic, focusing on maximising utility through satisfying commensurable and transitive preferences (Brand-Correa and Steinberger, 2017). A lack of stability in peoples preferences make such approaches to well-being poor assessors of social policy and systems that contribute to well-being attainment (O'Neill, 2008). By extension we believe hedonic conceptions of well-being also make poor assessors of the well-being attainment we derive from the environment (the process that CCM is motivated to protect). Brand-Correa and Steinberger (2017) argue that eudaimonic conceptions of well-being, through focusing on how a person can flourish in the broader context of their society, lend themselves to analysing the role of social institutions and political systems in the attainment of well-being. Again, by extension, we believe eudaimonic approaches to well-being can make for clearer and more robust assessments the links between the environment and well-being attainment. Assessing these links is paramount to outlining the well-being implications which are motivating CCM and how these conflicts with forms of well-being attainment from FFDE use.

In the following section we argue that the capabilities approach provides a broad and robust eudaimonic conception of well-being, through which we can conceptualise the issues embodied in tension triangle. Later in the discussion we use this conception to illustrate how certain forms of mitigation can result in well-being conflicts.

## 2.3 Introducing capabilities

We opted to use the capabilities approach for its applicability as a normative framework and as a partial theory of justice, as well as the substantial contributions and expansions which provide the conceptual infrastructure for our own contribution.

Conceptions, such as Martha Nussbaum's, which we expand on later, outline the approach as a 'partial theory of justice' in that it provides a specific list of capabilities of which each person should possess at least a threshold level, any level below this threshold constitutes an injustice (Nussbaum, 2001). As a partial theory of justice, it cannot inform on all matters of social justice. However, as we go on to explain, expansions and contributions to the approach yield enough scope to enable us to produce a framework that captures and reflects many of the justice issues which arise from both climate change and CCM, whilst illustrating these injustices, the approach also enables us to inform where policies might be improved as to avoid further injustices. Just as these principles can constitute what situations amounts to an injustice they can also help in avoiding the creation of new injustices as they can provide a guide to which factors we should consider when making decisions that impact people and societies, in the case of our paper, how we should mitigate climate change. This is what we mean by using the approach as a 'normative framework'. Within development ethics, for example, the approach can be utilised as a normative framework e.g. describing how a policy or society should be. The approaches falls into the eudaimonic category of well-being approaches focusing on the Aristotelian conception of flourishing (Nussbaum, 2001).

Importantly, capabilities offer a holistic understanding of well-being, making two normative claims. First, that freedom to achieve well-being is of utmost moral importance. Second, that freedom to achieve well-being should be understood in terms of people's opportunities to achieve valued functionings i.e. their capabilities (Nussbaum, 2001, Sen, 1992). The capabilities approach revolves around two main concepts: 'capabilities' and 'functionings'. Capabilities are *a 'person's freedom to achieve valued functionings'* and 'functionings' can be categorised as either 'beings or doings' (Anderson, 1999). 'Beings' for example, could mean being educated, being well nourished, and being housed in a warm home. 'Doings' could mean voting in an election or making use of adequate fuel to heat one's home.<sup>13</sup>

Instead of focussing on the distribution of resources, as many accounts of justice do, the capability approach focuses on what people are able to do and achieve, in part based on their capacity to convert primary goods into meaningful outcomes in their life; 'an individual's capability to function' (Brighouse and Robeyns, 2010). Although here our main focus is on the processes outlined in the tension triangle, this perspective become useful in regards to climate change in general, which has disproportionate impacts on particular marginalised groups around world, based on gender, ethnicity,

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<sup>13</sup> 'Being in a warm home' and 'making use of adequate fuel to heat one's home' are both aptly mentioned as examples of functioning in Robeyns (2016).

geography and inequality (Lane and McNaught, 2009, Swarup et al., 2011, Pachauri et al., 2014, Schlosberg, 2012). For the same reasons this makes the approach useful for assessing the impacts of CCM strategy, which as noted impact different groups depending on their social and physical situation. As we expand on later, the approach embodies elements of procedural and recognition justice, (Holland, 2017, Schlosberg, 2012), elements which are also pertinent to energy justice theory (Sovacool et al., 2016)<sup>14</sup>.

The capabilities approach has played a key role in framing international development, particularly in the human development index (Stanton, 2007, Sen, 2003). Further, the approach has been used in framing issues of global gender inequality and disabilities (Nussbaum, 2001, Robeyns, 2003). Similarly, the capabilities approach has proven beneficial within environmental and energy literature (Day et al., 2016, Gardoni and Murphy, 2009, Holland, 2008, Holland, 2014).<sup>15</sup>

Various uses have led to extensions, reinterpretations, and new abstractions. Sen's conception of capabilities and functionings is broadly open to interpretation based on the values and deliberative processes within differing societies (Sen, 2001). Alternately, Nussbaum's conception, proposes a list of incommensurable 'central human functional capabilities' essential for human dignity (Nussbaum, 2001). Nussbaum argues that these capabilities have no relative weight and therefore cannot be ordered by priority. Hence, she argues, that the state should provide each citizen with a minimum level of each capability. Her list contains relatively abstract conceptions of capabilities:

1. **Life.** Being able to live to the end of a human life of normal length, not dying prematurely, or before one's life is so reduced as to be not worth living.
2. **Bodily health.** Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.
3. **Bodily integrity.** Being able to move freely from place to place; having one's bodily boundaries treated as sovereign.
4. **Senses, imagination, and thought.** Being able to use one's mind in ways protected by guarantees of education, freedom of expression with respect to both political and artistic speech and freedom of religious exercise.
5. **Emotions.** Being emotionally developed, able to have attachments to things and people outside ourselves; (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)

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<sup>14</sup> How to operationalise capabilities and other justice theories using an energy justice framework is an issue we are working on in a separate paper. Although the framework we present later in this paper may aid in this task.

<sup>15</sup> Energy and environmental health are both conceived to be essential in minimising gender inequality (Robeyns, 2003).

6. **Practical reason.** Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience.)
7. **Affiliation.** (A) Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to have the capability for both justice and friendship. (B) Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others.
8. **Other species.** Being able to live with concern for and in relation to animals, plants, and the world of nature.
9. **Play.** Being able to laugh, to play, to enjoy recreational activities.
10. **Control over one's environment.** (A) *Political.* Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association. (B) *Material.* Being able to hold property (both land and moveable goods), not just formally but in terms of real opportunity.

(Nussbaum, 2001)

Adapted and shortened for use in this paper, we recommend viewing the full list in Nussbaum (2001) p78-80.

## 2.4 Conceptual building blocks: linking FFDE, CCM, and capabilities

Nussbaum's abstractive list of capabilities provides a useful tool to explore and outline the processes through which we derive capability, functions, and ultimately well-being. We find a number of contributions to the capabilities approach lend themselves to our aim of articulating in more detail the relationships embodied within the tension triangle. The tensions between CCM, FFDE use, and well-being, are complex and have been largely overlooked, with each process often being dealt with separately. Linking them within well-being framework will enable us to more clearly articulate where these processes might conflict and how these conflicts might be avoided in the future. The following sections expand on the tension triangle, outlining how the relationships embodied within it can be articulated in reference to the capabilities conception of well-being.

### 2.4.1 Ecological meta-Capabilities and capability conflicts

Understanding the well-being motivation behind CCM, and the subsequent tension that this results in with FFDE use (the base of the tension triangle), depends on having a clear understanding as to how climate change impacts our ability to derive well-being from a stable environment. Holland (2008) suggests that the majority of capabilities are dependent on certain environmental preconditions or 'meta-capabilities' i.e. we derive many capabilities directly from interaction with the environment. For

example, both *bodily integrity* and *bodily health* depend on certain environmental factors e.g. clean air and water permit us to move freely from place to place without incurring negative health impacts. Holland goes on to argue that to ensure people can attain minimum required levels of capabilities for a life of dignity, ecological protection is required. Holland proposes a meta capability of *sustainable ecological capacity* which she defines as:

“being able to live one’s life in the context of ecological conditions that can provide environmental resources and services that enable the current generation’s range of capabilities; to have these conditions now and in the future” (Holland, 2008 p.324)

Another concept outlined by Holland (2014), abstracted from Nussbaum (2000) are *capability conflicts*. These are conflicts which occur between different means of well-being derivation. For example, a household near a river may derive sanitation, and thus *bodily health*, from using the river as a means of refuse disposal. However, a household downstream may use river as a source of drinking water to derive *bodily health*. But the downstream household is now prevented from doing so because the refuse disposed of by the upstream household has rendered the water unpalatable and unsanitary.

Holland’s notion of capability conflicts and meta-capabilities can help conceptualise the links and motivations between FFDE use, climate change mitigation, and well-being deprivation. The use of the atmosphere as a sink for GHG emissions, may allow a person to attain well-being from processes which require the combustion of fossil fuels, for example, the combustion of fuel to power transport. This use over a large enough scale will contribute to the ongoing warming of the atmosphere. Many other people and societies (and indeed the very same people and societies), may derive many capabilities via the environmental services (or ecological meta-capabilities) that are supported by an atmosphere with stable temperatures. For example, stable weather patterns and temperature cycles which aid agricultural productivity, adequate drinking water and stable environments which enable the attainment of capabilities *bodily health* and *play*. We can see here that the extensive use of the atmosphere for the former purpose conflicts with the latter use.

Schlosberg (2012) suggests that a capabilities approach to justice can aid in assessing a broad range of issues posed by climate change, arguing it is an approach which may help capture distributions of vulnerability, the impacts of mal-recognition, and the impairments to functioning climate change poses (Schlosberg, 2012). Drawing on Fraser (1997), Schlosberg details how mal-, mis-, and non-recognition (for simplicity we refer to these issues collectively as misrecognition from here in) leads to the neglect of peoples and cultures which are impacted by climate change in ways which threaten the preconditions for those cultures to exist and the attainment of capabilities within them (Schlosberg, 2012). Schlosberg argues that capabilities approach, through its deliberative nature may help ameliorate the recognition issues of local, individual, and community needs and vulnerabilities (Schlosberg, 2012).

Schlosberg also suggests that misrecognition inhibits the fair participation of individuals and communities in deliberative and democratic procedures. And further, that these preconditions of participation and recognition depend broadly on the environment. Drawing on Holland's (2008) conception of ecological meta-capabilities and Nancy Frasers (1997) concerns over recognition justice, Schlosberg holds that recognition is key to designing substantive policy responses to threats (climate change in particular) to human functionings and the incommensurable role of the environment in achieving them.

#### 2.4.2 Capability from energy services

Understanding the well-being tension between CCM and FFDE use also requires an understanding of the process through which well-being is derived from services which depend on FFDE. Understanding this process, enables one to assess the points at which CCM might conflict with current means of well-being attainment from FFDE use. One incorporation of the capabilities approach is Day et al.'s (2016) conceptualisation of the relationship between energy, energy services, and well-being outcomes. Day et al. (2016) utilise capabilities to conceptualise the means through which we derive well-being from household energy services. They then outline the processes through which capability deprivation may occur or be prevented by insufficient or adequate energy access.

With reference to Sovacool et al. (2014), Day et al. (2016) argue that energy demand is not derived from an intrinsic want or need for energy, but instead arises from the services and activities that energy enables us to use and do. As such, they utilise the concept of secondary capabilities to conceptualise the links between the use of energy services and basic capabilities. Day et al.'s framework allows one to illustrate heterogeneity of services and subsequent capabilities derived from energy. This is in part achieved through the incorporation of Smith & Seward's (2009) conception of 'basic' and 'secondary' capabilities. Secondary capabilities here embody a positivist approach, in that they can be observed and measured, e.g. driving a car, using a washing machine, and utensils used in preparing food. Basic capabilities embody constructivist ideals, for example, Nussbaum's capability of *Affiliation*. There will be multiple ways in which we might define or view affiliation, such as being able to empathise, identify with, or physically meet individuals. A secondary capability such as driving or being in transit might facilitate these actions. Day et al. (2016) aptly describe secondary capabilities as 'precursors to basic ones'. The adoption of secondary capabilities into a framework is essential for identifying the mechanisms through which basic capabilities are achieved (Day et al., 2016, Smith and Seward, 2009).



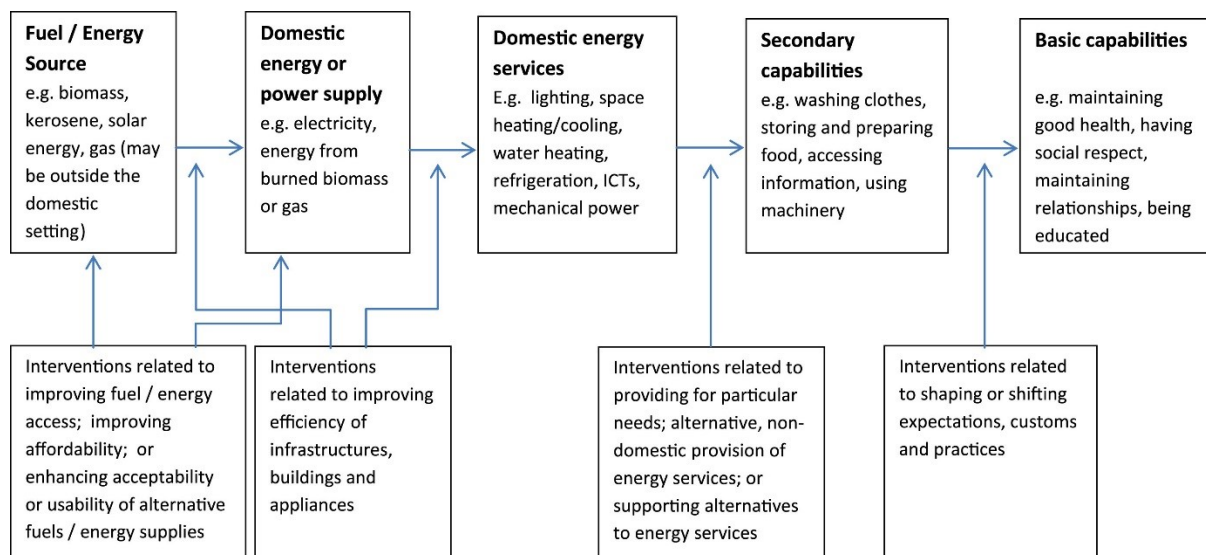


Figure 2-2 Day et al., 2016 conceptualising the relationship between energy, services and outcomes with interventions in areas which aid in avoiding fuel poverty.

Day et al.'s framework (figure 2-2) shows the use of fuel and other energy sources, feeding into domestic energy or other power supplies, the energy's subsequent use in domestic services, its utilisation in the form of secondary capabilities, and finally energy manifested in the form of basic capabilities. Each stage represents a transformation of energy.

This framework allows Day et al. (2016) to formulate a definition of energy poverty within the space of capabilities, based on disruptions to this chain of derivation acting ultimately as forms of capability deprivation:

*'an inability to realise essential capabilities as a direct or indirect result of insufficient access to affordable, reliable and safe energy services, and taking into account available reasonable alternative means of realising these capabilities.'* (Day et al., 2016)

This definition is important in justifying our framework because of its ability to capture the well-being implications and injustices CCM might yield if it curbs an already vulnerable citizen's access to energy derived from fossil fuels. This approach enables Day et al. (2016) to identify where certain causes of energy poverty arise as a result of inadequate access to energy and energy services, and consequently where interventions should occur to minimise them (Day et al., 2016). The framework presented by Day et al. (2016) can already be used to illustrate the process of capability derivation through domestic energy services powered by fossil fuelled derived energy, particularly if we omit other energy sources listed within it. Through expansions it may capture various other means of capability derivation that FFDE contribute too.

### 2.4.3 Capability from transport

Day et al.'s framework considers only the relationship between direct domestic energy consumption and capabilities derivation. However, transport is another widely used means through which FFDE is utilized to provide a service, for example, accessing healthcare and education, or recreational sites via a car, and therefore is likely to conflict with certain forms of CCM (Woodcock et al., 2009). As with other forms of fuel poverty, inadequate access to transport can have significant consequences for a person's well-being, barring them from accessing important services and sources of well-being attainment (Mattioli, 2016). Transport can therefore be seen as means of attaining functioning and capability and it has been suggested that the capabilities approach could yield many lessons for transport planning (Hananel and Berechman, 2016, Beyazit, 2011). Simultaneously, transport is responsible for a substantial portion of many nations emissions (IEA, 2012). Vehicles and fuel have been the subject of proposed and existing emissions reductions policy. A policy which seeks to reduce emissions from transport may inadvertently reduce vulnerable group's access to capability supporting services (Mattioli, 2017).

Day et al.'s framework does not capture the relationship between fossil fuelled private transport and basic capabilities. Transport is currently a source of capability attainment, but because of its current dependence on FFDE, it is linked to GHG emissions and subsequently climate change. If climate change mitigation, motivated by well-being concerns is introduced to target emissions from transport, motivated by climate-well-being concerns, it also poses the risk of inhibiting well-being derivation from these sources. Incorporating ecological meta-capabilities and capability conflicts within this framework would inherently account for the negative links between FFDE and well-being, and help frame the tensions between the well-being implications of climate change and CCM. Being able to capture this relationship is instrumental in outlining the impacts that CCM can inadvertently have on vulnerable groups.

### 2.5 Expanding the tension triangle: creating a well-being lens

Here we combine Day et al.'s framework with Holland's capability conflicts and ecological meta-capabilities and extend it to include private transport. Day et al.'s framework is an important first step in conceptualising the process of capability derivation from energy use and they suggest their framework may be expanded beyond its initial scope. We aim to focus solely on energy derived from fossil fuels because of their significant links to climate change. We incorporate transport into the framework to more broadly capture uses of FFDE. We are aware that many of the processes we outline can occur through the use of other energy sources. However, our focus is specifically on fossil fuels as to provide a conceptual snapshot that illustrates the relationships between the processes that make up the tensions triangle. This expansion will later aid in outlining the process through which certain policies might disrupt the flow of capabilities currently derived from fossil fuels.

### 2.5.1 Incorporating transport

To encompass emissions from private transport, ‘domestic energy or power supply’ featured in Day et al. (2016) needs to be expanded. Thus, in the model presented below this stage is termed ‘private energy and supply’ (PES). This allows for the incorporation of refined fossil fuels into this stage of the framework. Refined fossil fuels are often used in private transport and consequently, the next stage in the framework ‘domestic energy services’ is replaced with ‘private energy services’ to reflect the private use of FFDE outside a domestic environment. From there, the secondary and basic capabilities derived from energy use can remain unchanged.

The extended framework can now illustrate how we might derive capability through petroleum fuelled private transport. For example, fossil fuels may be initially combusted to provide energy for the refinement and transport of petroleum. This petroleum is then combusted within a private vehicle generating mechanical power, which provides a secondary capability of transit. The ability to transit then yields the opportunity to derive a number of basic capabilities. For example, the capability of affiliation – one might be enabled to physically affiliate with others through the use of private transport. Another example might be enabling access to distant health care facilities and in turn the capability of bodily health might be derived.

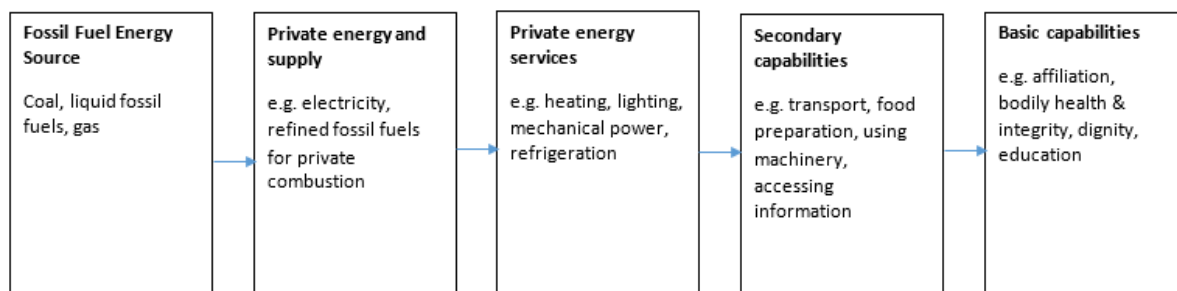


Figure 2-3 Capability derivation chain from fossil fuels through private energy use.

### 2.5.2 Meta-capacities and capability conflicts

The initial framework (above) illustrates how we arrive at basic capabilities through the combustion of fossil fuels, and thus illustrates the relationship between FFDE use and well-being outlined earlier in the tension triangle. To link this relationship to the well-being impacts of climate change i.e. the well-being motivation of CCM, we draw on Holland’s (2014) conception of ecological meta-capabilities and capability conflicts. Holland’s framing of these two concepts enables us to conceptualise the well-being impacts of climate change within the capabilities space. Additionally, as described, climate change’s primary driver is the combustion of fossil fuels. Thus, to extend the model we link sources of emissions to conceptual carbon space consumption. Opschoor (2010) define ‘carbon space’ as:

*‘...long term maxima for temperature rise or concentrations of greenhouse gases [which] defines spaces within which further emissions of these gases are to remain.’*

(Opschoor, 2010)

Or more simply, carbon space is the capacity of the atmosphere to hold a particular concentration of GHGs<sup>16</sup> whilst maintaining a particular temperature.

To achieve this extension, we conceptualise an ongoing tension between carbon space consumption and what we term ‘homeostatic ecological meta-capabilities’. These are sets of capabilities that could potentially be derived from a less strained environment in which a more sustainable society is embedded. This is essentially the aim of CCM. For example, a climate that is less subject to change because society has avoided further emissions, may yield more stable and predictable weather patterns and less severe weather events, this might in turn aid crop yields which depend on more predictable weather cycles. This could lead to improved food security and avoid famines and hunger, helping to maintain people’s capability of bodily health and integrity. However, in our less sustainable reality, climate change continues to disrupt the environment and weather patterns, our ability to derive a wider array of capabilities from the environment declines e.g. bodily health and integrity, identity and culture, affiliation etc. This conflict then feeds back negatively to secondary and basic capabilities (represented by the red connections in figure 2-4), illustrating the capability depriving impacts of climate change. Therefore, as we overconsume one particular environmental service – carbon space – we reduce our ability to derive other ecological meta-capabilities. Holland (2008) suggests that when such a state of ecological conditions exist which enable minimum levels of capability thresholds to be met that an ‘environmental justice threshold’ has been met or surpassed.

As we noted earlier our focus here is on the well-being conflicts that occur between FFDE use and CCM. However significant well-being impacts occur at other points within our framework, in particular during extraction and refinement. Healy et al. (2019) illustrate these ‘hidden injustices’ that occur throughout trans-boundary supply chains by introducing the concept of ‘embodied energy injustices’ linking energy extraction to violence, forcible displacements, pollution, and human rights violations. Ecological meta-capability conflicts might occur elsewhere in the supply chain simultaneously to climate impacts. For example, air quality degradation from fossil fuelled transport is a clear ecological meta-capability conflict, where by one means of deriving capability erodes another (Holland, 2008).

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<sup>16</sup> When GHGs are discussed as carbon dioxide equivalents.

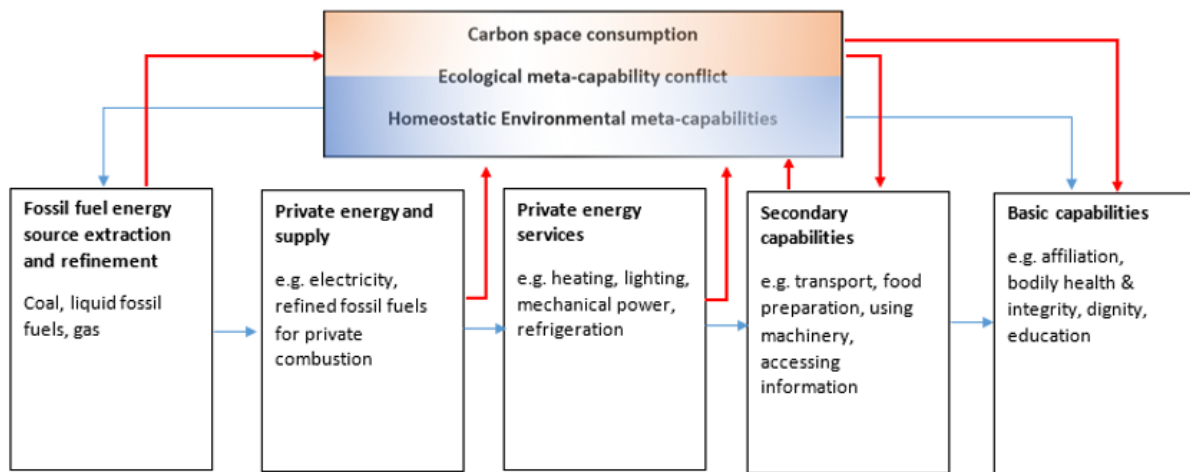


Figure 2-4 Combined framework of capability derivation from fossil fuels and capability conflicts between carbon space consumption and ecological meta-capabilities. Blue arrows indicate the flow of energy, services and well-being from energy use and the environment to capability attainment. Red arrows represent the conflicts that result from emitting activities at the stages of fossil fuel extraction and refinement, private energy services, secondary capabilities such as combusting fuel in a car to achieve transit, and the subsequent deprivation of secondary and basic capabilities that result from the collective environmental impacts that reduce our ability to derive capability from the environment.

## 2.6 Discussion

Marino and Ribot (2012) state ‘as climate-related crises produce winners and losers, so may discourses and plans made to avert such crises’. Our framework, taken with considerations of recognition issues (such as those presented by Schlosberg (2012) and Fraser (1997)), illustrates the interplay between fossil fuel derived well-being and well-being depriving climate change, and subsequently conflicts that can arise through mitigation attempts.

Through including a broad range of activities that depend on fossil fuels, we illustrate the heterogeneity of emitting activities from which fossil fuelled societies derive well-being. This enables us to better illustrate the points at which CCM might disrupt a person’s current means of well-being attainment from FFDE use. Through illustrating this process in the capabilities space, we are able to outline how capability deprivation resulting from misinformed CCM can compound injustices that were overlooked during its formulation. When referring to Schlosberg’s (2012) inclusion of Fraser’s (1997) recognition concerns in a broad capabilities approach, it becomes apparent as to how these injustices result. Having a full set of capabilities is paramount to being able to participate within the democratic processes and achieve ‘democratic equality’, which in itself integrates equal recognition. In recognising this, we can see how the impairment of someone’s capability derivation from FFDE might prevent them from participating in deliberative procedures in which they might attain some sort of recognition and the eventual amelioration of their well-being deprivation (Anderson, 1999).<sup>17</sup>

<sup>17</sup> Capabilities of participation and control over one’s political environment can be likened to theories of social power.

The interplay between capabilities, the attainment of recognition (or lack thereof), and CCM becomes further ostensible when we consider how misguided CCM can compound these injustices. Because of their existing capability deprivation and misrecognition, vulnerable groups may find it difficult to participate in policy formulation and other democratic process, even through simple processes of transiting to areas in which these processes occur. This can lead to the formulation of policies which fail to take account of these groups' concerns, and therefore may be more likely to disproportionately impact these groups than other groups who have a greater capability to be politically active.

As such a process unfolds in which vulnerable groups become further marginalised as they are continually distanced from societal participation. This aligns in particular with Schlosberg's (2012) view that vulnerable group's statuses are at least, in part, 'socially, politically, and economically constructed' and that it is therefore necessary for them to attain some form of control over their political environment in order to ameliorate their position. For example, within the UK 11% of households are in fuel poverty, in this position members of a household may be struggling to heat their homes and subsequently may develop health issues, thus reducing their capability of bodily health (DBEIS, 2017). These health issues may inhibit a person's capability to engage in society and to exercise political control within their environment, for example, the ability to attend public consultations and even visiting polling stations (Gillard et al., 2017). Therefore, through facing existing capability deprivation, members of these household may find it difficult to engage in a discourse which could either alleviate or exacerbate their position – Wolff and De-Shalit (2007) term this 'corrosive disadvantage'. In the case of climate mitigation, a policy which increases the cost of household energy, would risk further exacerbating capability deprivation.

Illustrating that CCM discourse can be analysed through a well-being lens is pertinent in providing a framing of climate change mitigation in reference to its well-being impacts, both positive and negative. If our motivation to mitigate climate change is found in climate change's detrimental impact on human well-being, then our concern should be extended to those vulnerable groups whose well-being is risked as a result of misguided climate mitigation.

We noted earlier that "at a certain point increasing energy consumption does not appear to contribute to gains in well-being (Steinberger and Roberts, 2010). Therefore a focus on other maintaining and attaining other means of well-being may help partially decouple the energy-well-being relationship, and could provide avenues to maintain well-being whilst mitigating climate change (Brand-Correa and Steinberger, 2017)." Our framework outlines the current means and capabilities we depend on to attain well-being. However, these capabilities need not be tied to fossil fuels permanently. Many of these capabilities could instead be ensured by more inclusive solutions, for example, improvements in accessible public infrastructure, such as replacing roads with trams and bus lanes, utilising industrial heat through combined heat and power plants, mandating energy efficiency measures in new homes

and subsidising retrofits in inclusive and equitable ways. An awareness of the potential well-being conflicts CCM could cause is paramount in guiding the formation of well-being enhancing responses to climate change. Viewing these CCM and FFDE use in relation to well-being as done through the tensions triangle will help avoid the separation of these issues.

## 2.7 Conclusion

We have argued that in order to minimise well-being impacts of climate change mitigation we must view both climate change mitigation and FFDE use through a well-being lens. To effectively do so requires a robust and holistic conception of well-being capable of capturing the complex relationships between these conflicting processes. We have argued that the capabilities conception of well-being provides this and that viewing these relationships in terms of capabilities allows us to assess and shape current and future mitigation strategies that consider vulnerable groups to minimise and ameliorate potential well-being conflicts.

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# Chapter 3 Substantiating Energy Justice: creating a space to understand energy dilemmas

N. Wood, K. Roelich

## **Abstract:**

This paper explores the relationships between the moral philosophical foundations and strategic goals of two conceptions of energy justice; the 'triumvirate conception' and the 'principled approach'. We explore the extent to which the goals of these approaches align with their core aims and strategies. Having initially been developed to capture and reflect the values of activist-led environmental justice movements, we find that the triumvirate approach's adoption of a trivalent conception of justice currently lies in tension with its overarching top-down approach. We note that the principled approach does not face the same tensions as the triumvirate conception of energy justice but would benefit from illustrating the consequences of framing the same energy dilemma with conflicting moral theories. Aiming to ameliorate these limitations and further develop conceptions of energy justice, we outline a case study of hydro power in Hirakud, India and propose a framework which illustrates how using differing theories of justice to conceptualise the same energy dilemmas can result in substantially different normative framings and guidance. We illustrate how this framework, combined with a pluralistic appeal to moral theory can enable both approaches to draw on a wider range of moral theory to assess energy dilemmas. This in turn provides a broader socio-political backdrop in which to view energy dilemmas. We outline how this backdrop contributes to the creation of a space in which the grievances of those who suffer in relation to energy systems and be heard and better understood.

## 3.1 Introduction

The term 'energy justice' can be a source of confusion as it describes both a research agenda and a set of conceptual approaches. As a research agenda, energy justice has focused on a range of issues that arise in relation to energy systems from issues of access such as fuel and energy poverty, to issues regarding the extraction, production, and distribution of energy, and how such issues relate to ideas of "justice" and "fairness". The idea of justice in particular has been drawn on in ways ranging from broad and ambiguous interpretation, synonymous with intuitive ideals of fairness, to the application of accounts of justice drawn straight from moral and political theory. Bickerstaff et al. (2013) for example, contains a collection of works which engage with justice scholarship at various levels of abstraction to discuss and frame different sets of energy dilemmas such a fuel poverty, energy vulnerability, nuclear energy, and sustainable energy transitions. Elsewhere, the scholarship has drawn on a diversity of moral

theory to develop discrete conceptions of energy justice which can be used to frame and respond to a range of energy dilemmas throughout whole energy systems (McCauley et al., 2013, Sovacool and Dworkin, 2014).

In this paper we focus on two prominent conceptions of energy justice: the conception set out in McCauley et al. (2013), which we refer to as the triumvirate conception of energy justice (TCEJ); and the conception set out initially in Sovacool and Dworkin (2014) *Global Energy Justice*, which we refer to as the principled approach.

Both approaches share some similarities in that their goals broadly revolve around integrating ideas of justice or fairness into energy policy and decision making processes (Sovacool and Dworkin, 2014, Jenkins et al., 2017a). However, their use of moral theory to underpin their given conceptions of what the “justice” in energy justice consists of diverges in a number of ways, as do their respective strategies of attaining their individual goals.

We therefore focus on three aspects of these approaches; their use of moral theory to underpin their respective conceptions of energy justice, their overall goals, and the strategies which underpin them. By “strategies” we mean the conceptual outputs that enable the attainment of their respective goals. These might take the form of heuristic frameworks through which to view and inform on energy dilemmas for example. We posit that tensions between these three facets, to varying extents are inhibiting the ability of each approach to create a space in which to hear and understand the voices and grievances of those who are subject to the ills of energy systems. By extension, we argue that the absence of this space, to varying extents, inhibits the ability of these approaches to normatively inform energy policy and decision-makers.

When drawing on moral theory to create a new approach, it should follow that the motivating moral theory of an approach should also be embodied in its goals and strategies. Put simply, we can ask if the underlying values motivating an approach to energy justice are reflected in its overall goals and accompanying strategies. This is a pertinent question since the elaboration and interpretation of any given moral theory or concept will substantially influence how it is structured and operationalised. This in turn dictates whether an approach is successful in creating a useful space in which the grievances of those who are subject to the ills of energy systems can be heard and better understood. Such a space is required if energy dilemmas are to be understood in relation to broader social and political circumstances which might underpin them.

From here, we use the term ‘moral theory’ broadly to refer to the philosophical ideas on which these conceptions of energy justice are based. For example, the triumvirate approach to energy justice describes justice as consisting of distributive, procedural and recognition-based ideals – broad concepts

which find their basis in both moral and political theory (Jenkins, 2018). Although such concepts also find their roots in political philosophy, for now, we refer to these collectively as “moral theory”. We use this term to describe sets of rules and concepts which allow us to evaluate existing situations through various justice lenses, provide guidance as to what we *ought* to do in response and which describe structures and goods (and their accompanying distributions) we should use to articulate the normative aspects these issues (see section 3.3). We expand on these concepts further in the paper, illustrating how different moral theories can be used to create a space in which to explore and understand energy dilemmas and their relationship to people’s lives.

Our contribution is not necessarily to advocate for a single approach to conceptualising or articulating energy related injustice, but rather to provide a framework which enables energy justice scholars to explore, utilize, and critique a wide range of moral theory in reference to energy dilemmas. In particular, our framework provides a means of critiquing the given usefulness and ability of various moral theories to frame energy dilemmas in reference to broader socio-political situations which underpin them. Later we explain how this ability to frame an energy dilemma within a broader socio-political circumstance is necessary in coming to understand how energy dilemmas come to impact the people and societies they do.

We identify two key areas where approaches to energy justice could be strengthened:

- A stronger outline and discussion of the moral foundations on which the various approaches rest, including how such accounts relate to or conflict with the non-philosophical, strategic aspects of each approach.
- A broader integration of a range of moral concepts and approaches, which in turn can act as a source of normative guidance and a means of embedding complex energy dilemmas within broader socio-political situations.

The paper is structured as follows. The triumvirate and principled approaches’ moral and strategic underpinnings are critiqued and compared (section 3.2). Potential short-comings, tensions and areas which could be further developed are used to motivate a discussion regarding the effective pluralistic use of moral theory in analysing and conceptualising energy dilemmas (section 3.3). This discussion is then applied to a case study on the construction of the Hirakud hydro power dam, which illustrates the benefits and limitations of using different moral theories in analysing and framing energy dilemmas and producing normative guidance. In particular, we emphasise that different moral theories may yield significantly different normative outlooks and guidance (Section 3.4). Based on this case study we outline a framework regarding the use of moral theory in framing energy dilemmas within a broader socio-political context whilst creating a conceptual space in which to analyse and understand energy

dilemmas and the grievances of those who endure them. We then outline how this framework, combined with the adoption of a broad pluralism can to varying extents, help ameliorate the tensions within both the triumvirate and principled approaches to energy justice (section 3.5 & 3.6).

## 3.2 The world through an energy justice lens

In this section, we outline the relationships between the underlying moral theory, strategies, and goals of the triumvirate and principled approaches to energy justice.

### 3.2.1 The triumvirate conception: foundation and theory

The triumvirate conception of energy justice (TCEJ) has had significant uptake in broader energy justice discourse, being utilised in a growing number of empirical and conceptual works (Healy et al., 2019, Demski et al., 2019, Sareen and Haarstad, 2018, Jenkins, 2018, Jenkins et al., 2018, Gillard et al., 2017, Damgaard et al., 2017, Fuller and McCauley, 2016)<sup>18</sup>, as well as being the subject of numerous reviews (Jenkins et al., 2014, Jenkins et al., 2016, Heffron and McCauley, 2017). As this paper is concerned with the TCEJ's moral foundations and strategic goals, we focus primarily on conceptual contributions to the approach as opposed to its applications (McCauley et al., 2013, Heffron et al., 2015, Heffron and McCauley, 2014, Jenkins et al., 2016, Jenkins et al., 2014).

#### 3.2.1.1 Moral Theory

Although the seminal TCEJ paper by McCauley et al. (2013) refers briefly to work on both environmental and climate justice, the approach most closely resembles Schlosberg's trivalent conception of environmental justice with McCauley et al. (2013) stating that energy justice is 'founded in literature on environmental justice' simultaneously citing Schlosberg (Schlosberg, 2013, Schlosberg, 2009). The approach consists of a "triumvirate of tenets"; distribution, recognition and procedure, which are also found Schlosberg's (2004) earlier conceptions of environmental justice (Jenkins et al., 2016, McCauley et al., 2013).<sup>19</sup>

Based on Jenkins et al. (2016) and McCauley et al. (2013):

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<sup>18</sup> This is not an exhaustive list, the number of works which now utilise the triumvirate energy justice framework is far larger.

<sup>19</sup> We were aware of an exploration of restorative justice by Heffron and McCauley, (2017). However, in a following paper in McCauley and Heffron (2018) create a 'new triumvirate of tenets (distributional, procedural and restorative)' although recognition is still briefly discussed in the paper it is omitted from the triumvirate without explanation. As such we focus on the initial conception of TCEJ which has had wider uptake within energy justice discourse.

- The distributional aspects of energy justice attempts to capture “where injustices emerge”, be this spatially or temporally - in other words how the benefits and burdens that energy systems produce are distributed through space and over time.
- Recognition focuses on how parties, communities and individuals are represented and recognised in reference to energy related events and situations. For example, how indigenous people might be overlooked during the decision making process of coal mining<sup>20</sup> or how low-income, fuel poor households might be under-represented in the development of energy policy<sup>21</sup>. The concept of recognition is largely based on work by Nancy Fraser (Fraser, 1996).
- Procedural justice focuses on the processes and means of ameliorating injustices which have been identified i.e. which procedures and structures could be implemented that incorporate previously misrecognised parties (McCauley et al., 2013, Jenkins et al., 2016).

It is worth noting that despite mentioning “just outcomes”, “just distributions” and “injustices” a number of times the authors of this approach do not specify what they take justice to mean or consist of – whether this is through theoretical accounts or testimony and claim making (McCauley et al., 2013, Jenkins et al., 2016, Jenkins, 2018).

The approach also embodies aspects of cosmopolitan justice, viewing all humans as ‘world citizens’ whom are of equal moral worth and standing (Heffron et al., 2015). This global view of justice is discussed in relation to transboundary energy dilemmas such as nuclear energy and its governing intuitions (Heffron et al., 2015).

This cosmopolitan outlook is reflected in the TCEJ’s goals. McCauley et al. (2013) state the TCEJ “aims to provide all individuals, across all areas, with safe, affordable and sustainable energy.” And this goal is restated in Heffron and McCauley (2014), Jenkins et al. (2014), Jenkins et al. (2017a), Jenkins et al. (2017b) and Jenkins (2018).

In a much cited conceptual review, Jenkins et al. (2016) outline how the triumvirate conception offers an opportunity to explore where injustices occur and how these might be avoided or remedied stating that it is ‘an agenda that inspires both evaluative accounts and normative solutions’ (p.176). The TCEJ has been framed as a tool for addressing dilemmas through whole energy systems, from production to consumption (Jenkins et al., 2014). Much of the conceptual work on the TCEJ has thus focused on relating these tenets to existing energy dilemmas or methods of informing decision-makers. Jenkins et

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<sup>20</sup> See Healy (2018) for an account of ‘embodied energy injustices’ in relation to open-pit coal mining in La Guajira, Colombia.

<sup>21</sup> Gillard et al., (2017) posit that the efficacy of policy responses to fuel poverty are curbed through misrecognition.

al. (2016) discuss a range of ways in which the principles manifest in practice. For example, procedural aspects of the approach are reflected in processes of mobilising local knowledge and information disclosure, whilst ideas of mal-distribution and mal-recognition are used to frame a wide range of energy dilemmas, from Germany's energy strategy *energiewende*, which is framed as producing distributional injustices<sup>22</sup>; to links to the mal-recognition of vulnerable groups in the UK and their vulnerability to fuel poverty.

### 3.2.1.2 *Strategies, goals and underlying tensions*

The TCEJ is argued to have two key strategic benefits which other justice (environment and climate) movements lack (Heffron et al., 2015, Jenkins, 2018):

- It provides a way to focus on energy dilemmas in isolation from broader issues.
- Its use as a decision-support tool which offers a means of 'embedding justice in policy'.

Both these benefits rest heavily on critiques of environmental and climate justice, in particular that certain aspects of these movements have limited their success in affecting policy (Heffron et al., 2015, Jenkins, 2018).

Jenkins (2018) argues that 'one of the challenges and therefore potential failings of the environmental and climate justice movement is their breadth and lack of clearly defined content.' Jenkin's outlines how energy justice provides a means of 'bounding' out energy dilemmas from wider range of issues addressed by environmental and climate justice movements (Jenkins, 2018 p.119).<sup>23</sup> Jenkins (2018) then outlines that through adopting a whole systems perspective (viewing energy systems from extraction through to consumption and waste), energy justice can focus on the dilemmas that arise at each stage of a whole energy system in isolation from other societal issues.

This approach of bounding and separating out particular energy dilemmas from broader discourses is in-turn facilitated through the adoption of a 'top-down methodology' (Jenkins, 2018). Jenkins argues that this top-down methodology is enabled because of energy justices' 'lack of an anti-establishment past' that 'opens the door for significant contributions to mainstream policy-making'. Jenkins goes on, echoing critique from Heffron et al. (2015):

'Energy justice does so by overcoming what may be identified as the "naïve" approaches of environmental and climate justice – the presumption that society would support their ideals - focusing

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<sup>22</sup> This is one of many examples of energy injustices outlined in Jenkins et al. (2016), we recommend viewing the paper for more.

<sup>23</sup> It is worth noting that Jenkin's quotes Bickerstaff et al. (2013) who are referring to energy justice as a discourse and not the TCEJ in particular.



instead on embedding justice in policy. This “top-down” methodology offers the potential for a refined “practice”(Jenkins, 2018 p.120).

Although Jenkins follows this with a caveat acknowledging the importance of recognition and activism, the integration these with top-down approaches represents something of a methodological issue for the TCEJ. The TCEJ is evidently critical of environmental justice’s roots – it is true that the movement is broad and does not represent a concise body of literature with clearly defined content - but this is exactly what Schlosberg’s conception of environmental justice, on which the TCEJ is largely based, sought to reflect. Schlosberg’s trivalent account of environmental justice is an approach which was specifically developed as a space to accommodate and reflect the broad values of activist-led, community driven movements which accrue to produce a view of global environmental justice (Schlosberg, 2004, Schlosberg, 2009).

Environmental justice movements were motivated in part because the interests and values of marginalised groups were not being reflected and recognised by power-holders and in policy formation (Schlosberg, 2009, Walker, 2012). This is a key reason as to why recognition and a pluralistic conception of justice – the idea that there are many conceptions of “the good” and what is right - are key components of Scholsberg’s trivalent approach. They exist to help articulate the idea that different groups will have different values and ways of expressing and articulating those values. So although TCEJ authors are acutely aware of the importance of recognition and activism, the TCEJ’s foundations do not necessarily align with its core strategies of “top-down” policy making. As a result, the ability of the TCEJ to act as a space to explore energy dilemmas is curtailed.

To be clear we are certainly not arguing that a greater appeal and accessibility to policy makers is not beneficial, rather we posit that this method is in tension with the TCEJs own foundations. Environmental justice movements arose because the voices of multiple community and activist led groups were not being heard and reflected in existing environmental policy processes (Walker, 2012).

This tension then brings the approach’s goal of providing “all individuals, across all areas, with safe, affordable and sustainable energy” into question. This goal is distinctly prescriptive and top-down. Granted there is an expansive range of literature which can be used to support the claim that energy, in some form, is an essential part of all human lives. But this is not explored or defined in reference to this goal, nor are definitions of “sustainable”, “safe” and “affordable” given in reference to the goal (although these concepts are discussed in TCEJ literature). The goal is rather vague – this might be purposeful, but this is neither stated nor explained. In a sense, the goal embodies traits of mal-recognition, the same dynamics the approach is keen to ameliorate – it embodies the assumption that all communities prescribe to this goal. Broader energy research includes an abundance of accounts of

how the attempts of states or power-holders to supply energy to communities who aren't consulted results in a range of distributive and recognition issues (Healy et al., 2019).

It is worth noting the similarities between this goal and the 7<sup>th</sup> sustainable development goal of ensuring 'access to affordable, reliable, sustainable and modern energy for all (United Nations, 2018). Hillerbrand (2018) offer a critique of the 7<sup>th</sup> sustainable development goal, which to a large extent mirrors the goal of the TCEJ to provide all individuals with "safe, affordable and sustainable energy". Hillerbrand argue that this goal fails to adequately capture the interconnections between the environment, humans, and technology and by doing so inhibits the goals implementation. Although TCEJ authors do discuss the socio-technical nature of energy systems they do not attempt to explain or justify their goal of providing safe, affordable, and sustainable energy for all in reference to these concepts or their own trivalent approach.

### 3.2.2 The Principled Approach; foundation and theory

The principled approach proposed by Sovacool and Dworkin (2014) in *Global Energy Justice* sets out a conception of energy justice as a means to produce 'a global energy system that fairly disseminates both the benefits and costs of energy services, and one that contributes to more representative and impartial energy decision-making'.

#### 3.2.2.1 Moral Theory

Sovacool and Dworkin lay out a broad exploration of a range of moral theories and conceptions of justice. Sovacool et al. (2017) states 'in very simple terms: [energy justice] attempts to apply principles and concepts from social justice to the global energy system in its broadest sense' (p.677). The principled approach, like the TCEJ, reflects distributive, procedural and recognition-based values to justice but these emerge in an eight principled conception of energy justice<sup>24</sup>. Before outlining their approach Sovacool and Dworkin (2014) present and outline numerous moral theories. Each is then paired with differing energy dilemmas to illustrate how a particular theory might frame and offer normative guidance in ameliorating the issue being discussed. For example, they justify the implementation of a carbon tax through drawing on utilitarian thinkers such as Jeremy Bentham and John Stuart Mill, arguing that such policies might increase the overall utility of a populous. In another chapter, Sovacool and Dworkin discuss energy poverty through a capability and contractarian lens, referencing the work of John Rawls, Martha Nussbaum, and Amartya Sen.

Sovacool and Dworkin (2014) (p.374) describe their approach:

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<sup>24</sup> In Sovacool et al. (2017) resistance and intersectionality also debut on the list of principles.

‘Our energy justice framework has elements of Kantian ethics, which takes each person as an end. It has libertarian elements of freedom and choice, suggesting that good societies present people with a set of opportunities or substantial freedoms, so they can choose to exercise these or not. It is pluralist about value, holding that capabilities for people are different and also that their own interests vary. It is concerned with justice as recognition, noting that failures of procedural justice can result in discrimination and marginalization. It, also, has elements focused on utilitarianism and welfare, attempting to improve the quality of life for all people, as defined by their capabilities.’

The earliest conception of this approach drew almost exclusively on western-centric theories of justice. However, Sovacool et al. (2017 p.678) illustrates how the principled approach to justice can ‘tap into the rich insights offered by non-western justice theorists’, drawing on such concepts and approaches as Ubuntu, Confucianism, Dharma and a range of indigenous perspectives of the Americas, as well non-human systems of value.

The principled conception seeks to connect energy policy and technology to eight philosophical concepts: virtue, utility, human rights, procedural justice, welfare and happiness, freedom, posterity, and fairness (Sovacool and Dworkin, 2015). The approach then uses these concepts to frame eight energy issues as matters of justice. These principles are underlined by a cosmopolitan foundation implying that they are universally applicable and reflect the equal moral worth of all humans (Sovacool et al., 2016). The main output of these principles is a conceptual framework consisting of eight values which should be embraced by decision and policy-makers; availability, affordability, due process, transparency and accountability, sustainability, intergenerational equity, intra-generational equity and responsibility.

### *3.2.2.2 Strategies, goals, and underlying tensions*

Sovacool and Dworkin (2015) position the approach as a useful analytical and decision-making tool for framing and responding to energy dilemmas. LaBelle (2017) describes how the cosmopolitan aspects of this approach allow it to act as a universal, normative check-list for energy decision making and this seems very much to be the approach’s strategy – to investigate and apply the principles and lessons from a range of works of justice to the complex issues which arise in relation to energy systems.

This does well to illustrate how framing a specific issue, for example energy poverty, with a given theory of justice can yield valuable normative guidance and ethical framings, which help move to ameliorate the issue. These framings often prove their use through creating a conceptual space in which the experience of energy poverty can be articulated and better understood. Despite drawing on a range of moral theory they do not subscribe to one particular notion of the good, and instead subscribe to a

pluralistic conception of value which is articulated through the concept of capability (which we expand on later). They illustrate the benefit of using a given theory in assessing a given energy dilemma.

Of course, one could argue that the selection of a given set of values to analyse an energy dilemma might just follow the views of the author i.e. an author might choose a theory that reflects their existing values and conclusions. However, the importance of theory becomes particularly important when analysing a complex energy dilemma that might not necessarily be directly voiced or seen by a given group. For example, Sovacool and Dworkin (2014) draw on an Aristotelian approach to describe why efficiency is key to a functioning energy system. The efficiency of large scale energy systems will impact people and different groups in many ways e.g. affordability and reliability. However, these issues might not be voiced in respect to the efficiency of the system supplying them energy, and when airing their grievance might not include any reference to efficiency or the broader energy system. As such, people who interact with any particular part of an energy system will be creating a local account of justice, which does not have the language necessary to offer guidance as to how to structure such a system. Through drawing on a particular theory, namely Aristotle's ideas of virtue and happiness, Sovacool and Dworkin (2014) are able to outline the value of an energy system aimed towards the betterment of human lives.

Although this exploration of moral theory has resulted in a well-grounded set of principles, we note that the methods presented by Sovacool and Dworkin currently have some limitations. First, although their exploration of justice theory is substantial, there is no clear explanation as to why one theory is used to frame a specific issue and not another. For example, why energy poverty is framed by contractarian and capability approaches and not libertarian or human rights-based approaches. This poses an issue for their normative check-list, it does not yet explain why it frames one issue with a particular moral theory and not another. Therefore another level of justification is required to explain the particular selection of moral theory which underpin the values in this energy justice approach. Second, Sovacool and Dworkin select specific and different conceptions of justice to conceptualise a number of different energy related issues (Sovacool and Dworkin, 2014 pp.14-15). As a result, the approach does not illustrate how framing the very same energy issue through a different approach to justice can yield drastically different normative conclusions (although they acknowledge that different ideas of justice can and will conflict<sup>25</sup>).

This is a particularly pertinent point which relates to broader energy justice discourse. There is a need to explain why certain moral theories are used over others in the formulation of energy justice approaches. This might be to do with a moral theories' ability to capture the complex interactions

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<sup>25</sup> See Sovacool and Dworkin (2014) p.18 and pp.372-372 where the authors acknowledge tensions between moral theories and touch on issues of relativism.

humans have with energy systems, or the normative principles which might best guide and frame future energy policy decisions. Regardless of the reason, the selection of moral approaches and concepts will alter the normative outlook and the operationalisation of the approach. Since these approaches are intended to have real-world impacts through use in research, policy and decision making the use of moral theory to provide guidance must be balanced with the ability of a given approach to energy justice to capture and understand the experiences of those who endure energy dilemmas.

### 3.2.3 Summarising both approaches

In sum both approaches, to varying degrees, could be improved by expanding on their engagement with moral theory (table 3-1). Both are limited in creating a space through which to analyse or understand energy dilemmas, and this limits the efficacy of both approaches in effectively conveying the impact of energy dilemmas on people’s lives to policy and decision-makers.

*Table 3-1 The foundational theory, strategies, goals and underlying tensions of the triumvirate approach and principled approach to energy justice compared.*

	The triumvirate approach	The principled approach
Foundational theory	The approach primarily appeals to a trivalent account of justice, consisting of three broad dimensions; distributive, recognition-based and procedural justice. These three dimensions are used to frame and normatively advise on different aspects of energy dilemmas.	The approach appeals to a range of moral theories and perspectives and in doing so has distilled a range of principles through which to frame, analyse and advise on energy dilemmas.
Strategies and goals	This approach is intended to be used as a “decision-support tool” and as a means of embedding ideas of justice in policy via a top-down methodology (See McCauley et al. 2017). This approach is accompanied by the method of separately focusing on energy dilemmas in isolation from broader issues.	A normative check-list to be used by policy and decision-makers consisting of eight values; availability, affordability, due process, transparency and accountability, sustainability, intergenerational equity, intra-generational equity and responsibility.

Underlying tensions	The TCEJ requires additional concepts and framings if it is to create a useful conceptual space in which the grievances of those who suffer in relation to energy systems can be articulated, heard and better understood. Without the creation of this space it is hard to see how the approach can achieve its goal of better integrating ideas of justice into energy policy. This difficulty is compounded by the approach's apparent dismissal of the grass-roots, activist values on which the trivalent account of justice was initially founded. The same logic applies to the justification of their goal of safe, affordable and sustainable energy for all. The approach currently lacks the concepts necessary to justify this goal or explain why it might relate to the attainment or avoidance of some conception of justice or injustice.	The approach has provided only a limited justification as to why it chose the values and theories it did. Such an explanation is warranted if the approach is to justify why such a combination of theories can produce the necessary space in which to articulate and act on grievances which arise in relation to the energy dilemmas the approach discusses.
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### 3.3 Moral theory and a space for understanding energy justice

In this section, we outline how certain ways of employing of moral theory can help frame and make sense of energy dilemmas. In turn, we explain how these framings help to create the conceptual spaces required for current approaches to energy justice to produce meaningful insights and normative guidance. We outline how different moral theories can paint drastically different normative views of a given situation and subsequently produce different guidance regarding how to articulate or ameliorate an issue.

The vast quantity and diversity of justice scholarship makes it difficult to define exactly what a moral theory or account of justice does or aims to do. As such we do not attempt to characterise or provide a single definition of justice. A simple means to approach moral theory, as Sandel (2010) posits, is to view these theories as presenting answers to the question 'what's the right thing to do?' To answer this question we have to have some sort of account as to what makes something right or wrong. There are

two broad, and often inter-related perspectives, which offer explanations as to how this might be achieved. Firstly, we might assume that justice, is what those who claim to suffer injustice say it is<sup>26</sup>. However, we might have situations, especially in relation to energy systems in which claims of injustice vary in their severity. For example, how can we compare the claims of injustice of a group who have been violently displaced because of a coal mining operation and the claims of a community who argue a nearby wind development spoils their enjoyment of nearby landscapes? We take both these issues to be legitimate concerns but here moral accounts of right and wrong (the second perspective), if used pensively, can create spaces and language through which those suffering oppression or hardship, and its severity can be heard and understood.

The idea outlined in the following section is thus that certain moral theories and ideas of justice can help to create spaces to articulate and understand the impacts of energy dilemmas on people's lives, but with the requirement that these spaces must be broad enough to incorporate a diverse range of voices and conceptions of what is right. This breadth or scope for a diversity of understandings of what is good or just is what we will refer to from here as pluralism. Pluralism in this sense reflects the idea that there exist multiple, overlapping and sometimes conflicting conceptions of what is right (Schlosberg, 2009). A useful example and application of pluralism is found in Schlosberg's account of environmental justice (Schlosberg, 2004, Schlosberg, 2009). Schlosberg's account embodies a broad pluralism as to create space for the articulation of grievances from a diversity of communities who form the environmental justice movement. Schlosberg notes that many accounts of pluralism arose as critiques of universalist and singular conceptions of justice following arguments regarding the inability of a singular approach to reflect real life experiences of injustice (Schlosberg, 2009). Despite this, Schlosberg does not conclude that these theories have no use or value and instead argues:

'We have numerous components and conceptions of justice, and see that different and multiple theories can apply to various issues, cases, and contexts. Using the range of theories available to us, and understanding how they overlap and interact, will illuminate problems more thoroughly. Such an approach will also bring us to see that what we may now understand as disparate issues and movements may be brought together with this shared and overlapping discourse of justice.'

Schlosberg (2009 p.173)

### 3.4 Justice: different theories, different answers

A useful way to describe how moral theories answer the question "what's the right thing to do?" is by observing the good or 'metric of justice' through which they frame the world. Saying 'good' or 'metric' here does not necessarily refer to something material like resources. Although many theories and works

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<sup>26</sup> This is often referred to as "claim making". Walker (2012) offers a useful explanation of this practice.

focus on resources or wealth, these terms can refer to abstract concepts, such as a human rights, positions of power, or aspects of well-being such as relationships and dignity. Robeyns and Brighouse (2010) frame this as asking ‘what should we look at, when evaluating whether one state of affairs is more or less just than another?’ Robeyns and Brighouse are referring to metrics of justice (sometimes referred to as ‘currencies of justice’).

Often theories provide a way of describing how societies function and which structures, procedures and institutions might be required to facilitate this. These might be conceptions of the state, nations, international bodies and courts, (for example the study of these institutions, their underlying values and how citizens interact with one another through them - this falls under ‘political philosophy’). These institutions are often highly idealised and can embody normative assumptions, however, used with caution, they can add to a theory’s ability to frame the world through offering a broader socio-political backdrop in which to embed particular events or situations. As we expand on later depending on the theory, such ‘metrics’ can be used to capture and reflect both social and political maldistributions within a society.

We compare the framings and insights produced by Jeremy Bentham’s utilitarianism and Martha Nussbaum’s capabilities approach when applied to the same energy dilemma. It is worth noting that Sovacool and Dworkin (2014) draw on both Nussbaum and Bentham in different chapters of *Global Energy Justice* - it is worth consulting this text to explore how these approaches can be applied to individual energy issues. However, they do not compare and contrast these theories using the same case – which is what we do below as a means of illustrating the variance of normative guidance different moral theories can provide when assessing the same energy dilemma. For each approach, we identify the metric of justice and the distribution of the good that they describe.

Some of the conclusions from this case study may seem initially intuitive and obvious, but the point here is not necessarily to provide a conclusion as to whether the project was morally right or wrong, but to illustrate how the use of theory to frame an energy dilemma can yield substantially different framings and insights.

### 3.4.1 Bentham’s Utilitarianism

Jeremy Bentham begins *An Introduction to the Principles of Morals and Legislation* stating ‘nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what we shall do’ (Bentham, 1781). Sandel (2010) suggests that through this reasoning Bentham concluded that the aim of morality should be to maximise happiness i.e. the overall balance of pleasure over pain. Actions and events which stand to promote happiness are therefore morally permissible, and ones that do not, are not. As such, the right



thing to do in any given situation is the action that will maximise overall pleasure within society (Bentham termed this “utility”).

The metric of justice used by Bentham here is clearly utility, the distribution of which ensures that aggregate utility is maximised within a society. Sandel notes that Bentham not only intended this logic for decisions made by individuals but also by legislators and policy makers (Sandel, 2010). These ideas, in theory, could therefore lend themselves to the assessment of many issues pertinent to policy and decision-making themes in energy justice. However, utilitarianism has been heavily criticised by numerous scholars for its lack of attention of individual rights and its ability to effectively articulate all moral actions into a single metric (Sandel, 2010).

It is worth noting that there are other approaches to utilitarianism that are more accommodating of individual rights and the unique value of different activities. For example John Stuart Mill’s approach to utilitarianism argues that liberty is of upmost importance to the individual and that utility should be maximised over time. Mill also argued that not all sources of pleasure are commensurable but that some sources of pleasure – ‘higher pleasures’ – are better than others (Crisp, 2002, Mill, 1861). For simplicity, this section draws solely from Bentham’s Utilitarianism to inform our comparison below. But using Mill’s approach to frame a given event or situation would yield different normative conclusions and guidance<sup>27</sup> from both Bentham’s Utilitarianism and Nussbaum’s capability approach (which we outline next), as would any other approach to justice.

### 3.4.2 Martha Nussbaum’s central human capabilities

Martha Nussbaum’s account of central human capabilities provides a partial theory of justice through which to frame the world. The term ‘partial theory of justice’, describes a theory that can explore certain injustices relevant to its prescriptions but cannot specify what to do once these prescriptions are fulfilled.<sup>28</sup> The approach focuses on what people are able to do and be. This indicates that each person must be viewed separately rather than on an aggregate level (this is converse to Bentham’s utilitarianism) (Robeyns, 2016a). Nussbaum (2001) bases the concept of capability on the freedom to achieve a range of ‘functionings’. ‘Functionings’ in turn are defined as the ability to do and be things which humans have reason to value. This can range from something fairly objective such as being free from illness (i.e. the capability of bodily health) to the abstract concepts of political and democratic participation (i.e. the capability of political control over one’s environment). (Robeyns, 2016b)

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<sup>27</sup> Mill’s utilitarianism would consider liberty of individuals to have more weight relative to overall aggregate utility.

<sup>28</sup> See Robeyns (2016) for a further explanation.

The approach focuses on capabilities as ends in and of themselves, because the means for one person to achieve the same level of capability as another might be substantially different. For example, it might require significantly more resources for a less mobile person to gain the same level of bodily integrity as a more mobile person. Therefore, the approach foremost focuses on capability as opposed to the distribution of resources. Nussbaum argues that the state should ensure each citizen meets minimum threshold in each of a predefined list of capabilities; life; bodily health; bodily integrity; sense, imagination, and thought; emotions; practical reason; affiliation; other species; play; and control over one's environment. This is an adapted and shortened version the full account can be found in Nussbaum (2001) (pp.78-80).

In the case of this theory, the metric proposed is “capability”, the distribution is one which ensures a minimum level of capabilities for all. If this level is not attained, it might reflect that a claim to justice exists (Nussbaum, 2003). This minimum threshold however can be quite high or equal for all if it has reason to be. For example, one might argue that the capability of political participation, must be equal in all to ensure that a democracy functions properly and fairly.

### 3.5 A case of hydro power: applying theory to produce a socio-political framing

The moral theories outlined above will offer different framings of both the benefits and burdens of events and situations which occur in relation to energy dilemmas. A common example of an energy dilemma is the construction of a hydro power dam, which has the potential to yield a high output of low emission, renewable energy and to manage flooding in vulnerable areas, yet often involves the mass displacement of local populations and extensive ecological damage. When introducing the concept of utility, Sovacool and Dworkin (2014) briefly draw on the example of the Hirakud Dam in Orissa, India. They note the dam yielded a number of benefits such as helping to mitigate flood risks, providing irrigation for 75,000 square kilometres of crop land, and the production of 207.5 MW of hydroelectricity (Sovacool and Dworkin, 2014). However, they also note the costs of the dam's constructions; the permanent flooding of 600 square kilometres of land and the subsequent relocation of 150,000 people from 22,000 families – many of whom had complained about the project but had been overlooked. Those being resettled faced a number of risks including marginalisation in their new homes, unemployment and lack of access to common resources (Nayak, 2013). An important dynamic within many of these issues is that certain groups and people are more vulnerable than others. For example, women in particular face loss of livelihoods as a result of dislocation and are often faced with more precarious and dangerous sources of income (Gururaja, 2000). Infants and the elderly are also affected heavily by dislocation (Nayak, 2013).

Evidently, this project yielded both substantial costs and benefits. It is important here to note that framing such a complex situation with different moral theories won't necessarily yield a clear answer to whether or not a project was normatively the 'right thing to do' but will offer a perspective which might help inform or consult people on a decision or broaden our understanding of the situation at hand. So far, we have outlined a number of statistics and consequences without any normative framing (except perhaps our own intuitions). Drawing on a set of moral theories will likely create or change our perspective on the normative content of the statistics.

Sovacool and Dworkin note that from a utilitarian perspective, particularly Bentham's, if the overall contribution to utility outweighs the loss then the project is worthwhile. Sovacool and Dworkin do not endorse the project themselves because of this conclusion but rather state what those of a utilitarian disposition might conclude. As Sovacool and Dworkin did, we can imagine the thought process of these utilitarians. The relocation and overlooking of the views of 150,000 people from 22,000 families, would likely be a source of substantial disutility, foremost for those having to resettle, but perhaps to for the conurbations which may have struggled to receive them. For the families, it may well have meant the severing of ties to treasured landscapes, particular ways of life, sources of income, friends and more distant relatives. To a Benthamite utilitarian, these costs would all translate into varying losses of utility. The benefits the project yielded, perhaps agricultural gains, the mitigation of the devastating impacts of floods, and the production of energy and the activities this subsequently enables, would yield gains in utility. The fact that different individuals might suffer more or less depending on their social background, gender and age is not accounted for in this approach and these gains might not necessarily have been obtained by the resettled individuals, but a Benthamite would only be concerned with the overall gain or loss of utility within a wider population. Thus if these benefits represented a gain in utility of the population overall then they would argue that undertaking the construction of the Hirakud dam was the right thing to do.

The above information of course can be reframed through a different moral lens, and changing this moral framing may yield substantially different outlooks and judgements. Framing the above through a capabilities lens does just this. The costs presented by the Hirakud dam can be framed in reference to Nussbaum's list of central human capabilities.

It is clear that many peoples' capabilities were compromised throughout this process. For example, the act of ignoring the complaints of those being forced to resettle might act to violate the capability of political control over one's environment. It is evident that this project and the subsequent relocation of many people was not a voluntary choice. Such a circumstance may well have reduced political capabilities of those being forced to resettle, and indeed their capability of bodily integrity. A number of other capabilities might be impacted by resettlement, the capability of affiliation would be impeded as resettled communities become fragmented from one another. Simultaneously the resettlement

process might take a greater toll on more vulnerable groups, for example the elderly and less mobile, such situations would likely result in the impairment of their capability of bodily health.

The dam simultaneously offered many means of capability enhancement. As outlined, the dam yielded a number of benefits, including flood mitigation, extra water resources and electricity. All of these benefits would likely have resulted in the enhancement of many people's capabilities. The avoidance of severe floods would have prevented the deprivation of many capabilities, such as bodily health, affiliation and even life. The extra water resources will likely have increased food security in certain areas which will have promoted numerous capabilities directly and indirectly. For example, bodily health depends in part on access to food and is essential for one to properly affiliate and engage in society. The electrical output from the dam is likely to have enhanced a number of capabilities. In being a source of both heat and lighting, it will have enabled many activities, for example, enabling children to study in the evenings thus enhancing capabilities such as practical reason.

The above benefits, however, would only be justifiable if those affected by the dam met a given threshold level of capabilities, which does not appear to be the case.<sup>29</sup> As a result, the initial assessment as to which aspects of a situation are voiced or framed as an injustice are going to differ depending on the moral frame which is used. It becomes clear that switching theories to analyse this event is likely to yield different conclusions as to which aspects of the project related to justice. Understanding the project through a metric such as capabilities enabled us to see which aspects of people's lives stood to be enhanced or compromised by the dam's construction. Subsequently, this approach can provide insights on alternative ways of delivering the dam or alternatives ways of meeting the goals of the dam (i.e. electricity, flood alleviation and irrigation resources) that do not compromise these capabilities or that meet them in different ways.

The utilitarian approach took a conceptual birds-eye view of events providing insights on an aggregate level, whilst the capability approach enabled the probing and conceptualisation of events which happen on a personal level. This dynamic feeds into the question of which moral theories lend themselves best to creating a space in which to capture, conceptualise and articulate the energy related injustice which energy justice frameworks seek to frame and ameliorate. In certain cases, a large scale energy project might be deemed necessary because its benefits outweigh its costs. However, this doesn't imply that the event and its consequences should be explored only through an aggregate lens. The complexities and nuances of such a project might better be explored through a different lens.

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<sup>29</sup> The capability perspective focusing on the lives of individual people, treating them as ends, would likely be opposed to the way in which people's threshold levels of capabilities were traded to the benefit of others. This isn't to say that the capability approach does not favour limiting the capabilities of some for the benefit of others if those people being limited have capability levels well above the sufficient threshold. See Robeyns, (2016c) for a further discussion on this.

### 3.6 Lessons for energy justice

In using multiple theories to frame an issue (table 3-2), a conceptual space begins to emerge in which the impacts of an event on people’s lives and broader society can be explored in reference to certain values and socio-political circumstances. The circumstances provides a framing, or “socio-political backdrop” in which to contextualise the construction of the dam. A space was thus created which helped identify possible underlying situations which meant certain groups were already more vulnerable to this type of energy dilemma. The capabilities approach offered unique insights on the impacts of the dam on individual people’s and communities’ lives. Further, the approach pointed towards existing deprivations which likely compounded people’s vulnerability to the burdens of energy dilemmas. Simultaneously, the utilitarian framing offered insights into the likely logic employed by the decision makers. Importantly this broad conceptual space is not just for academics and decision-makers to probe historic energy dilemmas but can be drawn on as a space for the testimonies and voices those who currently endure such dilemmas to be voiced and better understood.

*Table 3-2 A comparison of the normative framings, insights and guidance produced by separate capability and utilitarian framings applied to the case study of the Hirakud dam.*

	Capability frame	Utilitarian frame
Scale	Community and personal level	Aggregate “bird-eyes” lens
Normative framings	The capability approach offered insights into the dam’s impacts on specific aspects of people’s lives. Through focusing on individual people’s or community’s existing levels of capability the approach was able to highlight how certain demographics and groups might be more vulnerable than others to adverse impacts of the dam’s construction through existing capability deprivations.	The utilitarian framing focused on the aggregate impacts of the dam’s construction on the overall utility of the stakeholders. The outcome of the dam’s construction was therefore assessed based on whether it increased the utility of the overall affected population. Individual issues such as relocation, flood mitigation, habitat destruction are only weighted based on their overall impact on aggregate utility.
Normative insights and guidance	The approach provided a means of identifying a diversity of groups which needed to participate earlier in the	The broad and aggregate framing the utilitarian approach produced gave a retrospective insight into the logic and

	<p>decision-making processes. Simultaneously, the approach offered a means of articulating and justifying which aspects of dam's constructions were normatively problematic. Through identifying how certain groups or people may be more vulnerable than others to certain impacts of dam's construction, the capability approach offered insights into which issues and measures could be focused on or implemented in order to mitigate capability deprivation.</p>	<p>reasoning likely employed by the decision-makers involved in the dam's construction. This framing offered an insight as to how the impact of a project can be assessed, but more so, in conjunction with a capabilities based framing, highlighted the flaws and important circumstances which can be overlooked by taking such an aggregate "bird-eye" view of a large scale energy project.</p>
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### 3.7 A framework for the pluralistic use of moral theory

Here we draw on the above case study to construct a framework outlining how a pluralistic use of moral theory can be drawn on to contextualise and explore energy dilemmas in reference to broader socio-political issues which might serve to underpin and exacerbate energy dilemmas. We later explain how this framework can be used to strengthen both the TCEJ and principled approaches to energy justice, particularly in reference to the methodological issues outlined in section 2.

In the case study, we note that both approaches were applied to the same situation, yet enabled a theoretical probing on different levels and at different depths, providing different normative conclusions and framings. These framings entail viewing a given energy dilemma in relation to external structures, principles and norms, as outlined by the particular theory being used. These components can combine to produce a socio-political backdrop in which to embed and understand an energy dilemma within a broader context. Figure 3-1 illustrates this process, showing how energy dilemmas can be framed by moral theories or approaches to yield valuable normative guidance and insights, and subsequently illuminating existing social and political issues, which intersect with an energy dilemma. Providing a view of an energy dilemma framed within a broader situation can enable researchers to explore related and underlying socio-political situations, which may have been previously concealed. In turn, exploring this broader framing can offer a greater variety of normative insights, which can be used to guide decision making processes. More importantly perhaps, this social and political backdrop can be used to highlight particular groups or societies which have been overlooked within decision-making processes i.e. those who may be deprived of the things a given theory holds valuable. Of course, this alone will

not inform on the experience of certain groups, but at the very least can highlight the value of enabling these groups to participate in future decision-making processes.

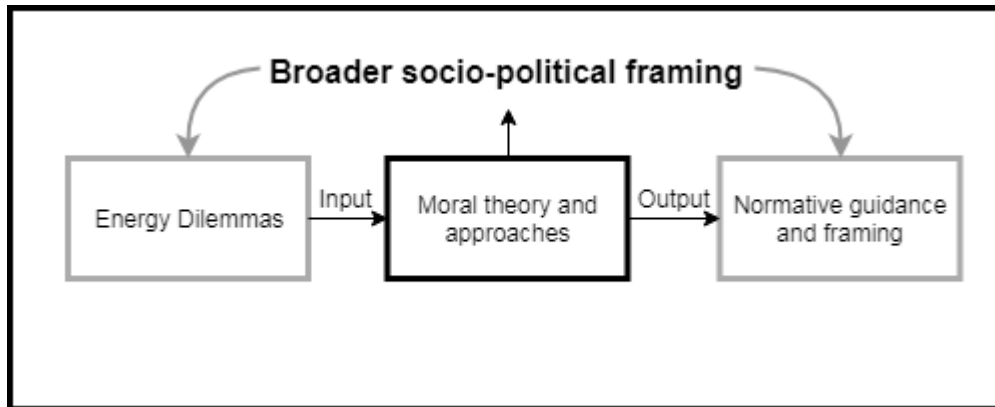


Figure 3-1 A framework for framing energy dilemmas in relation to moral theory, yielding normative framing and guidance whilst embedding the energy dilemmas within a broader socio-political back drop.

Drawing on additional theory to explore energy dilemmas allows for a broadening of the socio-political backdrop in which energy dilemmas are embedded. When thinking about the case of Hirakud dam, we might firstly think of it in isolation from other socio-political circumstances. However, when these events are viewed through different moral lenses, a set of socio-political circumstances become illuminated. Take, for example, the mass resettlements. Initially this might be viewed as a symptom completely dependent on the construction of the dam. When viewed through a particular moral theory, in this case the capabilities approach, the resettlements are seen to be a symptom of an underlying and already existing deprivation of political capabilities. The dam's construction and the mass resettlements acted to exacerbate this already existing deprivation. Thus the impacts of this particular event becomes clearly embedded in a broader socio-political setting, revealing opportunities and insights that might help mitigate such deprivation in the future.

A pluralistic approach to using moral theory provided a multi-dimensional view of an energy dilemma. In the case study Bentham's utilitarianism gave a potential insight into the viewpoints of the decision-makers - that being one based on making decisions on aggregate. When contrasted with the capabilities view of those affected by the dam's construction, shortcomings with such top-down decision making processes become apparent. The case study therefore did not just yield normative insights into those who were affected by the dam's construction but also offered an insight into the potential flaws embodied in the decision-making processes preceding and during its construction.

Listening to the voices of those suffering these events can go some way in explaining how these situations become unjust. However, energy systems are complex and expansive, and no one set of voices (or theories) will be able to articulate and reflect the complexity and scale of such circumstances alone.

The pluralism we propose therefore does not just embrace the idea that many conceptions of justice and “the good” exist, it also creates space for these complex energy dilemmas to be analysed through multiple moral framings and approaches. This can help link and articulate these events and voices together over various scales, creating an overview of energy dilemmas embedded in larger social and political systems. This is something that seems incredibly pertinent if energy dilemmas are to be addressed using a whole-systems approach.

### 3.8 Implications for TCEJ and the principled approach

In section 3.2, we outlined a number of tensions which, in different ways, inhibited the abilities of both the TCEJ and principled approach to create a space in which to articulate and understand the impact of energy dilemmas on those who suffer them. This section therefore outlines how the above framework and pluralistic appeal to moral theory can help ameliorate these issues.

Firstly, adopting a pluralistic approach to the use of moral theory would strengthen the TCEJ, through enabling it to draw on and integrate a broader range of moral approaches and concepts. As the case study illustrates in section 3, being able to outline which aspects of a situation or event contribute to a communities’ or persons’ experience of injustice can provide valuable guidance as to how to ameliorate a given situation. This exercise would also prove useful in exploring the TCEJ’s goal of providing safe, affordable, and sustainable energy to all through a moral frame. It would enable triumvirate scholars to ground and detail why this goal is of moral significance by framing energy access by the components or ideas of justice it helps deliver and the features of injustice it helps ameliorate.

Moral theory has been drawn on in similar ways within broader energy justice discourse. For example, Day et al. (2016) conceptualise energy poverty through a capabilities lens, enabling them to explore and articulate which important aspects of a person’s life might face deprivation because of limited access to energy. Day et al. found that the adoption of a capabilities approach helped broaden traditional European conceptions of fuel poverty, which are limited to thermal comfort and health, to encompass wider impacts of energy poverty such as the deprivation of social respect and the ability to maintain relationships (Day et al., 2016). The latter impact is echoed empirically in analysis by Middlemiss et al. (2019) of people who have experienced fuel poverty. Wood and Roelich (2019) draw on the capabilities approach and Day et al.’s framework to articulate issues of climate change mitigation in terms of well-being. Approaches which draw on moral theory in this way help provide the normative guidance that the triumvirate conception seeks to produce. They do so through offering language through which to articulate the concerns and grievances of those who endure a range of energy dilemmas. The adoption



of a broad pluralism into the TCEJ would enable the approach to integrate and draw on a broader array of existing justice literature without having to subscribe to a defined set of values.

Adopting a pluralistic use of moral theory would also go some way in helping to alleviate the tensions between the TCEJ's top-down initiatives and its underlying foundational ideas of justice. With the goal of "embedding justice" in policy, the TCEJ's aims reflect a concern with enabling policy makers to understand and operationalise ideas of justice – or to create spaces in which people's conceptions of justice can be understood. Integrating a pluralistic approach would enable the TCEJ to acknowledge the importance of its triumvirate whilst drawing on other moral accounts to explore how top-down policy strategies can come to embody ideals of distribution, recognition and procedure. Although the theories we discuss in this paper are more likely to be described as distributive theories of justice, the TCEJ could draw on this approach by appealing to theories of procedural justice or theories of democracy<sup>30</sup>. Recognising the value of certain theories can also assist in distilling these concepts into useful tools or heuristics which can guide policy-making decisions. As such a broader, pluralistic use of moral theory would enable the TCEJ to maintain its core tenets through developing its own foundation around them.

It is interesting here to note a study by Milchram et al. (2018) who draw on the TCEJ to explore the values and conflicts which underpin public debate on smart grids. Reviewing a number of Dutch and British newspaper articles, they find that a number of values such as sustainability, transparency, control, privacy and security are all associated with the implementation and operation of smart grid systems. Subsequently they recommend that energy justice needs to be broadened to include such values. It is interesting to note therefore that such values are reflected in numerous existing works of moral theory (Sen, 2001, Nussbaum, 2011, Adger, 2006, Rawls, 1971, Anderson, 1999).

Our earlier concerns regarding the principled approach were that it was yet to explain why it drew on one theory of justice over another when framing a particular energy dilemma. And secondly, that it did not explore the implications of framing the same event with differing theories. Given that the approach's principles are developed from an original survey of literature it doesn't face the same foundational tensions between its philosophical grounding and its strategic initiatives. However, we found that the beneficial probing of literature that Sovacool and Dworkin (2014) layout can be enhanced through providing broader analysis of the same energy dilemmas through using opposing (or at least differing) moral theories. Certain theories will be able to capture and articulate the impact of energy dilemmas on

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<sup>30</sup> Certain theories are often described separately as either distributive, recognition or procedural theories of justice. However, in some cases it might be more accurate to describe them as sitting on a spectrum, with certain theories sitting between these three dimensions of justice. For example, a number of Nussbaum's central capabilities embody aspects of recognition and procedure. We are thankful to an anonymous reviewer for prompting us to think about this further.

people's lives more powerfully than others and exploring this can help justify why we might draw on one theory over another in developing guiding principle for decision-makers.

The above case study also serves to illustrate the relativism embodied in certain accounts of justice, whether community based or singular accounts, it illustrates that different voices and theories will embody and reflect different and sometimes conflicting values. There are still challenges to overcome in this respect. Assessing which accounts of justice are best suited to evaluating a particular set of circumstances can represent a normative judgement in itself. Regardless, using multiple theories of justice can serve to highlight and explain these differences, as well as act as guides in deciding which set of values might best be drawn on when analysing an issue. This is essential when discussing large-scale transboundary energy dilemmas such as climate change, which affect a diversity of communities whom each have their own value-sets and concerns.

### 3.9 Conclusion

To summarise, through comparing both the triumvirate and principled approach to energy justice, we have revealed a number of theoretical and methodological limitations. We have argued that the adoption of a broad pluralistic use of moral theory would enable the utilisation and comparison of moral concepts, which in turn can facilitate and support the goals and methodological underpinnings of both approaches. We have illustrated the outputs of using a range of moral theories to articulate and conceptualise the impacts of energy dilemmas. Additionally, we have outlined the importance of bearing in mind the substantially different normative framings moral theories provide. We suggest that this method will help energy scholars to identify which approaches are best able to capture the complex and intersected injustices energy systems pose.

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# Chapter 4 Redefining energy justice: integrating capabilities and trivalent justice

N. Wood

## **Abstract**

Current energy justice frameworks make broad claims of their ability to analyse energy dilemmas and produce viable normative guidance. Proponents of one such prominent framework, termed here “the triumvirate conception of energy justice” (TCEJ), assert the framework’s ability to identify injustices and guide decision-makers to produce more “just” and “equitable” energy systems. This paper explores the validity of these claims and identifies whether this approach to energy justice can produce the outputs and findings its proponents state it can. This paper reviews and critiques two existing applications of this framework to energy dilemmas. It posits that the TCEJ’s current interpretation of trivalent accounts of justice and limited appeal to more applied justice theory impedes the approach’s ability to capture the complexities of energy dilemmas that might come to be described as “unjust”. I find that a more detailed interpretation of a trivalent conception of justice found within environmental justice theory, which captures the interdependencies of procedural, recognition-based and distributive dimensions of justice, can act as a viable foundation for an account of energy justice. Further, I suggest that the integration of the capabilities approach would enable the connection of a trivalent account of justice to the intersection of energy dilemmas and the valuable aspects of peoples’ and communities’ functionings. In sum, this foundation is positioned as a starting point for a broader account of energy justice – a space to initially articulate and better understand the broad array of hardships and demands at the centre of energy systems - as opposed to an analytical framework to produce normative guidance.

## 4.1 Introduction

“Energy Justice” has been described as a normative approach, a framework for analysis, a movement and a ‘cross-cutting social science research agenda’ (Jenkins et al., 2016b, Sovacool et al., 2016, Fuller and McCauley, 2016). As a research agenda “energy justice” does not appeal to any particular analytical framework or approach but consists of an array of contributions and themes which in themselves embody a diversity of approaches and conceptions of justice and fairness (See Bickerstaff et al., 2013). In turn this agenda has focused broadly on normative issues which relate to energy systems and people’s lives (Healy et al., 2019, Demski et al., 2019, Sareen and Haarstad, 2018, Damgaard et al., 2017, Snell et al., 2015, Fuller and Bulkeley, 2013). For example, the equitable mitigation of climate change, fuel poverty, the disposal of nuclear waste, and broader environmental degradation linked to energy systems

(Bickerstaff et al., 2013, Sovacool et al., 2014, Sovacool and Dworkin, 2014, Sovacool et al., 2016, Jenkins et al., 2016b).

The aims of the energy justice research agenda are broad and hard to define. The decisions to research certain aspects of energy systems are as normative as the values or concepts that researchers use to analyse these issues. However, discrete conceptions of energy justice exist, which taken in isolation, contain more tightly defined conceptual structures, goals, and moral and political values (See McCauley et al., 2013, Sovacool and Dworkin, 2014). A tendency in the literature to conflate these energy justice frameworks and energy justice as a research agenda can be a source of confusion (for example see Jenkins et al., 2016b, McCauley et al., 2013).

Individual frameworks tend to consist of conceptions of energy systems and the types of problems which arise in relation to them. These conceptual frameworks are used to frame and further explore the ethical dilemmas which emerge in relation to energy dilemmas, with a general aim of better informing energy policy and decision-makers on such issues (Jenkins et al., 2017a, Sovacool and Dworkin, 2014).

The most broadly utilised discrete conception of energy justice was initially set out in McCauley et al. (2013). This conception revolves around three broad dimensions of justice; distributive justice, recognition-based justice and procedural justice (Jenkins et al., 2016b). McCauley et al. (2013) initially termed these three dimensions of justice as a “triumvirate of tenets”, from here this conception is referred as the “triumvirate conception of energy justice” or the “TCEJ”. Almost all iterations of the TCEJ revolve around concise summaries of distributional, recognition-based, and procedural justice. When this paper uses the term TCEJ it is referring to a specific interpretation of what we might call “trivalent accounts of justice”, that is, an account of justice which centres on these three dimensions of justice. There are other interpretations of trivalent accounts which are discussed later in this paper, such as those found in environmental justice literature. Here we can take TCEJ to refer specifically to the energy justice framework set out and developed in particular set of literature (McCauley et al., 2013, Jenkins et al., 2016b, McCauley et al., 2016, Jenkins et al., 2018, Jenkins et al., 2016a).

Jenkins et al. (2016b p.179), who summarises and expands on the approach, states “the challenge of energy justice is to apply this three-pronged approach to energy policy across the whole energy system”. This challenge is taken literally by the TCEJ authors, who have retrospectively applied this three part approach to a number of case studies on energy dilemmas (Jenkins et al., 2018, Jenkins and Martiskainen, 2018, McCauley et al., 2016, Jenkins et al., 2017b).

Outside of TCEJ literature the definitions of these dimensions of justice are often contested. Here they are summarised based on the definitions provided in the TCEJ. Later, alternate interpretations of these dimensions are discussed:

**Distributional justice** is often described as the spatial or temporal aspects of energy dilemmas i.e. where and how the benefits and burdens of energy systems emerge in space and over time (Jenkins et al., 2016b).

**Recognition-based justice** regards how certain groups and communities are represented and recognised in reference to energy related events and situations. Recognition issues can refer to the stigma, insults, and stereotypes marginalised groups are subject to, as well non-recognition entirely – being seemingly invisible in policy and decision-making processes. A common form of misrecognition in energy literature is how those who endure fuel poverty can be stigmatised and stereotyped (Day and Hitchings, 2011). The concept of recognition in the TCEJ is largely drawn from work by Nancy Fraser (Fraser, 1996).

**Procedural justice:** often described as a call for more equitable and inclusive decision making in energy decision-making processes and focuses on the processes and means of ameliorating injustices which have been identified (McCauley et al., 2013, Jenkins et al., 2016b).

The TCEJ holds the goal of “providing all individuals, across all areas, with safe, affordable and sustainable energy” (Jenkins et al., 2016a, Jenkins et al., 2018, McCauley et al., 2013, Heffron and McCauley, 2014, McCauley et al., 2016). This goal is repeated throughout TCEJ literature but the definitions of safe, affordable and sustainable are rarely expanded on in respect to this goal and there is currently no outline as to how distribution, recognition, and procedure relate to the attainment of this goal.

Heffron et al. (2015) describe this approach as “a conceptual framework, that seeks to identify when and where injustices in the energy sector occur and how best law and policy can respond to them” whilst McCauley (2017 p.1) describe the TCEJ as “a framework that allows us to critique the problems of the global energy system, as well as to lead us to better decision-making in future energy investments”.

Frequent claims regarding the ability of the TCEJ to produce viable normative insights and guidance are repeated throughout much of the TCEJ literature. For example, Heffron et al. (2015) claim ‘energy justice can achieve a just and equitable balance between the three dimensions of the energy trilemma [policy, economics and environment]’; Jenkins and Martiskainen (2018) claim that the approach can “be used as a means to guide ethically sound decision making”; Jenkins et al. (2018) argue that the TCEJ must be engaged with to find accord over what is ‘just, equitable and right’ in transition literature; and Jenkins et al. (2018) state ‘energy justice has emerged to conceptualize a world where all individuals, across all areas, have safe, affordable and sustainable energy that is, essentially, socially just’.

Statements such as those above, often imply that the TCEJ can produce viable normative guidance that can improve and resolve current inequities produced by and within energy systems. The purpose of this

paper is to explore the ability of the TCEJ to produce the outputs its proponents suggest it can and to then explore and develop alternate understandings of energy justice. This paper questions whether the TCEJ has presented an elaboration or exploration of how the trivalent space and its component dimensions interact to produce a viable account of justice which can meaningfully reflect the hardships and claims of those who endure energy dilemmas. In subsequent sections I argue that the TCEJ currently lacks this and as such has a limited ability to analysis and understand energy dilemmas. I offer an explanation as to how the dimensions of the trivalent space interact to create an account of justice and point to another set of theories which can further expand both the explanatory and analytical reach of energy justice frameworks.

To explore the claims of TCEJ proponents, it is necessary to observe how the underlying components of this approach – the “triumvirate of tenets” - are intended to function and interact to yield an understanding of justice. To achieve this the TCEJ is outlined in more detail and two applications of this “three pronged approach” are reviewed in detail. The methods and novelty of the outputs of these case studies are then used to critique the TCEJ’s current understanding and operationalisation of its trivalent foundation.

Following this, I revisit several key references which underpin the TCEJ literature, the work of David Schlosberg and Nancy Fraser, to review the dynamics the original trivalent conceptions of justice were intended to capture and reflect. I then outline how divergences between the TCEJ’s interpretation of the trivalent space and these earlier accounts limits the TCEJ’s ability to capture and articulate the normative complexities of energy dilemmas. Finally, the capability approach is introduced as a means of connecting and articulating trivalent conceptions of justice in reference to energy dilemmas. The capability approach is positioned as a normative framework which can contribute to theorising the intersections between energy systems and the aspects of people’s lives which they have reason to value. I conclude by proposing a redefined, capability-integrated, trivalent understanding as a useful space for developing an account of energy justice, which may itself guide and motivate the development of novel ways to explore and frame energy dilemmas, as opposed to a tool for directly framing and analysing energy dilemmas to produce normative guidance.

## 4.2 TCEJ: the “three-pronged approach” a case study review

The two case studies drawn on in the following section for more a detailed analysis, McCauley et al. (2016) and Jenkins and Martiskainen (2018), were chosen because they most closely reflect and detail the described application of the TCEJ by its proponent authors i.e. they recommended application of this “three-pronged” approach to energy systems (McCauley et al., 2013, Jenkins et al., 2016b, McCauley et al., 2016, Jenkins et al., 2018, Jenkins et al., 2016a).

This section outlines the methods and findings of McCauley et al. (2016) and Jenkins and Martiskainen (2018). Both McCauley et al. (2016) and Jenkins and Martiskainen (2018) take individual dimensions



of the TCEJ and apply them to particular aspects of their given energy dilemma (See table 6-1 & 6-2 for summaries in appendices).

McCauley et al. (2016) draw on the TCEJ categorising and framing certain issues raised during expert interviews on energy developments within the Arctic, as either distributive, recognition, or procedural issues. “We take each component of the framework in turn, identifying some key justice concerns raised in our expert interviews” who were either “conference attendees or speakers at international conferences or part of the researchers’ personal networks”. In McCauley et al. (2016) the TCEJ is positioned as a “framework for assessing the justice implication – or simply the injustice – of current policy decisions as well as making practical recommendations” and the framework is further described in line with the TCEJ’s goal, as an “analytical framework that aims to examine whether and how all individuals, across all areas can access safe, affordable and sustainable energy.”<sup>31</sup>

To illustrate the application of the TCEJ, Jenkins and Martiskainen (2018) apply these tenets to the example of fuel poverty. Jenkins and Martiskainen (2018), state this case study “explores the role of the three-tenet energy justice framework” and by doing so illustrates the “danger of failing to acknowledge justice outcomes and, conversely, what doing so may practically look like”. Jenkins and Martiskainen (2018) draw on previous work by Jenkins et al. (2016b), who propose ordering these dimensions of justice into a pseudo-procedure referring to distribution, recognition, and procedure as “what, who and how” respectively:

“we chose to present each tenet of justice in the following order: distribution, recognition, and procedure. We did so on the understanding that if injustice is to be tackled, one must (a) identify the concern – distribution, (b) identify who it affects – recognition, and only then (c) identify strategies for remediation – procedure. In essence, addressing “what, who and how” (Jenkins et al., 2016b p.177)

With the exception of Jenkin’s additional method of ordering these dimensions of justice, both case studies use the TCEJ in similar ways. The authors take points from a given source, either existing research findings or from interviews (both in the case of McCauley et al. (2016)) and categorise them into separate categories of either distributive, recognition-based, or procedural issues. For the most part these categorisations fall in line with the authors own characterisations to each respective dimension of justice. For example, Jenkins et al. (2016b) describes distributional justice<sup>32</sup> as addressing the unfair or

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<sup>31</sup> This goal is not focused on extensively here, however Wood and Roelich (2020) offer a brief critique of this goal in relation to the TCEJ’s own tenets. One pressing query is why the authors of this goal differentiate between sustainability and safety, and on which definition of sustainability they are basing this distinction.

<sup>32</sup> One issue that has not been explored or made clear in the TCEJ literature is an understanding of distributive justice. Distributive justice is a broad discourse which for a large part focuses on which goods (often abstract goods) should society concern itself with and which institutions, mechanisms and distributions should underpin these goods. There is very little discussion of this in the TCEJ literature except for a brief and occasional references of Rawls, and a short discussion of the work of Nozick, Rawls and Sen in McCauley (2016). There is even less conceptual work linking these goods to the circumstances created by outputs of energy systems.

inequitable distribution of benefits and burdens of energy systems and categorises issues of uneven energy access as a distributional issue. Similarly, Jenkins et al.'s (2016) categorisation of the stigma surrounding those who suffer fuel poverty as a recognition-based issues fall in line with their description of recognition-based issues manifesting as disrespect and stereotyping.

McCauley et al. (2016) follows a similar method. For example, McCauley et al. also describe distributional justice and the spread of and proximity to the benefits and burdens of energy systems, and thus categorise the risk of oil spills associated with shipping lanes as a matter of distributional justice. McCauley et al. (2016) summarise procedural justice as “a call for equitable procedures that engage all stakeholders in a non-discriminatory way” and thus categorise the lax involvement of Sami people's in Arctic energy and other economic projects as recognition-based issues.

Solutions to these issues rarely surpass calls to engage more in the concepts which these authors outline. Within the TCEJ, outlines of these concepts rarely exceed the superficial, and the application of these concepts to the issues these authors arise is thin. For example, there is no attempt to analyse the procedural issues they raise in a way that might result in effective procedural or participatory spaces. Rather, these issues are raised, classified as a form of injustice, and then a call is made for greater engagement or focus on that particular dimension of justice:

“it is crucial to ensure that all those who can potentially be affected by these companies' activities participate in the process of decision-making in regards to the Arctic's future... However, stakeholder engagement and social accounting currently fail to achieve the goals they were established for. Hence a new approach to ensuring sustainability of Arctic resource extraction is needed. We propose a justice—rather than simply a stakeholder-centred perspective. In other words, the inclusion, even mobilization (as suggested above), of local communities in business decision making is an insufficient expansion of stakeholder approaches such as social accounting.” McCauley et al. (2016 p.145).

Here McCauley et al. are concluding that current procedures and means on engagement in Arctic energy decision making are flawed. They then go on to conclude:

“...energy justice scholars must continue to make the case for a fair re-distribution of burdens and benefits, and not just make the case for due process in decision-making. The Finnmark controversy in the first results section underlines the extent to which indigenous peoples are subject to distributional injustices—from a due process perspective of course, but also a proximity one as an energy infrastructure that benefits all, and burdens only some.” McCauley et al. (2016 p.145).

Following the pattern I described above, McCauley et al. have outlined a conception of procedural justice, discussed issues in which situations in which these values are lacking and then have called for more engagement with these concepts. Similar patterns occur in Jenkins and Martiskainen (2018). For

example, Jenkins and Martiskainen (2018) discussion of the stigma and visibility issues surrounding fuel poverty results in the points in their concluding section:

“...government and businesses must identify those who may be vulnerable and then both ascertain and make provision for vulnerable customers through targeted subsidies, exemptions and efficiency measures. This recommendation has bearing on energy efficiency policy in particular, where questions are raised about the equity and design of its implementation. In this context, justice principles can provide guidelines for policy interventions by ensuring that energy efficiency schemes reach households in a way that meets their specific needs (Gillard *et al.*, 2017).” (Jenkins and Martiskainen, 2018 p.44)

and

“... as acknowledgement that fuel poverty goes beyond simple affordability to an outcome of living in an inefficient home, we require strong and consistent policies to upgrade the national housing stock, combined with consumer engagement programmes to enable participatory justice throughout this process. At the same time, we must be careful not to reinforce structural or social inequalities e.g. through stereotyping recruitment practices (Gillard *et al.*, 2017).” (Jenkins and Martiskainen, 2018 p.44)

Jenkins and Martiskainen (2018) also offer broader, more general, conclusions as well such as “that issues of energy justice emerge, where inattention to social justice issues can cause injustices, or via their inclusion can provide a means to solve them” and argue for “for greater engagement with the energy justice approach in both academia and in practice, where it can be used as a means to guide ethically sound decision-making”.

As with preceding examples, the process of defining a dimension of justice, categorising an issue as representing a lack of attention to said dimension, and then calling for a greater focus a certain type of justice plays out again. It becomes evident that this pattern recurrently underpins the application of the TCEJ in both the cases of Jenkins and Martiskainen (2018) and McCauley et al. (2016).

The most substantial findings and conclusions from these case studies appear to be primarily drawn from a synthesis of other literature, as opposed to the components of the TCEJ creating new frames for analysis. This is not to say the conclusions of these studies are false, but rather that applying the TCEJ does not appear to have substantially contributed to their findings. For example, when McCauley et al. (2016) conclude that the burden of risk associated with shipping is disproportionately borne by local Arctic communities, it is not clear how distributive justice theory contributed to this conclusion – even if one can rightly classify this as a form of maldistribution.

The problem here is that classifying something as a maldistribution on its own does not then provide a solution. It might be an important initial step but more substantial engagement with a specific distributive theory would be necessary to analyse an energy dilemma with the intent of producing

normative and policy guidance based on justice theory – as the TCEJ aims to do (See Wood and Roelich, 2020).<sup>33</sup> In other words, the level of exploration and detail provided within TCEJ literature is only enough to broadly classify a certain issue as one of distribution, recognition, or procedure.

The point here is that the TCEJ in its current form, with this mode of application, does not offer an effective space in which to analyse energy dilemmas to produce genuinely novel insights and normative advice. The following sections of this paper posit that the TCEJ's current mode of application is hampered in part because of its restricted interpretation of the trivalent space. The following sections of this paper revisit some key references underpinning the TCEJ to explain the approach's current limitations.

In particular, the following sections highlight two key aspects of the TCEJ which currently limit its explanatory power. Firstly, I will illustrate how the TCEJ's interpretation of the trivalent space impedes the TCEJ's ability to view injustice as resulting from complex interconnections between distribution, recognition, and procedure.

Secondly, I will illustrate that the TCEJ lacks a means of articulating how an energy dilemma impacts or relates to a particular set of values. In other words, I will illustrate that categorising different dimensions of injustice, as the TCEJ does, is not the same as describing why or how an energy dilemma relates to certain values in such a way that we might describe it as an injustice.

In response to this gap, I point towards a growing collection of scholarship which frames energy dilemmas in terms of their impact on capability, as a means of understanding these dilemmas in a normative frame. I outline how the capability approach can be used to integrate and better understand the interrelations between distribution, recognition, and procedure. Importantly, this integration is not initially aiming towards the same ends as the TCEJ of finding identifying and responding to injustice through policy, but rather to attain a simpler initial step of providing concepts which can more accurately and meaningfully reflect problems stemming from energy systems. I argue it is useful to refine this first step if we are to produce viable normative and policy guidance.

### 4.3 Revisiting the trivalent space

There are several examples of work in which a trivalent conception of justice has been used effectively to explore such dilemmas and frame certain movements. Perhaps the most well-known of these is Schlosberg's (2009) account of environmental justice. This section outlines how the TCEJ's own interpretation of this trivalent space diverges substantially from earlier conceptions. I then outline how

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<sup>33</sup> Another approach to energy justice, that of Sovacool & Dworkin (2014) Sovacool, B. K. & Dworkin, M. H. 2014. *Global energy justice*, Cambridge University Press., provide illustrate multiple examples as to how justice theory can be drawn on in this way.

the TCEJ's reliance on its own divergent interpretation is limiting its ability to explain and discuss energy dilemmas in terms of justice.

A frequent and key reference in early conceptual TCEJ literature is Schlosberg's account of a trivalent approach to environmental justice (Schlosberg, 2009, Schlosberg, 2003, Schlosberg, 2013). The trivalent account of environmental justice has been drawn on and developed over the past decade including in climate and energy related discourses (for examples see Walker, 2009, Holifield et al., 2009, Walker, 2012, Sze and London, 2008, Gillard et al., 2017, Bulkeley et al., 2014, Reed and George, 2011). Underlying Schlosberg's conception are three interlinking and overlapping conceptions of justice, distributive, procedural, and recognition, which make up a "trivalent space". These dimensions of justice are drawn on (loosely<sup>34</sup>) within the TCEJ, but their adoption, interpretation, and elaboration differ significantly from that of Schlosberg's.<sup>35</sup> Briefly describing key divergences between the structure and purpose of Schlosberg's conception of environmental justice and the TCEJ's own interpretation of this conception can go some way in illuminating the current limitations of the TCEJ. This serves two purposes, firstly it creates a space to compare and critique the TCEJ's interpretation and use of a trivalent account of justice. Second, it points the necessary expansions and changes that rectify these limitations.

A key point of comparison is the purpose the trivalent space serves in the TCEJ and in Schlosberg's account of environmental justice. Schlosberg's aim was to construct a broad enough conception of justice to articulate and capture the disparate calls for justice arising in diverse, activist-led environmental movements. Schlosberg's motivation was to develop a global conception of environmental justice which embodied the demands of these movements because existing accounts of environmental justice were inadequate and primarily based on distributive accounts of justice. This is noteworthy, because unlike the TCEJ, this initial trivalent account of justice was not primarily used as a framework for analysing particular situations but as a means of unifying a broad and diverse movement "the environmental justice movement demonstrates the power of a unity without uniformity as it illustrates environmental justice on so many dimensions simultaneously" (Schlosberg, 2004 p.535).

Schlosberg's intention was then to outline recurrent claims to justice in a broad array of environmental movements, with the aim of outlining how certain democratic and institutional transformations could institutionalise a space for multiple conceptions of justice to be "shared, heard, understood and implemented" (Schlosberg, 2009). The TCEJ's use of the trivalent space is partially converse to this. Instead of using these dimensions to articulate the recurrent manifest injustices, the TCEJ aims to

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<sup>34</sup> The term "loosely" is used here, because although the structure of the TCEJ mirrors a trivalent conception of justice very little discussion as to the function and purpose of this space are discussed in TCEJ literature.

<sup>35</sup> Wood and Roelich (2020) illustrate tensions between the TCEJ's strategic goals and critique of environmental justice, and adoption of Schlosberg's trivalent account of environmental justice, which they argue limits the ability of the approach in creating a space to explore and understand energy dilemmas.

directly apply these dimensions of justice to energy systems via the aforementioned “three-pronged” approach. This initial description can be articulated as one of description versus application. Schlosberg’s account of environmental justice results from describing different types of claims to justice in the trivalent space, whilst the TCEJ seeks to apply the trivalent space.

Schlosberg’s conception was underpinned by the language and characterisations of justice that environmental movements were using. Themes and language which resonated with ideas of distribution, recognition, and procedure arose frequently when these groups and movements articulated their grievances and demands. Throughout Schlosberg’s work, he outlines a broad academic landscape in which the connections and relationships between these conceptions of justice are articulated and continually contested. One important dynamic throughout Schlosberg’s work is that the interactions and relationships between these conceptions of justice are intimate and interdependent, with each affecting the other (See Walker (2012) p.65 for an informative illustration of these relationships). A clear example of this interdependency is found when Schlosberg (2009) describes how distributive, procedural, and recognition-based justice are being articulated in indigenous led environmental movements but does not discuss procedural calls separately in his summary because he ‘simply could not find such calls that were distinct from the demands for recognition’. These dynamics are under-conceptualised within almost all conceptual literature on the TCEJ, with proponents of the approach treating and applying each dimension of justice individually to various energy dilemmas (McCauley et al., 2013, Heffron and McCauley, 2014, Jenkins et al., 2014, Jenkins et al., 2016b, Heffron and McCauley, 2017, Jenkins et al., 2017a, Jenkins, 2018).

A key reference for Schlosberg’s own application of the trivalent space is the work of Nancy Fraser (Fraser, 1997, Fraser, 1995). Fraser, also arises as a key reference within the TCEJ literature during summaries of recognition-based justice (Jenkins et al., 2016b, McCauley et al., 2013).<sup>36</sup>

In much of Schlosberg’s work, Fraser is cited as providing a critique on the limitations of viewing social justice as purely a matter of distributive justice, citing Fraser’s arguments that recognition offers explanations as to why such maldistributions exist in the first place (Schlosberg, 2009, Fraser, 1997, Fraser, 1995, Fraser, 2000). A key point here is that Fraser’s work, although most widely noted for its content on recognition (in the TCEJ scholarship at least), focuses on broadening a conception of social justice to one which looks beyond distribution to incorporate dimensions of justice which underpin and sustain maldistributions<sup>37</sup>.

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<sup>36</sup> Young (1990) and Honneth (1996) are also key references in Schlosberg’s discussion of recognition, which we do not outline in this paper, but are worth exploring further for any researcher interested in understanding the roots of the trivalent approach. (Schlosberg (2009) offers a concise and insightful exploration).

<sup>37</sup> The work of Young is cited in Jenkins et al. (2017b) but in reference to Young’s work on responsibility, not recognition.

Within the TCEJ such descriptions of Fraser's work are almost non-existent (Fraser's work is drawn on briefly in a distributive light when Jenkins et al. (2016a) cites Fraser (1996), but this is to link distributive justice to the topic of political economy). This is a key point in explaining why the TCEJ's use of the trivalent space as a means of analysing energy dilemmas is currently limited. The TCEJ's tendency to define and isolate each justice dimension, without further effort to integrate these tenets, limits the TCEJ's ability to capture the intimate linkages between recognition, procedure, and distribution. This is both the case for the more general TCEJ approach of categorising certain issues as either distributive, recognition-based, or procedural and the "what, who and how" approach of Jenkins et al. (2016b).<sup>38</sup>

These interdependencies can be partially illustrated by Fraser (2009). Fraser (2009) outlines the complex interdependencies between recognition and distribution, using the example of welfare reform, a redistributive policy which can stigmatize its recipients as "deviants and scroungers". She goes on to argue that such redistributive policies "have misrecognition effects when background patterns of cultural value skew the meaning of economic reforms". Fraser gives the example of the devaluation of single female caregivers, through the receipt of support, being cast as 'getting something for nothing'. She argues that such redistributive policy cannot succeed unless it is in conjunction with a push for recognition, concluding 'in short, *no redistribution without recognition*' (Fraser, 2009 p. 85).

This argument illustrates the importance of both distributive and recognition-based justice in resolving social issues without creating new ones. More importantly, it illustrates how multiple dimensions of justice work dynamically and simultaneously to explain and frame a particular circumstance. Fraser (2009 p.35) also notes that procedure does not necessarily follow recognition but often facilitates it, stating 'an adequate account of the justification of recognition claims needs to incorporate a procedural dimension'. If the justification of recognition-based claims requires a procedural dimension, then it is not clear why procedure would occur only after a recognition claim to justice has been made. Furthermore, considering the now apparent intersection between recognition and distribution, procedure also appears necessary to ensure actions are taken to properly identify distributive injustices.<sup>39</sup> In other words, procedure can be required to both recognize and ameliorate distributive and recognition-based issues.

Once the components of the trivalent space are viewed in this light, a picture starts to emerge in which they work simultaneously to characterise a complex set of circumstances or situations. Based on the ordering provided in Jenkins et al. (2016), identifying a concern can only result in a distributive issue

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<sup>38</sup> Jenkins et al. (2020) recently repeat this structure when integrating energy justice with value sensitive design, responsible research and innovation approaches.

<sup>39</sup> Schlosberg similarly notes that within environmental justice, the discourse on which energy justice is closely based, discussing one aspect of justice will lead to the discussion of others, and that they cannot be discussed in isolation.

and recognition is confined to who this issue affects (as opposed to mal-recognition being seen as an issue in itself). Subsequently procedure is only utilized as a term for remediation, which is the correction of mal-distributions – as opposed to a space for facilitating recognition or solely acknowledging the intrinsic worth of engaging in procedural spaces.

Fraser (1995) makes clear that recognition-based issues can be as harmful as material distributive issues. It therefore seems problematic that the TCEJ requires distributive issues to first be identified before recognition-based aspects of justice are addressed. This is not to say that the TCEJ does not value recognition based justice. Jenkins et al. (2016b) clearly outline a number of prominent recognition issues which relate to energy, such as the non-recognition issues faced by those in fuel poverty, and the stigma surrounding communities who campaign against the placement of wind energy projects near their homes. Rather, it is a problem with the ordering and separation of these dimensions of justice that frequently occurs within TCEJ which obscures their interdependencies.

Distribution, procedure, and recognition are useful concepts to elaborate on individually to then piece together a more robust explanation as to what the demands and calls for justice communities and people might be making. However, it is the complex interrelations that provide depth to this picture of justice.

TCEJ literature can often end up implicitly pointing to the links between these dimensions of justice, but the approaches' own conceptual structure does not enable for this to be drawn out further. For example, Jenkins and Martiskainen (2018) discuss a range of impacts of fuel poverty (i.e. living in cold and damp homes and the associated health and education problems) in their section on recognition. They cite Sovacool (2015), who argues that the maldistributions underpinning fuel poverty result in fuel poor households having neither the time nor the means to participate in energy decision-making (i.e. procedures) that might improve their circumstances. There is a clear link here between the distributional impacts of fuel poverty and its connection to recognition, but the way the TCEJ is structured and applied does not allow for this dynamic to be captured and developed when applied to energy dilemmas.

Here it is interesting to note the work of Walker and Day (2012) who also drew on a trivalent conception of justice to analyse fuel poverty, but did so before the banner of energy justice had firmly taken root in academic discourse. Importantly Walker and Day (2012) offer an explanation of how these three dimensions interact to produce an understanding of injustice. They describe their understanding of justice as:

“distributional injustice positioned within a wider framing of lack of recognition and procedural injustice... each form of injustice is interconnected with each of the others. In this way we can see lack of recognition and lack of procedural justice as wrong in themselves, as interconnected and as underpinning the ongoing production of distributional inequalities”



Similarly, Gillard et al. (2017) draws on Walker and Day (2012) to utilise the trivalent space in a similar way, outlining the “interrelatedness” of distribution, recognition and procedure.

More recently Velasco Herrejon and Bauwens (2020) have added significant weight to this interrelated narrative with their study on community acceptance of wind energy in Mexico. Velasco Herrejon and Bauwens (2020) found that although participants more frequently expressed distributive concerns regarding wind energy, these were linked in turn to procedural and then recognition-based concerns. This lead Velasco Herrejon and Bauwens (2020) to propose a nested-structure of the trivalent space in which distribution is embedded in procedure, and procedure embedded in recognition. In this paper I do not propose ordering these dimensions, but the fact that Velasco Herrejon and Bauwens (2020) observe such structure serves to illustrate the intimate connections between these dimensions.

Interestingly, Walker and Day (2012) and Gillard et al. (2017) are both cited in various TCEJ literature but the interconnections of the trivalent space have been scarcely discussed in the core TCEJ literature since its inception in McCauley et al. (2013), who notes “these three pillars of energy justice are interlinked and there are many overlapping issues”, without any further explanation. Without acknowledging the interaction of these dimensions of justice, it becomes difficult to fully capture the complex situations which energy dilemmas create. Energy dilemmas do not produce separate distributive, recognition, and procedural issues. Rather, they produce complex sets of circumstances which impact people’s lives, certain components of which might be described as one of these three dimensions – but overall are an amalgamation of the three.

So far, this paper has established that the TCEJ’s interpretation of the trivalent space limits the approach to categorising different aspects of energy dilemmas, as opposed to explaining how these aspects combine to produce what we might call an injustice. Distributive, recognition-based, and procedural justice do not describe specific values but more general and broad dynamics in which we can understand injustice. On their own, they do not offer a means of exploring how energy dilemmas relate to or impact the things people and communities value. The following sections present the capabilities approach as plausible means of articulating how the trivalent space relates to the valuable aspects of people’s and communities’ lives. In doing so, the capabilities approach provides a means of detailing the things and person needs to do or be in order to be a recipient of distributive, procedural, and recognition-based justice.<sup>40</sup> It is important to note that this does not let us jump to providing normative guidance and policy advice, but rather provides an pertinent initial step towards better understanding the ways in which energy dilemmas can impact the valuable aspects of a person’s life.

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<sup>40</sup> It is worth noting here that TCEJ literature do occasionally cite certain philosophies of justice. For example, McCauley et al. (2016), describe both Rawls’ *A theory of justice* and Amartya Sen’s capability approach but never actually apply the concepts used in these theories to energy dilemmas. This is similarly the case for McCauley et al. (2012) and Jenkins et al. (2016b).

## 4.4 Capabilities

The capabilities approach revolves around two main concepts, ‘capabilities’ and ‘functionings’. Nussbaum (2011) summarises capabilities as ‘a kind of freedom: the substantive freedom to achieve alternative functioning combinations’. ‘Functionings’ can be described as states of being or doing (Anderson, 1999). The approach uses these concepts to articulate two normative claims:

1. Freedom to achieve well-being is of the highest moral importance.
2. Freedom to achieve well-being should be understood as opportunities in terms of capabilities, or ‘valued functionings’.

(Nussbaum, 2001, Sen, 1992)

The capabilities approach concerns itself with what a person is able to do and be, instead of focusing on a specific distribution of resources, as many distributive theories do (Sen, 1979). Sen argued that primary goods do not take account of the differences between people, instead he argued, we should focus on what people are able to do and be. Sen illustrates this with the example of people with disabilities being less able to convert a set amount of goods into the same level of capability than that of a person without a disability (Sen, 1979).

Nussbaum’s and Sen’s conceptions of capabilities differ in many respects.<sup>41</sup> By Sen’s account capabilities are to be outlined through deliberative processes which occur within societies, whereby a society outlines the functionings that they agree each person should be able to attain (Sen, 2001). Nussbaum’s approach differs, in that she offers a predefined and universal list of capabilities (although she notes this list can be expanded and adapted), of which any state should ensure each citizen attains a minimum level (Nussbaum, 2001). These include the capabilities of life; bodily health & integrity; sense, imagination and thought; emotions; practical reason; affiliation; other species; play; and control over one’s environment (Nussbaum, 2001). By Nussbaum’s account, any level below this minimum constitutes an injustice. Nussbaum refers to her conception as ‘a partial and minimum account of social justice’ – it can inform on the minimum threshold levels of capability but does not inform how society should act after these thresholds are attained.

More recent contributions to the capability approach have sought to expand this frontier, developing more expansive capability based theories of justice that inform on how society should respond to or classify maldistributions of capability (Axelsen and Nielsen, 2015, Nielsen et al., 2017), whilst others have expanded the approach to issues of excess, introducing ideas of capability ceilings and limits. For

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<sup>41</sup> Robeyns (2016a) points out that there are multiple conceptions of the capabilities approach that exist beyond that of Sen’s and Nussbaum’s. However, as we explain, we find Nussbaum’s approach a particular useful and clear framework from which to assess energy dilemmas. However, this does not limit us to drawing on various other aspects and accounts of the capabilities.

example, Robeyns (2016b), introduces the idea that there is reason to limit certain capabilities in cases of gross inequality. Holland (2008) introduced a similar idea of ceilings on the certain capabilities which exceed a threshold through practices which limit the capabilities of others. For example, prohibiting the use of private aviation, and therefore capping a person's mobility, because of its excessive contribution to climate change which is a major source of capability deprivation itself.

#### 4.5 Capabilities and energy systems

A key use of the capabilities approach in relation to ideas of energy justice is that it can act as a frame through which to judge the impacts of energy systems on people and communities (Day et al., 2016, Wood and Roelich, 2019, Velasco Herrejon and Bauwens, 2020). In contemporary energy scholarship these impacts tend to be discussed in either terms of consumption or production. However a there has been a push in recent energy scholarship, the TCEJ and broader energy justice discourse, is the need to transcend the conceptual separation of energy production and consumption, and instead move to a view where these are seen as interdependent (Geels, 2010, Winskel, 2018, Jenkins et al., 2014, Sovacool et al., 2015) (Also see Bouzarovski and Simcock (2017), Wood and Roelich (2019), and table 4-1 below). A capabilities-based approach can help conceptualise these linkages.

The capabilities approach has been employed as a means of articulating the diverse array of demands and grievances which arise within the disparate environmental justice movement – many of which result from the production and consumption of energy (Schlosberg, 2012, Schlosberg, 2013) (also see Walker (2012) p.2 for a list of environmental justice issues, many of which relate to energy systems). Holland (2014) use capabilities to articulate the impacts of a range of environmental issues and then to inform on the procedural spaces which can be used to better understand and respond to these issues. Day et al. (2016) conceptualise and define energy poverty in terms of capabilities, revealing a number of insights previously obscured by contemporary definitions. Day et al. (2016) also illustrate that access can be disrupted by changes elsewhere within an energy system, therefore illustrating this linkage between production and consumption. Wood and Roelich (2019) use the metric of capability to expand this work to highlight and articulate the relationships and tensions between capability attained from fossil fuel derived energy and climate change mitigation. Hillerbrand (2018) articulate a range of energy dilemmas in terms of capabilities producing a critique of the seventh sustainable development goal of providing clean and affordable energy for all, arguing that normative visions of energy systems are often over simplified as “right or wrong” and are instead highly dependent on context. Hillerbrand (2018) then posits that capability provides a context sensitive metric through which to normatively assess these systems. In sum a core use of capabilities is that it acts as a frame through which to judge the impacts of energy systems on the things people and communities' value.

Transport provides another example of energy services which support a range of capabilities, most obvious is that of bodily integrity and being able to move freely from place to place (Beyazit, 2011).

This mobility can underpin other capabilities, for example accessing places of education and healthcare, therefore supporting capabilities of bodily health, education and the ability reason (Beyazit, 2011, Wood and Roelich, 2019). However, the combustion of fossil fuels to attain this mobility can be a source of capability deprivation through contributing to on-going climate change and air pollution (Wood and Roelich, 2019). This again illustrates the relationships between the production and consumption of energy.

*Table 4-1 Examples of energy's relation to capability through individual and overlapping issues of production and consumption*

	Consumption	Production
Relation to capability	Access relates to the attainment of capability i.e. how and which energy services contribute and enable key capabilities which bring value to our lives.	The unintended products of energy systems e.g. localised pollution, climate change, labour issues, mass-displacement, are sources of capability deprivation.
Whole system interconnections	Consumption and production issues interact to create unique circumstances. Access to certain types of energy can offer alleviation from existing energy dilemmas. For example, the supply of cleaner burning gas can resolve the health impacts suffered by those who cook indoors using solid fuels (Smith, 2006). Another example might be how access to energy through mobility services can provide safe means to escape slow-violence that can occur in extractive processes of fossil fuels (see Healy et al. (2019)). The identification of such connections can help transcend the conceptual separation between aspects of energy production and consumption that Bouzarovski and Simcock (2017) refer to as the production-consumption binary. Bouzarovski and Simcock (2017) for example, note that a change in the way energy is produced or transmitted can create “end-use” problems such as fuel poverty.	

#### 4.6 Capability, energy, and trivalent conceptions of justice

Clearly, both issues of consumption and production can be viewed constructively through a capability lens to link these issues more broadly to their diverse impacts on the quality of people's lives. The approach's ability to contribute to broader energy justice discourse is therefore apparent, as is the approach's affinity for the creation of procedural spaces in which people can better articulate how complex energy systems interact with their lives.

The capability approach evidently already provides an apt space in which to articulate how people and their values can relate to the broader impacts of energy systems. These same characteristics however can capture how ideas of distribution, procedure, and recognition are all intimately tied with the outcomes and quality of people's lives. Importantly the idea of capability can illustrate and capture how and why a trivalent conception of justice is worth maintaining as a core set of concepts in a space for exploring energy dilemmas. Similar to Velasco Herrejon and Bauwens (2020), this paper argues that the capabilities approach offers a more effective means of articulating and understanding the context specific impact of energy dilemmas through providing a means to better articulate the connections between distributive, recognition-based, and procedural justice.

The primary purpose of the capability approach here then is to provide the language and concepts necessary to illustrate how a trivalent conception of justice relates to people's lives. Individual capabilities can capture various aspects of these dimensions whilst attributing them to the overall well-being of a person or group. Viewing each aspect of these dimensions as fundamental to a person's or community's set of capabilities, helps to make sense of the trivalent space's ability to capture and understand a person's experience of "injustices". For example, the maldistribution of energy access can curtail a range of capabilities (Day et al., 2016), the deprivation of certain social capabilities can lead to recognition issues such as stigma, such stigma can impede an person's capability to engage in procedures which might help improve their situation (Middlemiss et al., 2019, Sovacool, 2015). Furthermore, integrating the capability space with a trivalent conception of justice illustrates how closely intertwined these dimensions of justice are, revealing how they interact to form a more complete space in which to understand the grievances of those who suffer in relation to energy systems.

Focusing on how people's ability to convert certain situations and resources into valuable functionings, capability acts as a socially, materially, and spatially sensitive concept through which to frame the intersection between energy dilemmas and people's lives. The definitions of distribution, recognition, and procedure in the TCEJ yield very little insight as to what it is people care about or value, or what things they need to achieve these. The upside of this, is that on their own these broad dimensions of justice do not become overly prescriptive (they do a little if combined with the assumption that everyone wants safe, affordable, and sustainable energy<sup>42</sup>), they leave a broad space to fill with a diversity of ideas and conceptions of what "justice" is. However, this is simultaneously a limitation, given that these dimensions and energy discourse in general holds some normative weight it is not clear why we should leave this space entirely empty. In broader energy justice discourse, that is energy justice work that does not necessarily revolve around discrete conceptions of energy justice, there is a strong assertion and normative intuition that the production and consumption of energy effect people in both positive and negative ways (Bickerstaff et al., 2013, Demski et al., 2019, Fuller and Bulkeley, 2013, Healy et al.,

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<sup>42</sup> See Hillerbrand (2018) for a critical discussion on the seventh sustainable development goal, which closely mirrors the goal of the TCEJ.

2019, Simcock and Mullen, 2016, Snell et al., 2015, Sovacool et al., 2014, Sovacool et al., 2017, Sovacool and Dworkin, 2015, Sovacool and Dworkin, 2014). The capabilities approach provides a means of explaining and further exploring this intuition.

When connected to well-being and capabilities, distribution, recognition, and procedure all take on richer meanings. Mal-recognition, non-recognition and the concepts of stigma and hardships that accompany these can be viewed as not only impacting the distribution of adequate energy access but also as phenomena which directly degrade a person's well-being – they become intrinsically important. Whilst stigma and non-recognition curtail the ability of a person to participate in society, they can also directly curtail a person's self-respect. In turn, this might impede their self-worth and engagement in political procedures or even their engagements with others in social situations – impacting the capabilities of affiliation and control over one's environment.

Procedural justice and participation, through a capabilities lens, also become intrinsic components of a person's own well-being and simultaneously provides an account of the instrumental functionings a person needs in order to participate in a range of forums. Both Sen's and Nussbaum's account of capabilities places a heavy focus on participation and deliberation (Nussbaum, 2011). In more applied arenas, the concept of capability has underpinned and structured a range of participatory processes to enable communities, groups and people to articulate and map their values and interests in relation to certain systems and structures (Biggeri et al., 2006, Greco et al., 2015, Walker, 2018, Velasco Herrejon and Bauwens, 2020). Where contemporary modes of participation are based on antiquated conceptions of people as rational and informed consumers (see Chilvers and Pallett (2018)) capabilities offers a more plausible starting point in which personal and community capabilities can be self-defined and can create a more accurate representation of a person's or community's values. Participatory procedures can then be centred around these conceptions so that both procedures and outcomes are sensitive to the varying level of resources and information that people may require to achieve the same outcomes and understandings. Brand-Correa and Steinberger (2017) illustrate such possibilities using a well-being centric framework as the foundation of a deliberative approach to explore the relationship and potential decoupling of energy use and human needs.

Distribution becomes a far richer concept. The maldistributions of energy systems are no longer viewed as the physical location of energy systems and accompanying problems or the distribution of issues associated with inadequate energy access i.e. fuel and energy poverty. Instead, these maldistributions become tied to webs of interdependent capabilities, providing a framework to understand the impacts energy systems have on people's lives and offering the explanatory power the TCEJ currently lacks. We might expect to see tensions between certain goods-based distributive theories, such as those in Rawls (1971) (and other distributive theories) and the capabilities approach. We therefore might also expect such tensions to arise when integrating the capabilities approach into a trivalent conception of

energy justice, given the TCEJs focus on the distribution of the benefits and burdens of energy systems. However, it would be useful to see the capabilities approach as helping to further understanding the impacts of these distributions as opposed to challenging or trying to displace the distributive dimension of justice. This is an area in which the TCEJ would benefit from further clarification, it is not entirely clear whether does the distributive dimension of the TCEJ speak to broader ideas of distributive justice or primarily the geographic spread of energy dilemmas. Interestingly Jenkins et al. (2020b) also notes this issue but does not seek to clarify either way.

In sum a capability integrated trivalent space can act a viable starting point from which to develop a deeper understanding of the intersection between energy dilemmas and the things we value.

#### 4.7 Conclusions:

The TCEJ has illustrated its use as a structure through which to organise the findings of case studies and the findings of existing academic outputs. To some extent, the TCEJ has shown an ability to prompt researchers on areas and values which are currently lacking or under-represented in broader energy discourses. However, many of the conclusions that can be drawn from the applications of TCEJ explored here are drawn from a synthesis of empirical evidence as opposed to the application of justice theory and framings.

The TCEJ's current level of engagement with justice theory appears to act more as a motivation to investigate certain pre-defined normative issues as opposed to a means of producing normative guidance and change. In this respect the TCEJ's power as an analytical tool and its ability to "lead us to better decision-making in future energy investments"; "achieve a just and equitable balance between the three dimensions of the energy trilemma [policy, economics and environment]"; "be used as a means to guide ethically sound decision making"; to find accord over what is "just, equitable and right" in transition literature; and "conceptualize a world where all individuals, across all areas, have safe, affordable and sustainable energy that is, essentially, socially just" has been shown to be limited by its own interpretation of the trivalent account of justice and lack of concepts through which to understand and articulate the impacts of energy dilemmas.

The TCEJ's interpretation of the trivalent space, combined with limited appeal or exploration of other justice theory limits the approach's ability to capture and inform on the complex dynamics which arise in the intersection between energy dilemmas and people's live.

As an extension of environmental justice theory, a trivalent conception of justice can serve as a useful starting point to describe the demands being made by those who are enduring certain energy dilemmas. In other words, a trivalent space can serve as a useful starting point to develop an account of energy justice – a way of describing the dynamics and themes which arise when certain groups or movements articulate their experiences of energy dilemmas. However, for the TCEJ to derive normative or practical

guidance from ideas of justice requires more substantial engagement with theory. Research on public participation and democratic procedures surrounding energy systems presents plausible avenues to operationalise and apply certain normative approaches in the procedural realm (Pallett et al., 2019, Pallett, 2018, Pallett, 2019, Chilvers et al., 2018, Chilvers and Pallett, 2018). Such research agendas illuminate the problematic aspects of real-life procedures that contribute to their inefficacy. They can point to means of ameliorating these issues through reimagining and then reshaping these processes, as opposed to making broad calls for “more equitable” procedures and “greater engagement”.

I have suggested a set changes of approaches and changes that can develop a more effective space in which to understand and explore energy dilemmas: a more detailed interconnected trivalent account of justice articulated using a capabilities based approach to understanding energy dilemmas. In concluding it is important to note how these additions to the justice scholarship arose. The theory Schlosberg (2009 p.45) draws on to outline his account of environmental justice was informed and shaped by reflections on a range of social movements “civil rights, women’s, multicultural, gay and lesbian, sustainable development, anti-neoliberal and many more”. Listening to and understanding these movements has impacted our current understanding of the term “justice” and has explicate many previously concealed dynamics which perpetuate injustice (Schlosberg, 2009). Observing interactions between energy systems, communities and people’s values may also eventually change how we theorise justice as the need for new concepts arises to capture previously obscured dynamics. In other words, there might not yet be an adequate set of conceptual tools that can fully capture the intersection between energy and our values.

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## Chapter 5 Conclusion and discussion:

The overarching aim of this thesis was to assess and then develop the extent to which moral theory informs our understanding of the relationships between energy and the things we value. Two lines of enquiry stemmed from this over-arching aim. One focused on existing approaches to energy justice asking two questions:

1. What purpose moral theory is serving within existing approaches to energy justice?
2. Are approaches to energy justice able to derive genuinely novel guidance from the moral theory they cite?

The other focused on relating energy dilemmas to a range of moral theory and concepts. This line of enquiry also centred on two questions:

3. How can moral theory be drawn on to describe and explore energy dilemmas?
4. How can moral theory be drawn on to effectively develop ideas of energy justice?

These lines of enquiry were closely linked with the latter building the former. A crucial component was to assess the extent to which current accounts of energy justice have been successful in integrating moral theory. By this I mean, the extent to which the integration of moral theory has shaped findings, outputs, and ideas of “energy justice” in energy justice scholarship. If this has been too limited, as has been argued in this thesis, the question arises as to what the integration and appeal to moral theory has been used for or achieved. Answering this question helped set the framing for the second line of enquiry.

This chapter begins by drawing out the core themes, findings, and contributions of chapters two, three, and four. The proceeding sections summarise and discuss key issues regarding current approaches to energy justice which arose within those chapters. These are followed by a discussion of the limitations of this thesis and these limitations are drawn on to motivate the final sections which focus on two developments pertinent to the future impact of energy justice discourse: conceptual and procedural.

These conceptual and procedural developments are closely intertwined and are discussed in tandem. These sections explore and discuss the potential avenues for the further development of energy justice and present avenues for developing the foundational account of energy justice set out in this thesis. These sections point towards where moral theory might be applied effectively in the future, with a shift of focus to the procedural realm. This section’s discussion is partly motivated by two contributions to energy justice scholarship I have been unable to discuss thus far, Galvin (2019) and Pellegrini et al, (2020). The final section offers conclusions and highlights the importance of justifying and substantiating the goals and methods of energy justice discourse.

## 5.1 Summary:

This thesis revolved around three core outputs:

### 5.1.1 Chapter 2 Tensions, capabilities, and justice in climate change mitigation of fossil fuels

Chapter two illustrated that the impacts of environmental change and access to energy systems could be framed and articulated using the concept of capability. This chapter corresponded most closely to the second set of research questions in that it explored the potential of certain moral and political concepts in framing and explicating energy dilemmas. Using the example of fossil fuel dependence, climate change, and climate change mitigation, this chapter conceptualised how tension and trade-offs can come to exist between energy (and environmental) dilemmas and measures proposed to ameliorate these.

Incorporating aspects of energy systems traditionally viewed as either production or consumption with the same metric can also be viewed as responding to calls in energy justice discourse to move beyond what Bouzarovski and Simcock (2017) refer to as the “production and consumption binary”. Using the same well-being framing to articulate why these issues are of normative import also resonates with a recurring theme throughout this thesis - that many, if not all our actions in energy research have a normative end, and that once we explore what these ends are we may often find they are the same. This logic therefore sets the foundation for another component of this thesis: that a viable and effective way to articulate these ends is through the language of capability and well-being.

The purpose of a capabilities conception of well-being is two-fold. First, and as illustrated in this chapter, the capability approach provides a set of concepts which can be readily expanded to incorporate and articulate the impacts of complex systems and change on the things people and communities hold valuable i.e. it provides a language through which to connect abstract sets of values to “concrete” structures. Second, and closely intertwined with the first, accounts of capabilities set out a normative logic as to why capability should be morally important and by some accounts can act as a metric of justice. This is achieved through drawing on the threshold-based partial theory of justice set out in Nussbaum (2001). This latter point forms an important first step in developing more viable accounts of energy justice – a key aim of this thesis - in that this brings the production-consumption binary into the domain of a partial theory of justice. This chapter illustrates that energy production, the accompanying environmental change, and energy system transformations can all deprive people of threshold levels of key capabilities and why such circumstances can be viewed as unjust.

This chapter served as a partial foundation for both proceeding chapters. With respect to the third chapter, this chapter serves as an example of using moral theory to frame and analyse an energy dilemma with the ends of producing a richer understanding of the dilemmas and relevant normative

guidance. In respect to chapter four, this chapter motivates the integration of capabilities into an account of energy justice.

### 5.1.2 Chapter 3: Substantiating Energy Justice: creating a space to understand energy dilemmas

This chapter initially responded to the first set of research questions by critically reviewing current approaches to energy justice, “the triumvirate approach” and the “principled approach” based on their overarching goals, strategies for achieving these goals, and their philosophical foundations. A key point of comparison between these components was the use of moral philosophy and the normative assumptions embedded in the respective approaches goals and strategies (the next chapter showed that the former was particularly underdeveloped for the TCEJ). In other words this chapter asked *where does the use of moral theory start and end in these approaches?*

Asking this question was not only key to illustrating and critiquing these approaches’ use of moral theory but also in highlighting the extent to which their proponents incorporate values prescribed by moral theory into their broader agendas. For both major approaches reviewed, the TCEJ and the principled approach, cut-offs, and issues with the application of justice were found (these are discussed in more detail in the key findings). A key issue facing the TCEJ was the inherent tensions between its own moral grounding, its critique of preceding environmental justice discourse, and the subsequent advocacy for top-down approaches to resolving energy dilemmas. A key issue regarding the principled approach was the absence of clear reasoning as to why we should use one set of moral ideas to frame energy dilemmas over another. In the absence of this reasoning the selection of moral theory risks being perceived as selected based on the authors own normative intuitions. However, it was more difficult to be critical of the principled approach given it aims to and successfully produces a discrete output i.e. the normative checklist and in general makes more refined claims than its TCEJ counterpart.

Following this review the chapter turned to the second line of enquiry on the role of moral theory in exploring energy dilemmas and developing ideas of energy justice. The remainder of this chapter set out a framework outlined a pluralistic approach to framing and analysing energy dilemmas in reference to broader sets of social and political concepts which moral theories describe. This framework illustrated that different moral theories will paint substantially different pictures of the same dilemmas and therefore offer different guidance. The framework also outlined a suitable and viable means of using theory as an analytical tool, and in some cases as part of a space in which to better understand those who endure energy dilemmas, without necessarily specifying a set of moral prescriptions. Importantly this space envisioned the use of certain moral concepts to help those who endure energy dilemmas articulate their own experiences. The application of the framework to the case study of the Hirakud Dam also illustrated that certain moral and political theories may offer more relevant concepts to articulate and relate the valuable aspects of people’s and communities’ lives to

energy systems. A key motivation behind this chapter, was to illustrate the potential use of moral theory in assessing and responding to energy dilemmas, an implicit point throughout however is that moral theory will not definitively tell us what the “right thing to do” is. This relates to an important but understated aspect of this chapter; that by outlining the potential application of moral theory to energy dilemmas, we are also highlighting the limitations of moral theory; that it can help us understand energy dilemmas but can also ignore or mischaracterise situations, and that it can help inform decision-makers and power-holders with different perspectives but may not necessarily influence them.

### 5.1.3 Chapter 4: Redefining energy justice: integrating capabilities and trivalent justice

This chapter revisits and partially redefines how a trivalent conception of justice, integrated with a capabilities-based approach, can act as a foundation for a viable account of the of energy justice. Based on a critical review of current accounts and two applications of the TCEJ, I emphasise that a redefined trivalent space can be used to broadly reflect the demands being made by those who endure energy dilemmas. However, I argue that on its own, the trivalent space lacks the exploratory and explanatory power to frame and analyse how energy dilemmas interact with the goods people and communities hold to be valuable. This is compounded by the underdeveloped account of the interactions between distributional, recognition-based, and procedural justice at the centre of the TCEJ. In this respect, this chapter responded to both sets of research questions, it critiqued a current approach to energy justice’s use of moral and political theory and illustrated how we might use certain moral and political concepts to better develop ideas of energy justice.

This critical review of applications of the TCEJ also highlighted the flawed method of applying such a framework to case studies. Unlike trivalent accounts of environmental justice, which used theory to articulate recurring claims of disparate environmental movements, the TCEJ does not draw on case studies or the demands of certain movements to inform its own structure but rather imposes its structure on these studies. This is not to say the recognition-based, distributional, and procedural issues are not afoot in these case studies, but that by shoe horning aspects of case studies into one of three categories of injustice without further theoretical engagement, risks missing particular and understudied aspects of these issues. On this basis, I argue for the integration of additional concepts to the trivalent account of energy justice, which can help better capture and articulate the unique relationships between energy systems and ideas of justice and therefore better justify the need for energy justice approaches.

Drawing on chapters two and three, I show how the capabilities conception of human well-being is a sensitive metric of justice that can contribute to our understanding of energy dilemmas. Importantly, capability can aid in articulating how matters of procedure, mis, and mal-recognition and maldistributions interact to impact people’s lives. I then argue that the integration of the capabilities approach into energy justice thinking offers a means of displacing the antiquated conceptions of people



as “individuals” that underpin many mainstream participatory procedures, through offering a space in which people and communities can articulate their own values and interests in reference to energy systems.

It is important to note that this paper shifted focus from the principled approach entirely. As mentioned in chapter one, the TCEJ draws more focus in this thesis because of its broader claims of producing normative guidance and improving on existing grounded theories such as environmental and climate justice.

## 5.2 Key findings: shortcomings in energy justice

As has become evident much of the novel content within this thesis was motivated by limitations within current approaches to energy justice. These issues are summarised below:

### 1. The compartmentalisation and use of moral theory

The idea of using moral theory to frame energy dilemmas and guide energy decision making is prevalent in energy justice discourse. However, the application of these theories is often confined to analytical aspects of energy justice scholarship and values from these theories are rarely used reflexively to assess and inform on other theoretical and strategic aspects of these approaches. A common issue in both approaches was that although they draw on moral theory and make moral claims, they are not often presented as arguments, but instead tend to consist of statements without clearly underlined premises to support them. This relates back to the method of scrutinising the soundness of arguments based on the premises which underpin them in chapter one.

#### *The TCEJ*

The most apparent example of this was the TCEJ’s goal of “providing all people in all areas with safe, sustainable and affordable energy”, which seems intuitive and hard to dispute but the TCEJ never turns its trivalent frame to focus on justifying this goal.

A key finding from chapter three was that the TCEJ’s use of moral theory was seemingly limited to its analytical framing, the TCEJ’s “top-down” approach, inclusion of recognition justice and critiques of activist led, bottom-up, environmental movements appeared to sit in tension to one another. Highlighting this tension, illustrates that the use of moral theory within the TCEJ does not expand to its overarching strategies and goals. To frame energy dilemmas as resulting in or from issues of recognition and then to advocate for remedies through structures which may exclude and misrecognise the groups who initially aired the grievance, clearly illustrates where the use of moral theory begins and ends within the TCEJ.

#### *The Principled Approach*

The principled approach is successful in using a range of moral theories to frame different energy dilemmas, but less so in justifying why one theory should be used to frame a certain energy dilemma over another. When considering the question of the termination of moral theory, it becomes apparent that the use of moral theory ends where the proponents of this approach begin selecting different moral framings. In other words, the normative assumptions as to which issues counts as morally problematic and then which moral frame to apply to this issue illustrate the cut-off for the use of moral theory. This is because each moral frame will yield, often drastically, different normative insights and guidance. Without a justification as to why each frame is suitable for analysing a particular dilemma we are left to assume that these framings and their subsequent outcomes aligned with the authors own existing normative assumptions – as opposed to helping inform or change these assumptions. This is admittedly a more ambiguous, less clear cut-off point than the TCEJs, but raises some interesting questions regarding the limitations of drawing on moral theory and the reasons we might give to do so.

## **2. Scarce opportunity to develop energy justice**

The method of application of energy justice frameworks has left little space for reflexivity. This is partly because of the rigid applications of energy justice frameworks, as illustrated by chapter 4, where different cases are categorised as opposed to analysed, this particularly applies to the TCEJ. Jenkins et al. (2020) have recently highlighted the tendency of energy justice scholarship of restating an overarching definition of energy justice without detailing it further. This rigidity has impeded the exploration of what aspects of energy dilemmas make them unique enough normative phenomena to justify the creation of energy justice frameworks. The principled approach, by outlining a refined and more specific output – the “normative check-list”, is less susceptible to this limitation.

## **3. The ability of moral theory to frame and connect issues which transcend the production-consumption binary**

Consistent calls to view energy dilemmas within a whole systems framing have not been met with any clear framework as to how we might understand these issues within the same moral frame, for example, how might we compare and connect the moral weight of issues traditionally framed as either consumption or production. Energy justice approaches are able to conceptualise and embed these issues within the same systems, but they are less able to draw out the ethical connections and tensions between such issues.

## **4. Overstatement of the abilities of moral theory to create change**

Core approaches to energy justice consistently produce claims and suggest that the use of energy justice frameworks, derived from different moral concepts, can create more “equitable”, “fair” and “just” energy systems. There is often an implicit assumption that the creation of energy systems that embody these values is a matter of envisioning the right moral or justice framework and making this accessible

to decision-makers. In other words, the assumption that characterising justice and injustice in the “right way” will result in power shifts and actual change. The absence of any substantial discussion on issues surrounding relativity and differences between moral theories compounds these issues and has gone largely underexplored in current energy justice scholarship, as have the spaces in which we might be better understand competing claims to justice.

### 5.3 Key contributions of this thesis

These contributions are framed in reference to the findings above. Each numbered contribution corresponds to the numbered limitation raised above. In this sense, this section connects the first set of research questions, regarding the current state of approaches to energy justice, to the second set regarding the use of moral theory in understanding energy dilemmas and developing ideas of energy justice.

#### 1. Expanding the use of moral theory

Chapter three developed a methodology for the use of moral theory in framing energy dilemmas and showed how different moral concepts can produce novel insights and normative guidance when applied to an energy dilemma. Chapter three set out a broad, pluralistic approach which tests the ability of different moral concepts to capture and explain the problematic aspects of energy dilemmas. The pluralism in this approach stemmed from the idea that consulting multiple theories, each with different conceptions of “the good”, can be useful in exploring energy dilemmas, so long as this is done pensively and with an awareness of potential flaws of using moral theory in this way. Firstly, that the selection of a moral frame, is itself a normative choice, and one which requires justification - as illustrated in chapter three of this thesis, different moral theories applied to the same case study will yield substantially different normative framings and guidance. Second, and closely related to the first point, is that a sole moral theory will not always have the language or concepts necessary to articulate and reflect certain types of oppression or grievances.

This pluralistic approach helps to uncover the tendencies of certain theories to conceal or reveal dynamics underpinning or perpetuating an energy dilemma. Further, by incorporating and testing more theories the range of concepts available to explore and better understand energy dilemmas grows. This pluralistic approach was positioned as a means of extending the role of moral theory in existing energy justice approaches to scrutinise or substantiate their broader strategic goals and visions.

#### 2. Developing energy justice

The pluralistic approach discussed above provided one means of developing and refining existing work on energy justice. However, the development of energy justice need not be confined to refining existing energy justice approaches.

A key critique of the TCEJ in chapter four was that its rigid application to existing energy dilemmas provided little insight or detail on the dynamics underpinning energy dilemmas. Furthermore, it was argued that the approach did not provide the concepts necessary to better develop the spaces in which we come to understand the impacts of energy dilemmas. Chapter four illustrates how the integration of capabilities with a trivalent account of justice can form the foundations of a viable account of justice. The presence of the capabilities approach does not only serve a descriptive purpose but also a set of concepts which can operationalise core procedural and recognition-based values at the centre of this account.

A key aspect of this account is that its application does not have to pertain directly to the descriptive account. Rather, the account can describe values which require additional concepts and tools to operationalise. A central feature of this, revolves around the procedural realm and developing the participatory spaces in which grievances about energy dilemmas are heard and understood. The capabilities approach was suggested as providing a way to outline the things a person or community need requires to meaningfully engage within a participatory space.

### **3. The ability of moral theory to frame and connect issues which transcend the production-consumption binary**

Chapter two presented a theoretical synthesis of different capability-based concepts which were used to create a space in which to embed issues commonly associated with energy production or consumption within the same conceptual space. This was achieved using the example of the impacts of climate change, well-being dependence on fossil fuel derived energy, and proposals aimed at reducing the use of fossil fuels. The synthesis of ecological meta-capabilities, capability conflicts, and the framework set out in Day et al. (2016) illustrated that the same moral concept could be used to frame and articulate the ethical aspects of substantially different issues associated with energy systems. This framing created a means to illustrate the complexity and tensions between different energy dilemmas within the same system. This enables energy justice scholarship to move beyond characterising these impacts as connected technically through the same system, and instead to view them as morally intertwined in the pursuit or deprivation of the same values.

Chapter three's pluralistic approach provided a means of testing moral theories' abilities to explain and connect these issues. This approach illustrated how certain theories can capture the trade-offs involved in energy developments. In the case study on the Hirakud Dam, the moral framings were applied to both the impacts of the dams construction and the benefits of the electricity it supplied, illustrating that the same theory can be applied to and connect issues of production and consumption.

### **4. The abilities of moral theory to contribute to change**

Chapter four focused exclusively on the TCEJ. This was in part because chapter three found the principled approach more reserved in its claims and goals, producing a discrete output i.e. the normative checklist. Whereas the TCEJ literature was shown to make consistent claims regarding the ability of the approach to produce viable normative guidance and change. Chapter four thus explored whether the moral theory employed in the TCEJ was useful in understanding energy dilemmas. Concluding that the TCEJ's moral underpinnings lacked explanatory power and the findings often did not appear to be derived from the application of moral concepts, chapter four moved to propose a foundation for a redefined and capability-integrated, trivalent account of energy justice.

Chapter four illustrated there are more steps involved in the use and application of moral concepts in creating change. This initial foundation was positioned as primarily descriptive, in that it was intended to describe and capture the frequent dynamics underpinning energy dilemmas, as opposed to be directly applied to energy dilemmas to produce guidance. Instead, the avenues for change stemming from such an account arise through its ability to inform on necessary and sufficient conditions for meaningful engagement in procedural spaces. This is based on the ideas presented by Schlosberg (2009) that distributive and recognition-based issues play out in the procedural realm.

A final contribution in the remainder of this thesis, is *how then can this foundational account and the procedural spaces that stem from it be developed?* In this sense, it responds more broadly to questions regarding the ability of moral theory to inform on and contribute to change.

## 5.4 Limitations

This section outlines the limitations of the work contained in this thesis so far. Following sections seek to address these limitations by outlining possible avenues for future research.

### **Realistically assessing the role of moral theory in changing energy systems**

Much of the work contained in this thesis focuses on improving the use of moral theory but not necessarily on pointing to means of improving how we respond to energy dilemmas. This thesis has repeatedly argued that current approaches to energy justice do not draw on moral theory in a substantive enough manner to generate original or novel ideas for change. The goal and expectation of change could have been stated and decoupled more clearly, especially in chapter two. In other words, the role of moral theory in energy justice jumps to creating “fairer” or more “just” energy systems. The role of moral theory in this thesis is to better characterise and articulate the impacts of energy dilemmas. Of course, in some ways the use of moral theory is to envision something “better” or “fairer”, and therefore motivate change, but the scope for change resulting from the use of moral theory is more muted than proponents of current energy justice approaches have argued. It is preferable to have a more reflexive detailed account of the intersection between energy systems and justice than not to have one, so that if the space for change does arise we can better reflect the views and experiences of those who the change

is intended to benefit. But understanding why something might be understood as unjust, even in a highly detailed way, does not on its own yield change.

### **Recognising normativity in broader energy justice and my own research**

Throughout this thesis appeals to “justice” in energy justice scholarship have been shown to make substantial claims regarding the ability of justice-centric energy framings to produce more “just” or “fair” energy systems. Chapter one made the distinction between discrete contributions to wider energy justice discourse. However, chapters three and four focused almost exclusively on discrete approaches to energy justice. I want to stress that normative theory can impact our research in how we undertake, share, and present it. Moral theories can help in making the case for certain structural changes to our energy systems, but it will not on its own, no matter how sound and coherent, result in “better” energy research and energy systems. As has been highlighted by Galvin (2020), it takes more than reason to shift and change power structures which underpin and shape our energy systems. This thesis focused primarily on the use of moral theory in what I referred to as “approaches” to energy justice, but broader energy justice discourse will also contain normative assumptions about which energy related situations are most pressing and which of these are most deserving of attention. These assumptions will also impact the ways in which these issues are researched and even the findings of such research. Looking forward I would advocate for extending the normative scrutiny applied in this thesis to broader energy justice discourse.

### **This thesis has only set out proposed foundations for an account of energy justice**

This thesis has pointed in a broad direction in which to develop energy justice but has not contributed significantly to issues regarding the differentiation of energy and environmental justice. The need to separate energy justice from environmental justice remains ambiguous, especially given that many, if not all the dilemmas featured in energy justice scholarship feature prominently in environmental justice. The key differences between environmental and energy justice which revolved earlier in this thesis which revolved around the addition of particularised and detailed socio-technical and spatial descriptions of energy systems seems to remain the key differentiator between energy justice and environmental justice scholarship. This thesis sets a broad foundation from which to develop an account but by doing so attempts to shift energy justice to resemble existing trivalent accounts of environmental justice more closely. This might initially be viewed as regressive, however I hope earlier arguments in this thesis have illustrated the relative theoretical strengths of the trivalent space as articulated within environmental justice scholarship.

### **Moral relativity**

In chapter two a pluralistic conception of the good is used to help construct a space in which to articulate and connect a range of values to energy dilemmas. However, I have not discussed the constraints of

such a space. Many views and conceptions of the good will and do conflict but I do not intend to succumb to moral relativism within this thesis (the idea that morality is relative and depends on subjective standpoints). The use of the capabilities approach helps to lessen this issue through suggesting all people have rights to threshold levels of various capabilities and helps point towards a space in which these conflicts might be better understood. However, there are some conceptions of the “good” or what is “right” which I would not seek to accommodate within this space. I do not detail these here, but we do not have to look far for conceptions of the “good” which conflict with other’s abilities to participate in society fairly or seek to disadvantage certain groups.

### **Distributional or distributive justice**

This thesis did not address the distributional/distributive confusion apparent in the TCEJ literature and assumed the spatiality of justice formed a single component of contemporary distributive justice. In some energy justice literature distributive or distributional justice seems to refer to broad, contemporary distributions of certain goods in society, in other works it can be taken to describe purely the spatial issues surrounding energy dilemmas, as described by Bouzarovski and Simcock (2017). The TCEJ has never sought to clarify this, and the definition changes frequently (interestingly (Jenkins et al., 2020) recently notes this). This thesis therefore assumed the TCEJ was primarily referring to distributive justice in a contemporary sense.

### **Use of language**

The use and description of moral theory in chapter two largely aligned with discussions on the characteristic of distributive theories of justice. The language of constitution in chapter two reads as overly prescriptive and in retrospect I would have framed this more tentatively as a way of producing understanding as opposed to constituting injustices. Although I remain sympathetic to Nussbaum’s arguments for this. Chapter two was also developed before I engaged with more specific energy justice literature, and so is not framed as responding to the limitations of any particular energy justice approach.

### **Connecting cross-limitations**

Many of the limitations above are related and can be responded to by further developing the ideas set out within this thesis. The role of moral theory in informing change and the development of this foundational understanding of energy justice into a more comprehensive account are addressed in the proceeding sections.

The connection and response to these limitations is based on the understanding that to produce outputs which can help respond to energy dilemmas requires an initial account of the dynamics which underpin and perpetuate energy dilemmas. Therefore, these limitations are responded to in the following order. Firstly, a potential route to developing a viable account of energy justice is set out. Following this, the

role of an account in understanding and informing the procedural spaces in which we come to better understand and respond to energy dilemmas is discussed.

## 5.5 Energy justice: developing the conceptual and procedural research agendas

This section sets out a future research agenda on developing our understanding of the ethical impacts of energy dilemmas. I present additional concepts which complement those already presented in preceding chapters of this thesis, which can help develop a viable account of energy justice. These sections can be read as building on the second set of research questions, on developing the use of moral theory in understanding energy dilemmas and more viable ideas of energy justice.

An important distinction here is between an account and what I have so far referred to as “approaches” to energy justice. By account I mean a descriptive work on the general dynamics which underpin energy dilemmas. When I have used approach, I refer to works which have been designed to be directly applied to an energy dilemma i.e. the TCEJ and the principled approach. Importantly the foundation for an account of energy justice I outline below is not intended to be directly applied to energy dilemmas but rather to detail the underpinning dynamics of energy dilemmas (perhaps more importantly, I should emphasise this is *just* the foundation of an account, not a fully-fledged work).

Unlike approaches to energy justice, this account is not primed for rapid application to energy dilemmas. Instead this account is intended to create a reflexive space in which to understand energy dilemmas. The most useful form this might take is a description of the things people and communities need to do and be to engage meaningfully in procedural spaces and how energy dilemmas interact with these. Through doing so this account can contribute to the formation of effective spaces in which we can better learn about the impacts of energy dilemmas on the things we value.

### 5.5.1 Towards a viable account of energy justice

This section outlines how sufficientarian ideals can contribute to a foundational account of energy justice, through helping to articulate and understand the impacts of excessive and insufficient levels of capabilities in relation to energy systems. A central narrative in chapter four is that the prevailing approach to energy justice, the TCEJ, has not followed the same logic as its comparable predecessor, Schlosberg’s trivalent account of environmental justice (Schlosberg, 2009). Instead of creating an account to characterise a set of movements, demands, and dynamics the TCEJ has mischaracterised this trivalent space manifesting instead a set of tenets which are to be applied to energy systems. In a sense the TCEJ has omitted this step of creating an initial account of energy justice. This section outlines potential uses and components of such an account.

As explorations and documentation of energy dilemmas increases so does the scope and potential for the creation of a viable account of energy justice. By “viable” I mean an account of energy justice which serves to effectively reflect under-theorised dynamics which underpin energy related injustice. As



outlined in chapter four, a trivalent conception of justice would likely form a functional foundation for this account. This is because there is ample evidence from intersecting environmental justice issues that these themes and dynamics arise in the claims of those who are impacted by energy dilemmas (Walker, 2012, Schlosberg, 2009). Chapter four briefly touches on capability based sufficientarian accounts of justice (Nielsen et al., 2017, Axelsen and Nielsen, 2015). I see these accounts in the future being a key mediator in growing discussions of sufficiency regarding access to energy, especially as these discussions are yet to draw on ideas of sufficiency drawing from moral perspectives (See O'Neill et al., 2018, Darby and Fawcett, 2018, Monyei et al., 2018).

One attempt to develop the viability of existing approaches to energy justice can be found in Pellegrini-Masini et al. (2020), who connect the TCEJ and the principled approach by explicating their shared egalitarian roots. Pellegrini-Masini et al. (2020) argue that both approaches share grounding in formal and substantive equality – ideas of equal political and material and opportune standing. Pellegrini-Masini et al. (2020 p.6) suggest understanding energy justice in this way is beneficial for several reasons:

“...it appears likely that EJ, if it were evident that it is rooted in equality, would be more easily understood, translated into policy, and possibly advocated for, by a considerable number of policymakers, thereby implying that it would be easier to evaluate EJ policies in terms of their outcomes. Further, their acceptance by the public might increase if they were perceived to reflect egalitarian principles.”

Key to Pellegrini-Masini et al. (2020) argument is the work of Kymlicka (2002) who argues that any theory of justice attempts to define the conditions of a society in which all people are treated as equals.

“On Dworkin's view, every plausible political theory has the same ultimate value, which is equality. They are all 'egalitarian' theories (Dworkin: 1977 179-83; 1983: 24; 1986: 296-301; 1987: 7-8; cf. Nagel 1979: m). That suggestion is clearly false if by 'egalitarian theory' we mean a theory which supports an equal distribution of income. But there is another, more abstract and more fundamental, idea of equality in political theory-namely, the idea of treating people 'as equals'.” (Kymlicka, 2002 pp.4-5)

I agree with Pellegrini-Masini et al. (2020) and Kymlicka (2002) and in this sense this argument also applies to the content of this thesis. There is an underlying assumption within this thesis that all people are of equal standing. However, if we are to consider the matter of difference that capabilities seek to address – that different people will require more or less resources to achieve the same outcomes – then this abstract notion of equality is less useful in understanding variances in peoples vulnerability to energy dilemmas. We desire some abstract type of capability but may not desire an equal distribution of resources – or even capability. This is where ideas of thresholds and sufficiency become useful in developing an account of energy justice.

Capability based sufficientarian accounts provide principles to guide the distributions and limits on key capabilities after their threshold levels have been achieved (Axelsen and Nielsen, 2015). These principles differ for abstract and material goods. For example, once the threshold level of political participation has been met, it is desirable from a democratic point of view for that level to be equal to every other persons – this may indicate the need for specific measures to ensure no one person’s political capabilities exceed another’s. However, it may make less sense to equalise other capabilities - the capability of bodily health for example – there is no reason society should seek to equalise our bodily health to that of Serena Williams as long as we all have the capability to achieve an adequate, threshold level of health to engage meaningfully in society. Axelsen and Nielsen (2015) describes this logic:

“Making people free from duress, then, entails making them free from great obstacles to pursue a successful life. With respect to some capabilities, this will mean giving people a relatively equal level— either because their relative position directly determines their absolute capabilities for success or because they influence these indirectly.” pp.425-426

To be clear this is not an argument against the idea that all humans are equal, but rather that abstract notions of formal or substantive equality to do not scale down when discussing the less abstract things we value. Equalising access is not necessarily useful when energy access is the focus of attention. Interestingly, members of public have voiced ideas which parallel ideas of sufficient levels of energy access to support a range of activities and practices to be able to engage meaningfully in society (Demski et al., 2019).

I would also be wary of a focus on equality resulting in a shift of focus to the distributive realm, paying attention to an equal distribution of energy access as opposed to the capabilities energy access enables. I would stress that although equality should be a central value at the core of any account of energy justice, it does not necessarily serve to inform the ways in which we should respond to or understand energy dilemmas.

Axelsen and Nielsen (2015) capture the difficulty in separating egalitarian and sufficientarian ideas in their *sufficiency as freedom from duress*:

“It may seem, then, that freedom from duress is merely an egalitarian wolf in sufficientarian sheep’s clothing. This, however, is due to the unjust distribution that defines the world we currently live in, which constitutes the grim frame of reference within which we compare different distributive ideals. Under such circumstances, distributive improvements that conform to egalitarian, prioritarian, and sufficientarian ideals can be difficult to distinguish because of broad agreement (among political philosophers!) about giving priority to relieving the suffering of the severely poor.” pp.425-426

Chapter two of this thesis focused on capability-conflicts which can occur when people excessively exercise certain capabilities. Moving forward ideas of sufficiency provide means of legitimising

measures to limit the excess capabilities of some for the sake of others and can contribute to our understanding the need to prioritise access to certain levels of energy services. To move towards a viable account of energy justice, we require concepts which can inform on the things people and communities require to achieve a range of outcomes. To achieve a sufficient set of capabilities that constitute a good life requires a sufficient level of access to energy, and to participate meaningfully in society and procedural spaces requires sufficient levels of certain capabilities. In developing this account of energy justice ideas of sufficiency can help to grasp these circular relationships.

The purpose of developing such an account of energy justice is to produce an over-arching understanding of the dynamics that underpin and perpetuate energy dilemmas. It is important to stress that this account is not intended to be applied to energy dilemmas but instead to learn from and adjust its scope to reflect the ethical issues which arise in relation to them.

Key to developing this account of energy justice is the idea that to contribute to change we must first have a deeper understanding of the unique dynamics which underpin energy dilemmas. It is therefore important to recognise the benefits which can flow a viable account of energy justice. Such an account can inform on the areas which can be practically developed, such as the spaces in which we explore and come to better understand the impacts of energy dilemmas, namely, the procedural realm. The following sections therefore outlines several procedural considerations which could stem from developing this account of energy justice. The motivations for these considerations are framed well by summarising and responding to Galvin (2019).

### 5.5.2 Developing the procedural realm

Galvin (2019 p.178) critiques existing energy justice approaches' loose use of the term justice, noting that existing approaches to energy justice are yet to explore what it means to make a moral claim and aptly stating "we are left to assume or imagine what is in the authors' minds when they do this". Galvin argues that asking leaders and decision makers to make decisions based on a particular theoretical understanding of justice is unlikely to win their backing.

Galvin makes a distinction between what he terms a *rational meta-physical view* and a *pragmatist view*.<sup>43</sup> Galvin (2019 p.178) describes the rational meta-physical view as treating moral claims as if they were statements of right and wrong which exist "in some reified metaphysical realm" and which "can be discovered and explored by rational thinking", and describes the pragmatist view as treating moral claims as "really nothing more than statements about human affect (feelings, wants, preferences)". He goes on to argue that energy justice requires something in between these two views.

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<sup>43</sup> This initially seems like Sen's ideas of realised-focused comparison and transcendentalism outlined at the beginning of this thesis. On reflection I do not think Galvin's distinction captures the same dynamics of imaging a completely just world verses comparing possible worlds that Sen's does. This is not necessarily a criticism of Galvin's distinction – his distinction aims towards a different end – but it is worth noting to avoid confusion.

Galvin proposes a Wittgensteinian approach to moral claims can serve as this in between. In this Wittgensteinian approach moral beliefs are seen as “formed in communities through people’s practices and discourse; individuals develop moral impulses, commitments, beliefs and behaviour as part of growing up, learning how to live in relation to others, and becoming functional human beings whose lives have meaning” p.182.

Galvin argues that although our moral beliefs are initially “thick” and develop based on local experience we can extend our beliefs in a “thin” manner to widespread and global issues as we develop morally. Finally, Galvin argues that we must appeal to decision-makers already developed moral characters to have issues and findings of energy justice discourse taken seriously and acted on.

I broadly agree with Galvin’s critique of existing energy justice work but to a lesser extent, his sentiments regarding the use of moral concepts in informing ideas of justice. I do not believe that understanding moral claims in this way, at least on its own, helps us to better understand, convey and respond to energy dilemmas. In responding to Galvin’s arguments below, I also point to a number of areas which are useful in outlining required developments in energy justice thinking more broadly.

First, the idea that appealing to leader’s “already developed moral character” will result in change. The past decade of austerity, growing poverty – in many forms, and the work to distract from or deny this by recent leaders of the UK, suggests at the very least that leaders of the UK have a substantially different “moral character” to those of us who see these issues as morally wrong or are not “morally developed” at all. Watch any number of prime minister’s questions, where a series of the UK’s leaders have had testimonies of those living in hunger and fuel poverty read to them and you will see a denial or dismissal of these claims.<sup>44</sup> Appealing to our leaders’ moral character does not always seem like a steadfast way to create change.<sup>45</sup>

The second aspect of Galvin’s proposal I find problematic is the absence of moral theory in contributing to our understanding and articulation of justice. We cannot prove or disprove the extent to which ideas of freedom, inalienable rights, honour, harmony, or ideas of equality, which permeate different societies around the world, originate from lived experience or from theorising. It seems instead that there is a broad synergy between the two. It is difficult to dispute that axial thinkers such as Plato, Aristotle, Confucius, and Buddha have not in some way shaped modern conceptions of what is good or right, just as it would be difficult to dispute that their own views were informed by their experiences.

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<sup>44</sup> For examples see: <https://www.parliament.uk/business/news/2019/may/prime-ministers-questions-15-may-2019/> and <https://www.parliament.uk/business/news/2020/june/prime-ministers-questions-17-june-2020/>,

<sup>45</sup> It is interesting that Galvin suggests this as a means of developing energy justice. Elsewhere Galvin’s (2020) work on connecting energy justice to the civil rights movements, suggests the contrary, arguing powerful interests do not give up their privileges through polite conversation and non-disruptive practices.

Of course, it is also difficult to dispute the sentiments that using Rawls' (1971) *A theory of justice* to explain why fuel poverty is morally problematic to the House of Commons would not be particularly appealing or compelling. But the use of moral theory to make such cases is more complex than this. As illustrated in chapter three of this thesis, there is a place for the pensive use of such theories in shaping how we might explore, understand, and then articulate certain moral claims. This is pertinent when these claims relate to complex issues which people and communities might initially have difficulty decoupling or articulating – this is especially the case when attempting to decouple our values from particular types of technology (Brand-Correa and Steinberger, 2017).

The omission of relativity, adaptive preferences, and hermeneutical injustice also pose problems for Galvin's proposition. The argument that moral character is developed through people's practices and discourses does not offer a means to distinguish or critique the relativity of conflicting moral beliefs, nor does it offer a way to help people or groups identify and articulate hardships or forms of oppression in their lives. For example, how are we to argue that a person "who doesn't believe in taking handouts" and believes "people should work for what they get" is not morally developed. This person evidently holds a moral code, developed from experience and this code may well appeal to leaders who are similarly "morally developed", even if this moral character does not lend itself to understanding and responding to certain types of hardship and oppression which underpin or result from energy dilemmas. I am not disputing Galvin's argument but rather the idea that "developed moral character" can be relied on to produce and receive moral testimonies that contribute to redressing issues at the centre of energy justice discourse. In a sense Galvin is in danger of proposing that to be morally mature is to agree with his own moral beliefs.

The idea of adaptive preferences outlined by Sen (2001) is an important consideration when discussing the formation of moral character. Adaptive preferences refer to situations whereby a person comes to prefer certain circumstances which might limit their ability to flourish. We can imagine a situation in which a young woman has internalised the belief that it is right she undertakes domestic work and does not seek education (Nussbaum, 2001)<sup>46</sup>. It is difficult to say she is not morally developed - even with compelling reasons to dispute her own beliefs, doing so can challenge her autonomy and border on paternalism (See Khader, 2012)<sup>47</sup>.

Miranda Fricker's work on hermeneutical injustice outlines how certain groups may not have the concepts necessary to effectively articulate certain forms of hardship or oppression they are experiencing (Fricker, 2007, Also see Goetze, 2018). The use of additional moral concepts can help in

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<sup>46</sup> We do not have to imagine this, there are many accounts, see Nussbaum, (2001) and Khader, (2012).

<sup>47</sup> This issue is more complex than I have space to explore here and admittedly I remain ignorant to many of these complexities.

articulating such grievances and dynamics. This also poses an issue for Galvin's proposal as certain groups may require additional theorising or concepts to meaningfully articulate their experiences.

In sum, I agree that moral beliefs are heavily influenced by and derived from experience, but I am concerned that the development, articulation, and communication of moral beliefs are more complex than Galvin's description makes room for. Even if our moral beliefs develop from experience, they require more than a morally developed character to be meaningfully articulated, heard, and understood - especially in reference to complex systems or previously under theorised experiences.

Responding to Galvin (2019) points to a necessary feature of a viable approach energy justice: people may sometimes need additional concepts or capabilities to articulate and connect their values to an energy dilemma. The following subsections point towards plausible means of outlining and creating spaces which help provide these concepts and capabilities.

### 5.5.3 Energy justice and procedural spaces

The discussion of Galvin (2019) above regarding the barriers which might prevent a person from articulating their grievances point towards the need for certain types of spaces to facilitate the articulation and connection of people's values to energy dilemmas. Despite a significant focus on procedural aspects of justice, little energy justice scholarship has sought to develop or critique the processes and spaces through which people and communities participate. Instead, as illustrated in chapter four, discussions on procedural justice within energy justice approaches do not generally extend beyond broad and ambiguous calls for "equitable procedures" and "representation". However, in other disciplines critiques and attempts to reimagine contemporary and traditional modes of participation are growing in number (Pallett et al., 2019, Chilvers et al., 2018, Chilvers and Pallett, 2018, Pallett, 2019). These critiques focus on *residual realist* aspects of contemporary modes of participation, such as conceptions of participants as rational and autonomous individuals, participation occurring as discrete "one-off" instances and as underpinned the pre-defined norms and models (Chilvers and Kearnes, 2015). In place of these contemporary aspects these approaches seek to reimagine participation as a relational series of entangled and interrelated involvement in different participatory spaces, which are continuous reflexive and co-productionist (Chilvers and Kearnes, 2015).

The theme throughout this thesis of assessing and identifying where normative assumptions are going un-checked can be aptly extended to the procedural realm. As opposed to talking about specific pieces of technology we value, we instead talk about specific values certain technology might support or disrupt (Demski et al., 2019, Demski et al., 2015). Capability provides ample language and concepts through which to separate our values from technology to enable these relationships to be articulated. This relates back to the exercise outlined in chapter one on Aristotle's ultimate end, whereby we continually inquire about the end to which an activity aims to find the ultimate outcome which renders something useful in our lives. The important aspect of this was to separate the capability from the object

which delivers or impedes it to ensure that the means we rely on do not come to dictate what we ultimately value (Also see Brand-Correa and Steinberger, 2017 who does this using a similar but distinct theory of human needs). Where such spaces are applicable the appeal of a capability centred participation is three-fold.<sup>48</sup>

First, capability can inform on both the abstract and material goods a person may require to meaningfully engage in a procedural space. As discussed, in chapters two and four a capability conception of well-being can be used to outline and highlight various components of well-being that must be attained for a person to engage meaningfully in political and procedural spaces. For example, capabilities relating to health and education are essential in enabling meaningful participation in society. In this way the integration of the capability into an account of energy justice lends itself to disputing the conceptions of people at the centre of many modes of participation, creating a space in which a more complex and nuanced understanding of a person can emerge. Work on relational aspects of the capability approach also contribute to understanding the necessary requirements to engage meaningfully in procedural spaces and align well with the emerging relational understandings of participation (See Smith and Seward, 2009). Connections between relational capabilities and access to energy services have already illustrated the approaches' capacity to capture such dynamics (See Middlemiss et al., 2019) and can be drawn on to point towards a more nuanced understanding of the relationships between well-being, energy access, and participation, where each is seen as integral to the other.

Second, the concept of capability can be used to help structure and articulate a person or group's valued capability set, as to enable them to articulate their core values, decoupled from the structures or topic on which a participatory space focuses. At certain times, a pre-defined list of capabilities can serve as useful starting point through which to structure discussions, however that does not imply that this list cannot be sensitive to or shaped by the people and communities drawing on it (Nussbaum, 2001, also see Sen, 2005). Work using similar (although distinct) eudaimonic conceptions of well-being have been used to develop such spaces (Brand-Correa and Steinberger, 2017, Brand-Correa et al., 2018).

Third, the idea of capability can create accessible means of understanding how these spaces contribute to a person's own well-being or capability set – in other words the concept can be used to articulate the benefits and impacts participation can have on the things a person values doing or being. These benefits might be instrumental in that the act of participation results in positive changes to the topic of the procedure, or they may be intrinsic in that they contribute to a person's own well-being directly. For example, the very act of meaningfully participating in a procedure be the exercise of a key social or participatory capability which forms an intrinsic part of a person's own well-being. Although a key

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<sup>48</sup> I use the term spaces of participation, to escape using terminology that suggests that participation is confined to separate instances. Instead spaces can expand in size and temporality.

critique of contemporary forms of participation is the assumption of publics formed of autonomous individuals (Chilvers and Kearnes, 2015), this does not mean autonomy itself is not valuable. It is still necessary to recognise and respect the autonomy of people who engage in procedural spaces regardless of disputes of its extent. Explicitness regarding the normativity embedded in procedural spaces can enhance a person's autonomy by avoiding structures which may dictate the values and structures used to articulate a person's views. By acknowledging these normative assumptions and allowing people to challenge or interrogate them, procedural spaces can produce more meaningful understandings of the things a person values before then enabling them to apply these values to the subject or issue on which the procedure is centred. Autonomy in this sense may be less problematic if it is understood as a person wielding "sovereignty" over certain spaces, in understanding that procedural spaces may affect how they express and connect their values to different issues<sup>49</sup>.

This latter point speaks directly to the recurring theme within this thesis of identifying and scrutinising unchecked normativity. A broader application of moral theory and concepts to existing modes of participation can help examine where normative assumptions are embedded in existing procedural spaces and how these assumptions might be justified or rejected. A key question moving forward will be whether proposals to displace existing conceptions of participation are normatively explicit about the assumptions embedded within them. Future intersections between broader energy justice discourse and recent reimagining's of participation presents fertile opportunities to explore what "procedural justice" might mean with regards to energy dilemmas.

## 5.6 Concluding thoughts: the future of energy justice discourse

This thesis has found significant scope to develop ideas of energy justice. Existing approaches of energy justice were shown to fall short in several ways. One major shortcoming was an inability to connect energy systems to things we value as to explicate the relevance of energy dilemmas in our lives. This thesis explored the viable uses of moral and political philosophy to help understand and make these connections. In turn this helped to illustrate how energy justice approaches often deviated from these uses of moral and political philosophy when attempting to understand energy dilemmas in a normative way.

The use of moral and political theory, primarily the capabilities space, has been drawn on to illustrate how we can connect and articulate the impacts of substantially different energy dilemmas within the same moral framings. I presented a framework through which to explore the abilities of different moral and political concepts to capture and reveal the dynamics underpinning energy dilemmas. Further, I have proposed that trivalent conceptions of justice, which pre-date energy justice, can be used as a foundation for a descriptive account of energy justice, so long as the interdependencies between their

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<sup>49</sup> Thanks to Michael Cannon for fruitful discussions on this topic.



constituent components (distribution, recognition, procedure) are articulated in a meaningful way. I have argued that a capabilities centric approach can help explicate these connections and will play a key role in differentiating energy justice from other grounded theories, through a specific focus on energy access.

In concluding I have pointed to means of developing and understanding of the intersection of energy dilemmas and the things we value through shifting focus to ideas of sufficiency. I have suggested that the impact of such account is to be found in the procedural realm in helping people and groups achieve the capabilities required to articulate and connect the things they value to energy dilemmas in a meaningful way. The future agenda I have proposed does not necessarily lead to a framework which can be rapidly applied to produce abundant academic outputs but rather proposes a slower and lower impact avenue through which to more meaningfully understand the connections between energy systems and the things we value.

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## Appendix

Below are short summaries of McCauley et al. (2016) and Jenkins and Martiskainen (2018), I recommend visiting the papers in full however.

*Table 6-1 Summary of McCauley et al. (2016)*

Summary of McCauley et al. (2016)	
Justice dimension	Categorised issues
Distributional pp.143-144	This section begins with a brief description of the spatiality of energy justice and suggests that work on maldistributions is framed based on proximity to energy infrastructure. This is followed by a summary of on-shore wind developments impact on indigenous Sami people's and local reindeer populations, the growing risks associated with the expansion of oil and gas extraction and subsequent risk of oil spills associated with increased shipping routes through the Arctic impacting local livelihoods which depend on fishing and reindeer husbandry.
Recognition pp.144	Sami people's livelihoods depend on fishing and reindeer herding. A point about the "under-recognised importance of non-indigenous people" p.144 is raised by an interviewee and that both these communities are dependent on local ecosystems and therefore vulnerable to energy developments. The disparity between the energy rich area and energy provision for inhabitants and resulting health and living standards are noted. It is suggested that these disparities result from insufficient participation in wealth generating activities. The impacts of tourism on local populations and the need for their involvement to direct tourist flows. This is suggested to produce income by offering "authentic" experiences, whilst preserving local ecosystem. A discussion follows regarding the roll of extractive industries delivering "freedom from want" and a point that regional differences across Arctic communities should be respected and taken consideration in decision and making. This section concludes stating "beyond indigenous peoples, academic scholars are equally identified as under- or mis-recognised. A call for recognition is also clear for greater engagement of northern scholars in the identification of research priorities in Arctic areas." This followed by a call to present research in accessible ways and focus on the co-production and co-communication of research between researchers and stakeholders.
Procedure pp.144-145	Section begins describing procedural justice as a "call for equitable procedures that engage all stakeholders in a non-discriminatory way" p.144. Then Argues more attention should be paid to knowledge creation in "procedural based decisions" in part because "Indigenous and non-indigenous peoples are central, for example, to monitoring the increase in tourism in the high north, but equally the intentions of business to develop there. Cultural pluralism is a place for creative industry" p.144. A need for earlier engagement in the siting of infrastructure projects and some more positive examples of this are summarised. It is suggested that "procedural justice is therefore more than simply inclusion. It involves also the mobilization of local knowledge" p.145.

Discussion and Conclusions pp.145-146

- Justice on a procedural level “must be an imperative to not just respect, or include but rather *mobilize* local communities within the decision making for governmental and business processes” p.145
- “... the influence of local communities on corporations and lower level institutions within the exploitation processes of oil and gas, transport and processing are questionable. This self-reflection and acceptance to adapt must be reciprocated by energy companies, which would allow for economic growth in the region while minimizing the risk of local habitat and ecosystem disruption.” p.145
- Argument that it is important to hold energy companies to account. p.145
- Must ensure all stakeholders are involved in future decision making. “Indeed, stakeholder engagement is primarily designed to ensure the inclusiveness of the decision-making process by empowering all the stakeholders to participate in it and have their claims taken into account” p.145
- “However, stakeholder engagement and social accounting currently fail to achieve the goals they were established for. Hence a new approach to ensuring sustainability of Arctic resource extraction is needed.”
- “We propose a justice-rather than simply a stakeholder centred perspective” p.145
- “energy justice scholars must continue to make the case for a fair re-distribution of burdens and benefits, and not just make the case for due process in decision-making. The Finnmark controversy in the first results section underlines the extent to which indigenous peoples are subject to distributional injustices— from a due process perspective of course, but also a proximity one as an energy infrastructure that benefits all, and burdens only some.” p.145

Table 6-2 Summary of Jenkins and Martiskainen (2018)

Summary of Jenkins and Martiskainen (2018)	
Justice dimension	Categorised issues
Distributional pp.38-40	Section begins arguing that current and historic definitions do not capture the complexities of fuel poverty and cites Bouzarovski and Petrova (2015) definition of “attain[ing] a socially and materially necessitated level of domestic energy services” p.38. Subsequently argues that what is being discussed is “what energy resources we do or do not have access to” that “distributional justice can reveal and help us understand” this. Claims distributional justice is concerned with the distribution of goods and services across society. Suggests that fuel poverty is a clear example of maldistribution. Notes that experience of fuel poverty differ by household/people/communities. Offers an early sub-conclusion we should therefore “anticipate and mitigate the potential impacts of our choices with a view to reducing unequal burdens across a wide range of contexts, including attention to the potential externalisation of UK energy policy ‘ills’ (Jenkins and Martiskainen, 2018) p.39. Concludes access cannot always be evenly distributed.
Recognition pp.40-42	States “Justice as recognition is taken to be a means of engaging with the questions of ‘who’ is energy justice for, and, importantly, who is responsible for its provision” p.40 (Jenkins and

	<p>Martiskainen, 2018). Initially discusses living in cold homes, only being able to heat certain rooms, which limits use of home. Being able to cool a home will also be a concern; For those living in fuel poverty their home can become a place of discomfort, ill health, mortalities associated with cold homes. Notes NHS spending of £1.36 billion/year and mental health issues, respiratory problems, circulatory illnesses such as heart disease associated with fuel poverty. Notes the impact on children’s education, making homework hard to complete. Cites Sovacool (2015) on fuel poverty and how people become visible by experiencing the impacts of fuel poverty above. Quotes Walker and Day (2012) regarding fuel poverty being seen as a lack of recognition of the needs of certain groups – “a lack of equal respect accorded to their well-being”. Notes that fuel poverty is both visible and invisible and one of the largest challenges is establishing who is being affected. Sub-concludes “identifying those who face fuel poverty is key towards recognising the problem and addressing it, it is not always easy to identify those who are suffering” (Jenkins and Martiskainen, 2018) p.41. Stigma attached to being fuel-poor, “households avoid seeking help for fear of being seen not being able to cope with certain aspects of life” (Jenkins and Martiskainen, 2018). Suggests people may not realise they are living in fuel poverty and cites several national energy agencies which identify fuel poverty can become an issue for any group. Notes that children and the elderly and people with disabilities or long-term health conditions can be particularly vulnerable. Cites Sovacool (2015), households have neither the time nor the means to participate in energy decision-making that might ameliorate issues. Suggests need to recognise links between policy for reducing fuel poverty and reducing energy demand and to develop more nuanced recognition of energy needs linked to vulnerability of particular groups (Gillard et al., 2017). Makes point about need for reflexivity regarding who is being impacted by policy and <i>who is responsible for these outcomes</i>.</p>
<p>Procedure pp.42-43</p>	<p>Describes procedural as a call for “equitable procedures that engage all stakeholders in a non-discriminatory way” p.42. Outlines requirements of just procedures based on Walker and Day (2012); Access to information, what type and who it is provided by; Access to and meaningful participation in decision making; Minimal bias from decision makers; Access to legal processes to achieve redress. How and who community renewable projects are developed for “Fuel poverty is not an easy problem to solve. As fuel poverty has causes and implications that go beyond energy, addressing it will also require considering issues beyond energy policy *e.g. housing, social and health policy). Notes households and fuel poverty are still invisible in the realm of decision making. Restates point that households in fuel poverty are likely unable to engage in processes which might redress their situation. Discusses charitable organisations which provide local advice, often “stop-start” and limited in scope and funding. Lack of government effort to resolve these issues indicate people living in fuel poverty are still relatively invisible “yet accepted, losers in the UK’s energy system”. P.43</p>
<p>Findings and Conclusions pp.43-55</p>	

- Argues that “it is within the overarching process of sociotechnical change that issues of energy justice emerge, where inattention to social justice issues can cause injustice, or via their inclusion can provide means to solve them” p.43
- Argues for “greater engagement with the energy justice approach in both academia and in practice, where it can be used as a means to guide ethically sound decision making.
- Government and business must identify vulnerable and then “ascertain and make provision for vulnerable customers through targeted subsidies, exemptions and efficiency measures”. p.44
- “justice principles can provide guidelines for policy interventions by ensuring that energy efficiency schemes reach households in a way that meets their specific needs (Gillard et al., 2017)” p.44
- Need policies to upgrade existing social housing stock combined with “consumer engagement programmes to enable participatory justice throughout this process.” p.44
- Notes that “in terms of achieving procedural justice, funded energy cafes can act as a triage services, bringing together local authorities, health workers, community organisations and individuals in trusted settings.” And that “similar ventures require grant funding in order to provide a continued services, train fuel poverty advisors and transfer learning to others.” p.44
- Argues there is a need to be aware of the impact of energy pricing and subsidies on low income, vulnerable consumers.
- Final remark that “through these measures and others in the domain of energy demand, we have the potential to both acknowledge and embed normativity in energy demand reduction effort”. P.45

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