Rethinking Energy Demand

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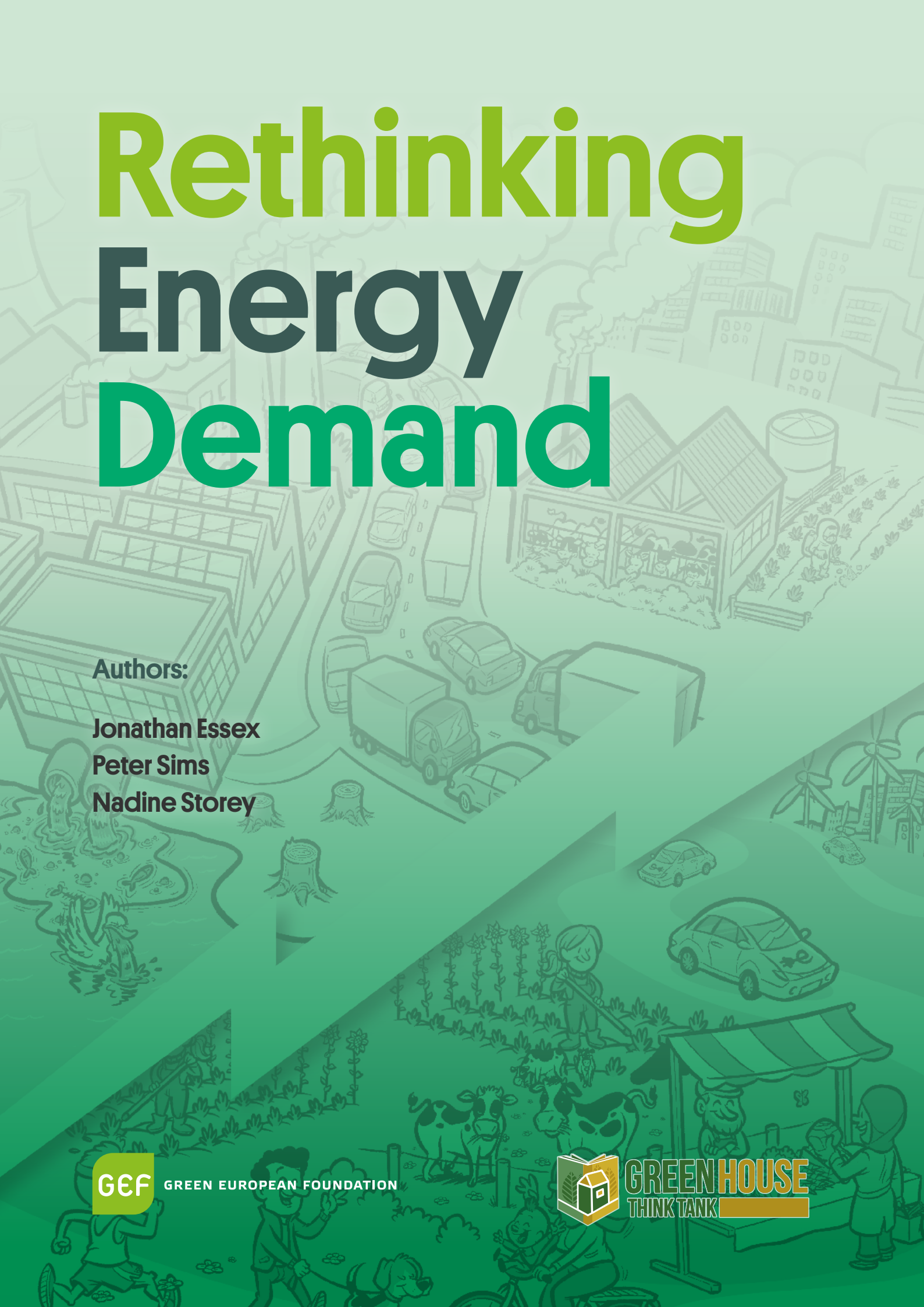

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Foreword by Philippe Lamberts

Humans are facing unprecedented ecological challenges. Climate change is taking an increasingly violent turn, living species are suffering the sixth mass extinction, and the planet's resources are increasingly scarce, not least because of pollution. All this is the result of a man-made economic system predicated on endless predation. Clearly, to have any chance of maintaining a liveable planet for humanity to call home, fundamental changes are needed, not least to our economic system, so that our societies live within the planetary boundaries. Whilst attention must be paid to how we supply our needs for energy, shelter, transport, and food, reductions in our demand for those things are equally urgent if we want to solve the equation of life on Earth. At the centre of all of this is the use of energy.

Whilst in unguarded or politically opportune moments leaders talk about system change, the dominant narratives around demand are marginal, inadequate, and shift the main responsibility to the individual. People are urged – often by so-called 'nudges' designed to shift them gently into new patterns of consumption – to make better choices. Indeed, it is their responsibility and in their power to do so. Thus, people are urged to be responsible citizens and turn down thermostats, wear warmer clothes, and take shorter showers. Further, the prevailing narrative of consumer sovereignty declares that by acting differently, individuals send signals to producers via markets that rapidly translate their myriad decisions into a collective judgement that is efficient and democratic.

These narratives of individual change have an inherent goal: leave the DNA of our productivist system and the rents of its beneficiaries intact. It is true that for an overarching plan or policy to work, it requires bottom-up action by individuals. But this will never be enough to enable system change. Individuals act within the constraints they face, and which they have only limited ability to change. The free consumer is a myth: in reality, consumers are governed, in some ways formally via laws but more commonly via informal mechanisms. These include the goods and services they are offered by producers and the messages via which those producers entice consumers, often by association of a product with higher-level needs or values such as freedom or autonomy. Individuals also act within networks of social norms and conventions, many of which are reinforced by messages from powerful vested interests.

Thus, in contrast to the way energy demand reduction is conceived by most politicians, this report argues that the urgent needs of our emergency demand fundamental changes to the organisation of our economy and society, with justice and redistribution as guiding principles. And these changes have to be enacted by our democratic institutions. For the first time, Putin's war of aggression in Ukraine has triggered a public debate in Europe about energy demand reduction. Now that this door has been opened, action must follow. And rather sooner than later: the Club of Rome report "The Limits to Growth" is now 50 years old! We have ignored it for far too long.

Philippe Lamberts

Member of the European Parliament,
Co-President of the Greens/EFA group in the European Parliament

Report Overview

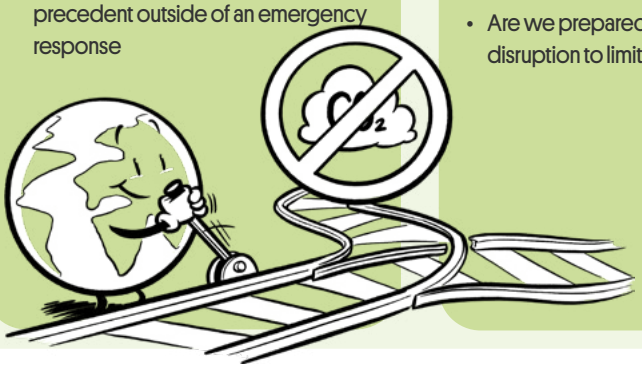
Welcome to Reality

1.1 Reducing energy demand is essential to limit dangerous climate change

- Limited amount of renewable energy available in near future
- Energy availability will always shape energy demand
- Efficiency improvements alone insufficient – rebound effect
- Precautionary approach is to choose to rethink demand rather than gamble on future technologies
- Rethinking demand presents lots of possibility to reduce burden of decarbonisation and increase speed

1.2 Reducing energy demand will disrupt the status quo

- Reducing emission by 17–27%per yearwith energy demand around half over the next decade will be disruptive
- This isn't happening and has no precedent outside of an emergency response



1.3 What choices will our societies make?

- Our societies face a choice – rethink demand for energy or significantly overshoot our carbon budget
- Choosing to reduce energy demand requires choosing redistribution
- Are we prepared to choose disruption to limit climate danger?

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The current focus on technologies, efficiency and behaviour change will not deliver the scale of change needed

→ This can't be done with our current systems of governance

→ Publicly accountable systems for governance and evaluation of what works must replace influence of private interests

→ Two-way communication and wider participation in decision-making are vital to win support and acceptance of the scale of changes needed

Our societies face a stark choice

→ Limiting dangerous climate change requires rapid and substantial reduction in energy demand and radical social policies to ensure this is redistributive – improving the wellbeing for all

→ Avoiding the need for energy demand can reduce carbon emissions by up to 70% through a joined-up approach that:

- changes social and business practices
- retrofits infrastructure
- replaces the invisible energy policies that drive energy demand

Introduction

This report explores the need to rethink energy demand in terms of policies, politics and economics. It draws on interviews and round-table discussions with academics researching energy reduction and sufficiency, and post-growth and macroeconomics, and with green politicians (see **Acknowledgements**). The unattributed quotes throughout the report are from these interviews and round-tables. The most significant areas for reducing energy demand – such as air and car travel, diet, and home heating, as identified by the Cambridge Sustainability Commissions – were explored.[1] The report focuses on the barriers, opportunities and where sufficient changes could be unlocked through new governance, policies and communication, rather than on specific policies for specific sectors.

Our societies' demand for ever greater use of water, minerals and renewable resources including timber, and the impact this has on land use around the world, are accelerating us towards planetary breakdown. Energy demand is just a subset of how humanity is exceeding planetary boundaries. Whilst this report focuses specifically on reducing direct energy demand,[2] much of the report's findings could be applied to much wider challenges, including the indirect energy embodied in supply chains, which also need to be reduced if we are to address the interlocking climate and ecological crises.

The report is written to inform and provide a resource for policy makers, politicians, climate campaigners and the general public who are motivated to respond to the climate change threat. It also may help to inform the political framing of academic work around demand reduction.

Section 1 of this report sets the context for this work. Evidence shows that the total amount of energy used in Europe must be reduced in order to decarbonise at least in line with Intergovernmental Panel on Climate Change assessments, and that this will require significant rethinking of energydemand. **Section 2** considers the implications that this might have for governance, whether political, economic or in response to wider impacts, before **Section 3** explores what is required to reduce energy demand. Finally, **Section 4** considers how the communication of rethinking demand might be framed.

1 Newell, P, et al. (2021) 'Changing our Ways? Behaviour Change and the Climate Crisis'. *The Cambridge Sustainability Commission on Scaling Behaviour Change*, p.67.

2 Energy demand also needs to be reduced *indirectly* in making products and along the supply chain, which is linked to reducing global material throughput. This is beyond the scope of this report.

Section 1 – Welcome to Reality

1.1 Reducing Energy Demand is Essential to Limit Dangerous Climate Change

Whilst there is widespread acceptance that greenhouse gas emissions from Europe's economies are significantly changing the global climate, the need to reduce energy demand to address this is much less well understood or accepted as a political objective. This means the focus of decarbonisation needs to be on reducing energy demand, not just 'energy efficiency' and 'renewable energy roll out' as current political focus often is.

If our societies accept there is only a finite amount of climate-safe energy, and that Europe living within its fair share of a shrinking global climate budget (compatible with limiting global heating to 1.5°C) requires much quicker decarbonisation, then European societies must rapidly reduce their demand for energy.[3]

It has been calculated that the UK must cut energy use by 60% to reach zero carbon by 2050.[4] These estimates recognise the limits to how quickly renewable energy can be deployed.[5] Such energy reductions far exceed what can be delivered through 'energy efficiency' improvements alone. Without some constraint on demand, our societies will always find more ways to use energy than the supply of renewable energy available. In the same way, energy efficiency measures often lead to more demand for energy not less. This rebound effect is well documented.[6]

Taking a precautionary approach[7] requires that, if there is a strong suspicion that an activity may have harmful consequences, it is better to avoid and control that activity now. Such a principle also means only relying on proven technologies and practices to do so.[8] This implies that meaningful actions to decarbonise now, must include reducing energy demand, rather than hoping technologies not yet proven at scale might deliver decarbonisation without reducing energy demand in the future.

Yet almost all of the IPCC modelled pathways for a 1.5°C future rely on technologies to deliberately take CO2 out of the atmosphere.[9] A more prudent approach would be to treat these as bonuses, not betting our collective future on them. There is vast uncertainty in how quickly such technologies could be deployed at scale.[10] Relying upon such emerging and unproven technologies is too big a risk and reinforces humankind's carbon addiction.[11,12,13]

In the face of these high-risk alternatives to reducing energy demand, there is an ever shorter window left to fully decarbonise European countries to stay within their fair share of the remaining global carbon budget.[14] The IPCC reviewed how reducing energy demand might contribute to reducing carbon emissions, beyond what can be achieved through energy efficiency measures. It concluded that 5% decarbonisation is possible through individual behaviour changes compared to 70% reduction through comprehensive, economy-wide demand reduction, combining changes in infrastructure and how energy is used.[15]

3 Jackson, T (2021) 'Zero Carbon Sooner—Revised Case for an Early Zero Carbon Target for the UK'. *CUSP*.
4 Allwood, JM, et al. (2019) 'Absolute Zero'. *UK FIRES*. Similar levels of demand reduction are implied in scenarios by négaWatt for France: négaWatt (2021) 'The Energy Transition at the Heart of a Societal Transition'.
5 For example, limited biomass availability due to need to grow food, and geographic constraints as to where renewable energy infrastructure can be placed.
6 If more energy availability or improved energy efficiency lowers the cost of demand, then demand expands. Sorrell, S (2009). 'The Rebound Effect: Definition and Estimation', in Evans, J, and Hunt, L, *International handbook on the Economics of Energy*. Edward Elgar Publishing.
7 The Precautionary Principle was formally adopted by the EU through the Maastricht Treaty in 1992 and also remains a part of UK law. See: SfEP (2017) 'Future Brief: The Precautionary Principle: Decision-making under Uncertainty'.
8 Turner, A (2020) 'Techno-optimism, Behaviour Change and Planetary Boundaries'. Keele World Affairs Lectures on Sustainability. *Keele World Affairs*.
9 Beck, S, and Oomen, J. (2021). 'Imagining the Corridor of Climate Mitigation–What is at Stake in IPCC's Politics of Anticipation?'. *Environmental Science & Policy* 123, pp.169–178.
10 Larkin, A, et al. (2017) 'What if Negative Emission Technologies Fail at Scale? Implications of the Paris Agreement for Big Emitting Nations'.
11 Allwood, JM, et al. (2019) 'Absolute Zero'. *UK FIRES*.
12 Stephenson, S, et al. (2021) 'Minus 45: Delivering the UK Government's Pledge to COP26: Cutting UK Emissions by 45% from 2018 to 2030'.
13 Anderson, K, and Peters, G (2016) 'The Trouble with Negative Emissions'. *Science* 354(6309), pp.182–183.
14 For example, for the UK to remain within its fair share of the remaining global carbon budget to stay within 1.5°C warming, it would require reaching zero carbon by 2030.
15 Creutzig, F, and Roy, J (2022) 'IPCC Sixth Assessment Report: Chapter 5, Demand, Services and Social Aspects of Mitigation'. *IPCC*.

1.2 Reducing Energy Demand Will Disrupt the Status Quo

Seeking zero carbon *and* accepting that renewable energy must provide for all our energy needs will lead to lower energy use, at least in the near term. Bringing this about will disrupt business and social practices now (see **Box 1**).

One estimate of how quickly industrialised European countries would need to reduce their carbon emissions ranges from 17% to 27% annually.[17] The range mostly depends on how remaining carbon budget is shared between countries with high and low historical emissions, and the extent to which countries export or import products. It is likely that over half of this reduction would need to be achieved through reducing energy demand. This would represent an unprecedented scale of change – greater than during the Covid-19 lock-downs, and continued year after year.[18] This highlights the extent of transformation required, and the gap between this and current climate plans.

Such energy demand reduction would require a letting go of the idea that sufficient decarbonisation is possible alongside our continued cultural addiction to consumerism. It is not, however, individual choices that will unlock the changes needed, but disruption to our current consumer economy and politics that frame

Box 1. What Might Choosing Disruption for a 1.5°C World Look Like?

The transition to a sustainable future will entail different ways of living. This is likely to mean a lot less driving and flying, lower meat and dairy consumption, more walking and cycling, more public transport use, democratised and localised provision of food and energy and reasonably warm homes. 1.5°C compatible lifestyles would mean a better *quality* of life for most people.[16]

'We need to let go of our current addiction to consumerism. We must recognise the social and institutional nature of the lock-in that exists and the fact that it is systematically built into the ways that people make choices in their lives.'

the *daily practices* that constitute our ways of living.[19] This is contrary to existing prevailing narratives.

However, such economic changes and the associated energy reduction needed remain largely overlooked by most current energy policies.[20,21] For example, overall energy use in Europe has only reduced by 1% per year over the last decade.[22] Clearly a far greater rethink of energy demand is required.

1.3 What Choices Will Our Societies Make?

The climate impact on societies is unfairly distributed, not just through climate disasters but also, crucially, as a result of the economic impacts of reducing energy demand. Reduced energy use is likely to slow down economic growth.[23] This strengthens calls to redistribute wealth and/or restart growth to ensure the needs of all are met. If rising inequality isn't addressed, there is a risk of social unrest and ultimately societal breakdown. Therefore, if there is less energy available to go round, then choosing to reduce demand for

'If you don't have equity you cannot decarbonise – instead you will have the yellow vest movement, like what happened in France.'

16 HotorCool, '1.5-Degree Lifestyles'. It is possible to halve energy demand without negatively affecting citizen's quality of life: Barrett, J, et al. (2022) 'Energy Demand Reduction Options for Meeting National Zero-emission Targets in the United Kingdom'. *Nature Energy* 7, pp.1–10.

17 Necessary average annual reduction for UK emissions – see Jackson, T (2021) 'Zero Carbon Sooner—Revised Case for an Early Zero Carbon Target for the UK'. *CUSP*.

18 Total energy available for final consumption in EU27 drop about 6% between 2019 and 2020 – eurostat, 'Simplified Energy Balances' (nrg_bal_s).

19 Foster, J (2022) 'Rethinking Consumerism'. *Green House Think Tank*.

20 Neither the European 'Fit for 55' policy package nor the British Energy Security Strategy focus on energy supply.

21 The EU Energy Performance in Buildings Directive limits final energy use per m^2 but not the number and size of buildings, whilst the EU Eco-design directive does not stop even more products continuing to be produced and consumed. Noted in the 'EU "Save Energy"' communication from the European Commission in May 2022.

22 See eurostat, 'Simplified Energy Balances'.

23 Jackson, T (2019) 'The Post Growth Challenge: Secular Stagnation, Inequality and the Limits to Growth'. *CUSP*. Ecological Economics 156.

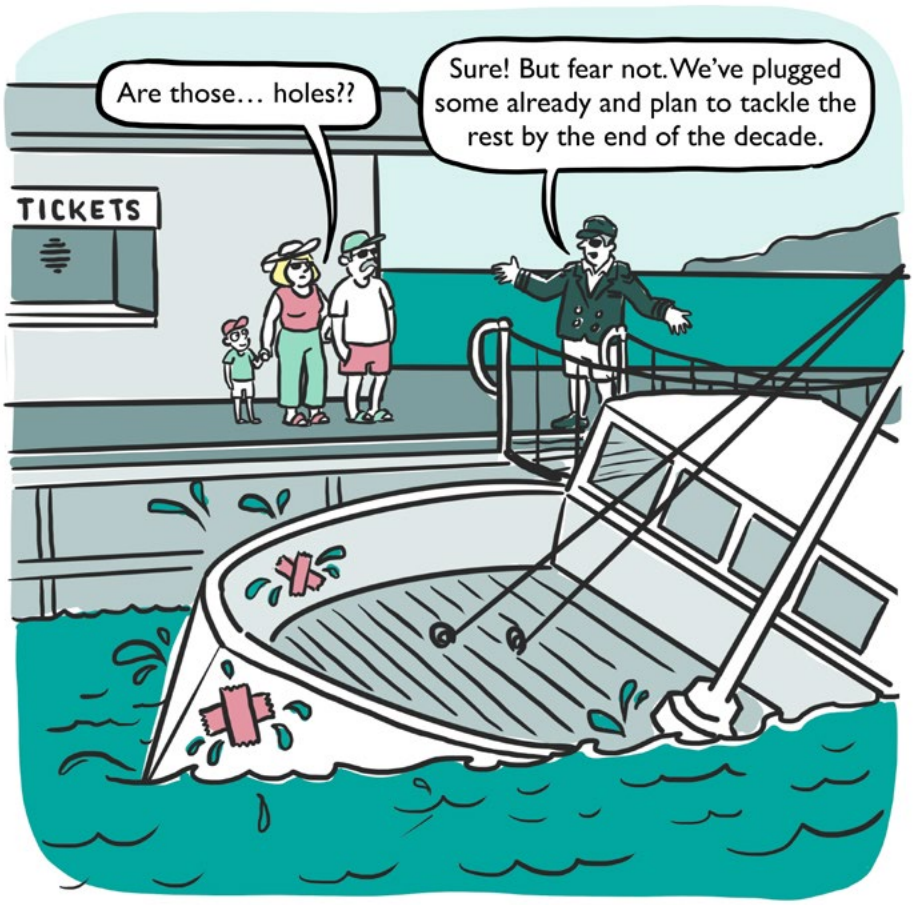
energy should lead to a choice to reduce inequality at the same time.

The responsibility for causing climate change is also unequal. Globally, around 10% of the most wealthy continue to cause around 50% of emissions.[24] In Europe, the richest 10% account for 36% of emissions.[25,26] It is critical that this is recognised and accounted for.

Choosing a redistributive approach to energy reduction would address extreme consumption whilst ensuring energy is used to meet everyone's essential needs first: comfortable homes, affordable local transport and good food for all. This requires a choice between continued damaging economic growth and significant wealth and resource redistribution.[27] It is clear then that the issues of equity, justice and fairness are absolutely central to rethinking demand.

So our societies face a stark choice. Either we rethink and rapidly reduce our demand for energy in an equitable way, or exceed 1.5°C of global warming and expose humanity to much greater risks and suffering.[28]

This choice is reflected in the calls for governments at all levels to declare a climate emergency.



24 Gore, T (2020) 'Confronting Carbon Inequality: Putting Climate Justice at the Heart of the COVID-19 Recovery'. Oxfam International. Also Oxfam (2015) 'Extreme Carbon Inequality'.

25 'There is a fundamental problem in contemporary discussion of climate policy: it rarely acknowledges inequality' – Chancel, L (2021, 7 December) 'The Richest 10% Produce About Half of Greenhouse Gas Emissions. They Should Pay to Fix the Climate'. *The Guardian*. This is explored in Chancel, L (2020) *Unsustainable Inequalities: Social Justice and the Environment*. Harvard University Press.

26 World Inequality Database.

27 Wilkinson, R, and Pickett, K (2009) *The Spirit Level: Why More Equal Societies Almost Always Do Better*.

28 Emissions budgets and climate targets are social limits agreed by societies and potentially by humanity globally. They are not bio-physical limits which are externally imposed. See Kallis, G (2019) *Limits: Why Malthus was Wrong and Why Environmentalists Should Care*. Stanford UP.

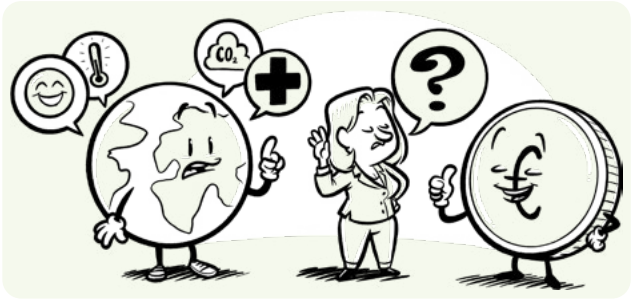
Section 2. Governance for Rethinking Demand

In referring to governance, this report focuses mostly on formal structures whilst also touching on informal forms of control such as the roles played by media and advertising.[29]

Changing ways of living, the direction of our economies, patterns of investment and social norms requires not just new policies but wholesale changes to governance systems and the nature of democratic participation. This opens up questions of democratic legitimacy such as, 'Who has the agency?' 'Who has the power to determine how much energy is used?' and 'Who is involved in decision-making about how such changes happen?'

A significant block to rethinking demand for energy is the failure of governments as well as wider politics and economics. A reformation of governance is needed for the necessary decisions to be made at the speed and scale needed. This must address fixed political mindsets and the influence of private interests and corruption, which undermine the accountability of governance.

This section explores why current governance systems appear unable to rethink demand for energy (**Section 2.1**), what implementing emergency climate governance might entail (**Section 2.2**) and the ways that sufficient support for this might be won and citizen agency restored (**Section 2.3**). This leads on to considering how governance systems might support society through what will be a disruptive shift (**Section 2.4**) that embraces post-growth economics (**Section 2.5**) and redefines the overall objective of the economy (**Section 2.6**). Critically it then investigates the structures and processes that could redirect investment whilst widening participation and accountability, reducing demand for energy in ways that bring about wellbeing for all (**Section 2.7**).



2.1 Hijacking of Governance Systems

'As long as we fail to identify the interests influencing political processes, then they will remain in the shadows.'
'[Vested interests are] pretty much who you think they [are,] doing pretty much what you think they are doing.'[30]

Vested interests are embedded in our political systems. There are private interests driving further demand for energy. These include fossil fuel companies (driving extraction) and the advertising industry, automotive industry, construction, real estate and house-builders, defence, and global trade (driving consumption). These reinforce the long-established exploitative vision for an ever more industrialised and individualistic society.[31] This leads to continued ratcheting up of unsustainable patterns of production and consumption, further embedding high-carbon and energy-intensive ways of living. And the influence of these vested interests blocks attempts to realise a state of climate emergency.

There is a huge fossil fuel incumbency locked into our systems of governance. This influence is exerted

Box 2. Undue Influence of Politicians and Political Parties

The British politician Nadhim Zahawi was paid £1m to advise oil companies – more than twelve times his basic salary as a politician [32]. The UK Conservative government received £130m, 80% of its general election funding via an elite dining club, including fossil fuel donors.

29 This is explored in Foucalt's concept of governmentality – Puett, T (2014) 'The Political Discourse of Religious Pluralism: World Religions Textbooks, Liberalism, and Civic Identities'. PhD Thesis, *University of Waterloo*, pp.35–39.

30 Ian Hislop quoted during UK Parliamentary Standards Select Committee Hearing, 25 January 2022 – 'Ian Hislop embarrasses MPs in Their Own Select Committee on Lobbying and Transparency'. *PoliticsJOE*. YouTube, 21:20.

31 For example, individual car ownership in Europe grew from 2005 to 2017 – 'Passenger Car Ownership in Europe'. *EEA*.

through lobbying, the employment of elected politicians and the funding of political parties (see **Box 2**)

The fossil fuel industry and car manufacturers have a long history of shaping government policy to suit their interests, which is reflected in the way today's urban landscapes lock-in high-carbon and energy-intensive ways of living.[33] Similarly, the reach of vested interests is reflected in government choices to invest in risky techno-fixes over more effective ways to decarbonise and reduce energy demand.[34] This is partly a consequence of unintentional 'group think' as a result of a lack of diversity in the background, values and life experience of those in power. It is exacerbated by 'revolving doors' between corporations and governments. Too often politicians announce bold public commitments without sufficient policies or finance to achieve them. This undermines public trust, as highlighted in **Box 3.**

Limiting the influence of private interests and finance from the political decision-making is absolutely crucial to enable a shift to lower energy ways of living.

Dismissing these cases purely as legitimate lobby, as a lack of transparency or failure of public accountability is not enough. This extends beyond lies, green washing and the parading of half-baked or even false solutions. The impact of this on politics could be described as using *'words or expressions changed from their original state to one regarded as erroneous or debased'* often influenced by *'dishonest or fraudulent conduct, typically involving bribery'*. These are dictionary definitions for 'corruption'. By hiding the reality of what is required to limit climate change, these covert influences stifle public debate and undermine our democracy. Choosing to rethink demand requires a reclaiming of our governance structures.

Why Might Vested Interests Hold Back Rethinking Demand?

Rethinking demand requires a significant shake up of existing markets and business models. This will close off some (lucrative) business opportunities such as fossil fuel extraction and real estate speculation, whilst opening up new opportunities and driving both social and technical innovation.

Box 3. Undermining of Public Trust

The recent declarations by the French government to end planned obsolescence and fossil fuel related advertising led to only very limited changes.[35] Similarly, the UK government's 2021 annual climate report states the need to reduce demand for high-carbon transport, [36] but demand reduction was entirely omitted from its new 'jet zero' aviation strategy.[37] Is it a coincidence that the aviation sector gave 13% of all donations to the ruling Conservative Party in the three months before the strategy was published? [38]

Such an economic shift would disadvantage individuals and companies who have built businesses, infrastructure and wealth on profiting from (or exploiting) aspects of our current economy. This group of private interests includes some of the most wealthy and powerful who logically wish to preserve and protect these business models and positions of market dominance. However, doing so protects business-as-usual and blocks sufficiently rethinking demand and, therefore, decarbonising the economy. There is evidence this may already be leading to economic stagnation, at least in parts of our economies (see **Section 2.5**). Choosing to rethink energy demand will affect the certainty/continuity for some enterprises and sectors of the economy.

However, the shift would also free up potential economic opportunities in other sectors for different entrepreneurs and business. The economic actors that benefit from these are unlikely to be as powerful, wealthy and well connected as incumbent industries. This power imbalance skews economic vested interest overall into a political influence to maintain the status quo.

In a true democracy citizens should be able to collectively decide that acting on the climate emergency and rethinking demand is a top priority, and give a public mandate to create a different and dynamic economy to bring that about right now.

32 Nadhim Zahawi declared more than £1m received from fossil fuel companies, has shareholdings in Genel Energy (an oil and gas company) and received a donation from the chief executive of UK-based oil company EnQuest. See Watts, J, and Duncan, P (2019) 'MPs and the Oil Industry: Who Gave What to Whom?'. *The Guardian*; and Geoghegan, P, et al. (2019) 'Revealed: The Elite Dining Club Behind £130m+ Donations to the Tories'. *OpenDemocracy*.

33 Mitchell, T (2011) *Carbon Democracy: Political Power in the Age of Oil*. Verso.

34 The UK government is pushing for mass hydrogen heating before scaling up plans to insulate homes. UK Government (2021) 'UK Hydrogen Strategy'. This is challenged by campaign group Insulate Britain.

35 Frost, R (2022) 'France Becomes First European Country to Ban Fossil Fuel Ads - but Does the New Law Go Far Enough?' *euronews*.

36 'Implement measures to encourage consumers to shift diets (20% reduction in meat consumption by 2030) [and] reduce demand for higher carbon travel', in UK Government (2021) 'Government Response to the Climate Change Committee: Progress in Reducing Emissions – 2021 Report to Parliament'.

37 Department for Transport (2022) 'Jet Zero Strategy: Delivering Net Zero Aviation by 2050'.

38 £650,000 of donations were received April–June 2022. Vaughan, A (2022, 16 September) 'Donations from aviation anger green campaigners'. *The Times*.

Elected politicians could then, in response to such a mandate, choose to implement economic policies that disrupt business models that depend on fossil fuel extraction whilst encouraging alternatives. This requires politicians to be bound first by a public duty to serve citizens (who elect them), not kowtow to business interests wishing to preserve the status quo. It is further exacerbated by private monopolies having un-due control of the media and influence on culture through advertising, which shapes public opinion.[39] It could be argued this undermines the human right to freedom of thought.[40] In light of this, questions around integrity, accountability of governance systems and the influence of vested interests are paramount.

In conclusion, this hijacking of our current political systems highlights the inadequacy of current systems of governance in Europe to sufficiently rethink demand for energy.[41] However the problem runs deeper than a failure of accountability. As **Section 1** laid out, there is no precedent for the speed and scale of change required, so it is also questionable whether existing structures without such influences could even then deliver the coordination, delegation and public mandate necessary.

'It is only now dawning on some how challenging it is to reach climate targets. None of us have really understood how much was needed to reduce emissions by even 80% reduction by 2050. Now we have an even stronger target. We cannot achieve [net zero] by having slightly more efficient products on the market: we need structural change.'

2.2 Emergency Governance Now

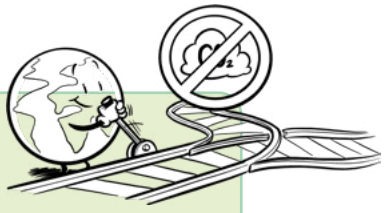
The IPPC Special Report on the implications of exceeding 1.5°C global heating was published in October 2018.[42] Later that month Extinction Rebellion (XR) was formally established.[43] The aim of XR was to get climate change on the agenda, for politicians to respond to acts of non-violent civil disobedience and calls to 'listen to the science' and declare a climate emergency. One month later a motion by Carla Denyer led to the City of Bristol becoming the first government body in Europe to declare a climate emergency.[44] As of August 2022 a climate emergency had been declared in 2,268 jurisdictions and local governments.[45]

Declaring a 'state of emergency' allows changes to governance structures and temporary policies and restrictions. The state of emergency and response measures are legitimised by the (potential) impact on society if immediate and drastic action is not taken.[46] Yet no European government has so far declared a state of climate emergency and placed their economy on an emergency footing to address climate change. In 2021, EU27 and global CO_2 emissions rose 6%.[47]

Responding adequately and appropriately to the climate emergency requires different governance processes and structures. It would need new work programmes that curtail or ration existing activities, entrepreneurial thinking and innovation, new targets and goals that are not compromised (i.e. failure is not an option), and leadership becoming the norm.[48] Significantly, emergency responses tend to bypass market mechanisms and make extensive use of planned and centrally coordinated monopolies to more efficiently deliver critical services, infrastructure and interventions.

Some climate emergency declarations have led to new governance. For example, Bristol is creating a new City Office Environmental Sustainability Board and an Advisory Committee on Climate Change. However, no city, regional or national government that

39 Alexander, J, et al. (2011) 'Think of Me as Evil? Opening the Ethical Debates in Advertising'. PIRC and WWF-UK.
40 Sims, P (2021) 'A Proposal for Restricting Manipulative Advertising in Public Spaces'. *Green House Think Tank*.
41 Rode, P, et al. (2022) 'Democracy and Representation For Emergency Action'. *EGI*, Policy Brief 6.
42 Bazaz, A, et al. (2018) 'Summary for Urban Policymakers: What the IPCC Special Report on Global Warming of 1.5° C Means for Cities'. *IPCC*.
43 See https://rebellion.global/ and their Wikipedia article.
44 Green Party of England and Wales (2021) 'Three Years Since Bristol Declared a Climate Emergency – "Not Enough Has Changed"'. This followed a similar motion in December 2016 in Australia – City of Darebin, 'Climate emergency declaration'.
45 Many of the local climate emergency declarations did not declare a 'state of emergency' as this power is not devolved to local governments in many countries.
46 Rode, P, and Flynn, R (2020) 'Towards a Concept and Framework for Governing Complex Emergencies'. *EGI*, Policy Brief 2, P.9.
47 2021 Emission increases more than offset 2020 emission reduction resulting from the pandemic. IEA (2022) 'Global Energy Review: CO2 Emissions in 2021'. eurostat (2022) 'CO2 emissions from energy use up by more than 6% in 2021', Eurostat News, 24/06/2022.
48 Definition of complex global emergencies, which includes the climate emergency – Rode, P, and Flynn, R (2020) 'Towards a Concept and Framework for Governing Complex Emergencies'. *EGI*, Policy Brief 2.



Box 4. Envisioning Emergency Climate Governance (adapted[52])

Implementing emergency climate governance requires:

- **New governance structures.** Trusted leadership with strategic, tactical and operational roles. Working with and through existing trusted institutions, which are sufficiently resourced.
- **External accountability to evidence and people.** New forms of democratic legitimacy and innovation such as an 'emergency assembly' and a group of scientific advisers. Reinforcing justification for the emergency response ('social proof') by telling the truth and acknowledging the climate reality and scale and complexity of changes required.
- **Collaborative approach.** A caring approach, grounded in justice, co-creating solutions. Combining hierarchical and network governance. Acting at multiple levels through a systems approach (not siloes in organisations or sectors). Clear two-way communication that decentralises power and engages externally. Embedding emergency framing and key indicators, and ensuring acceptance of emergency governance regimes.

This requires four key aspects to be delivered in parallel:

1. Direct incident stabilisation. In case of a climate emergency, this is elimination of all fossil fuels. This is the reverse of many current national and company pledges leaving such difficult actions to 2030, 2040, or even later. This will require standing up to vested interests and focused politics immediately.

- **No new fossil fuel extraction.**
- **Stop expanding infrastructure** that locks-in energy use (e.g. airport expansion[53] and road building[54]), with just transition plans for those losing employment.
- **Rapidly phase out burning fossil fuels**. Something akin to a fossil fuel 'lock-down'.[55]
- **Strategic focus on reducing energy demand**. Energy demand reduction as part of a cap on fossil fuel use would require a whole package of policies to work together (see **Section 3**).

2. Address indirect consequences. Respond to wider impacts, disruption, and then need for redistribution (see **Sections 2.4** and **3.5**).

3. Deliberation and enabling wider response. Establish a climate emergency citizens' assembly[56] with accountability over emergency governance powers, regularly convened as a decision-making body from the outset. Widen participation in setting and evaluating plans and carbon budgets that transform the whole economy sufficiently.

4. Start long-term transformation. Critical to bridge the gap from emergency response to stable long-term vision and a plan to live without fossil fuels – crucially it must include energy demand reduction (see **Sections 2.6** and **3**).

has declared an emergency has so far translated this into rapid and radical action that would be noticeable to the public in the same way that other emergency responses typically are (e.g. responses to Covid-19, terrorism or natural disasters).[49]

The processes of climate emergency governance are fundamentally different to current governance – action and planning must happen together. There is a risk of getting bogged-down in planning before, rather than alongside, a wide range of actions that reduce energy demand. With such a learning-by-doing approach, evaluation is key to provide feedback and continually update plans based on what works. This will help identify hidden challenges. There will be tension between governance driving immediate climate action and plans continually being disrupted and recast to reach (or even exceed) energy and emission reduction targets.[50] This makes climate emergency governance more akin to putting the economy on a war footing, or the nimble, adaptive and collaborative structures needed for post-disaster emergency responses. However a climate emergency will require a state of emergency to continue for years and therefore adds the challenge of sustaining people's

49 Ibid., p.7.
50 Essex, J (2020) 'What Would a UK Climate Emergency Plan that Faces Up to Climate Reality Look Like?'. Green House Think Tank.

limited endurance.[51] What emergency governance might entail is sketched out in **Box 4**.

2.3 Winning Sufficient Support for Sufficient Action

The adoption of climate emergency governance is a collective political choice. As outlined in **Section 2.1**, it is one that will be resisted by those that benefit most from the status quo, who are also likely to be the least affected by climate change. Therefore, this is a choice that can only be made in spite of vested interests, rather than through a complete consensus. The public mandate, agency and power to rethink demand for energy must therefore be won, not waited for.

Widening the consensus behind rethinking energy demand could include a combination of winning elected political power with a shifting of what the public considers politically acceptable at any point in time.[57] This requires a vision for rethinking demand that people believe in, put their trust in and support. However, politicians alone can't bring forth such a different future.

One approach to increasing participation in decision-making is through forms of direct democracy.[58] This is potentially complicated by our cultural addiction to consumerism.[59] If a significant proportion of people are relying on consumerism as a false satisfier in response to unmet emotional, spiritual or physical needs, they do not act in line with their best interests. Although this presents a challenge for approaches relying on increased participation by the majority, it is uncertain whether people are dependent on this cultural addiction to consumerism to such an extent that they would actively oppose changes to rethink demand for energy.

'There is no time left. What we have done so far is what is leading us to the climate disaster. There is no time left for a smooth transition or transformation. Instead we need a metamorphosis of our economies and societies.'

Whatever the extent of its limitations, it seems likely that widening participation will play a key role. It will increase agency in how communities rethink their space and practice to reduce energy demand and respond to climate emergency. This could help overcome the loss of control felt from removal of the 'consumer choice' to use energy without limit, but needs empowered political and community leadership to declare not only that a really positive future is still possible, but that it needs everyone's help to shape it. Such actions are strengthened by 'deep hope' drawn from the acceptance that whilst our shared future has already locked-in climate disasters and disruption, there still remains a fragile possibility that future catastrophe can be avoided.[60] This needs clarity on the step changes needed to rethink energy demand. Emergency responses to energy supply constraints following Russia's invasion of Ukraine provide a glimpse of what is possible in our world in the aftermath of Covid's emergence. However, the governance changes needed to allow these actions to be widened, deepened and sustained are yet to be distilled.

The changes set out above could be supported by a new political settlement that will make lives better for the majority.[61] Politicians need to be clear with the public on what an emergency footing would entail and how much change to energy demand is required. A policy framework for reducing energy demand is explored in **Section 3**.

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51 Climate Change is a complex global emergency, which means it's characterised as being: 'Beyond social memory, uncertainty, unknown feedback, difficult to define. Such Complex emergencies are essentially political in nature and can erode the cultural, civil, political and economic stability of societies.' Rode, P, and Flynn, R (2020) 'Towards a Concept and Framework for Governing Complex Emergencies'. *EGI*, Policy Brief 2, p.4.

52 Adapted from Rode, P, and Flynn, R (2020) 'Towards a Concept and Framework for Governing Complex Emergencies'. *EGI*, Policy Brief 2.

53 Yet every major UK airport has expansion plans. Essex, J, and Sims, P (2021) 'Transport Investment: The Zero Carbon Challenge'. *Green House Think Tank*, Figure 3.

54 For example, changing the EU's Trans-European Transport Network programmes. See Ibid., Table 1.

55 Chapman, A (2021) 'Stopping Fossil Fuel Extraction – a Lockdown Approach'. *Green House Think Tank*.

56 Cowan, D (2019) 'What is a Citizens' Assembly?' *Electoral Reform Society*.

57 The range of policies considered acceptable by the general public at a given time – 'Overton window'. *Wikipedia*.

58 Cowan, D (2019) 'What is a Citizens' Assembly?' *Electoral Reform Society*.

59 Foster, J (2022) 'Rethinking Consumerism'. *Green House Think Tank*.

60 Foster, J (2017) 'Towards Deep Hope: Climate Tragedy, Realism and Policy'. *Green House Think Tank*.

61 That is, the social contract between population and the state which governs them.

2.4 Attending to the Impacts of Disruption

Disruption is a necessary part of the rapid change needed as it is now too late for incremental, orderly transition over a generation (**Section 1.2**). Rising fossil fuel energy supply costs, whether from global market shocks or escalating carbon taxes, will disrupt social norms and business practices. Higher energy costs are important to drive demand reduction measures alongside energy efficiency and technological changes. However, it could have a catastrophic impact on many households and small businesses, unless government intervenes and actively supports the most vulnerable individuals and communities. Therefore, emergency governance must provide support throughout disruption to avoid the risk of non-compliance and social unrest. Politics should intervene early to avert such crises by bringing forward the more radical social policies needed. Key considerations should ensure:

- Just transition plans (to create new jobs together with wider support) sit at the heart of government (**Section 3.4**).[62]
- Everyone's basic needs are met such as through a Universal Basic Income and Universal Basic Services (**Section 3.4**).
- Everyone contributes to efforts to reduce energy use, including elites and other high-energy consumers. This could garner wide popular support, including for wider measures.
- Sufficient support is available through local governments to resource communities to support themselves throughout disruption (**Section 2.7**).

Examples of where this has been successful in the past are included in **Box 5**. In contrast, the failure to address the social impact of a proposed fuel price rise in France led to widespread social unrest led by the *gilets jaunes* (yellow vest movement). Choosing to rethink demand requires politics that leave no one behind.

'We should aim for an orderly transition, but accept that we are now in the era of disruptive change.'

Box 5. Learning from History: Redistribution and Welfare Policies in a Crisis

There are historical examples of disruption where crises led to redistribution or welfare policies being put in place. For example, redistribution underpinned the food rationing introduced by France in response to social unrest during World War I.[63] The start of World War II heralded the establishment of a network of Citizens Advice Bureaux, at first to support and rehouse those made homeless in the UK. And health insurance was introduced in France and the National Health Service and welfare system in the UK after World War II.

2.5 Embracing Post-growth Economics

Governance structures will also need to cope with disruptions connected with the shift towards post-growth economics, as changes in energy use and economics evolve together. Energy use and growth are inextricably linked.[64,65] Significant reductions of resource use and greenhouse gas emissions are not possible without sufficiency-oriented strategies and strict enforcement of carbon budgets.[66]

In shifting away from an economy focused on growth it is important to note three key features about how the economies of the UK and Europe have changed since the 1970s:

- Economic growth has become decoupled from jobs, with the focus being instead on capital accumulation.
- There is a growing disconnect between economic GDP growth and human wellbeing across the over-industrialised world. This is particularly because the gains from economic growth are not being fairly distributed.
- As already stated, growth has led to absolute increases in carbon emissions and expedited ecological breakdown.

Constraining energy supplies pushes up prices, as we have seen in the case of reduced Russian oil and gas supplies following the invasion of Ukraine in February

62 Chapman, A, et al. (2018) 'Unlocking the Job Potential of Zero Carbon'. *Green House Think Tank*.
63 Szuba, M (2022) 'Energy Sobriety: Holy Grail of the Green Transition?' *GEF*.
64 There is no empirical evidence of the decoupling of economic growth from environmental pressures near the scale needed: Parrique, T, et al. (2019) *Decoupling Debunked. Evidence and arguments against green growth as a sole strategy for sustainability. A study edited by the European Environment Bureau EEB.* European Environment Bureau.
65 In 2021 global GDP rose 5.9% and was reflected in a 6% rise in global carbon emissions – IEA (2022) 'Global Energy Review: CO2 Emissions in 2021'.
66 Haberl, H, et al. (2020) 'A systematic review of the evidence on decoupling of GDP, resource use and GHG emissions, part II: Synthesizing the insights'. *Environmental Research Letters* 15.

2022 and in the oil price shocks of the 1970s and 2000s. Carbon taxes and controls on fossil fuel extraction are important and will also constrain energy supply. Higher energy market prices tend to suppress growth and thereby impact the whole economy. However, the overall price of energy in a highly renewable system depends on numerous factors as explored in **Box 6**.

Our economies may already be in the era of post-growth economics as 'once there is enough capital then returns of capital fall into stagnation'. Low and declining growth rates might already be the new normal, which risks increasing inequality and rising populism.[67] If wages are static then rising profits with a declining wage share will drive inequality. Unless we address this growing inequality then demand reduction will be unsustainable. Therefore, we must now **choose an economics of redistribution over growth**.

Box 6. Will 'Renewable Energy for All' Be Cheaper or More Expensive?

Renewable energy is now significantly cheaper to generate than fossil fuels in many markets and prices for renewable energy supplied directly (e.g. privately or community owned) are, generally speaking, falling. However, the overall cost of renewable energy provision depends on the level of energy storage (e.g. pumped storage, batteries, heat storage), flexibility (demand side response, flexible tariffs, smart EV charging) and presence of baseload energy (e.g. nuclear, etc.)

In summary, the post-growth dynamics explored above present additional challenges for our systems of governance. Rethinking demand for energy would therefore mean a shift in both the overall objective of the economy and a stronger focus on redistributive policies (see **Section 3.4**).

2.6 Redefining the Objective (Governance KPIs)

'We must go beyond seeing the good life as needing to "buy things we don't need, with money we don't have, to impress people you don't care about (Fight Club)".' [68]

Rethinking demand for energy, and therefore embracing a post-growth economy, requires the single metric of GDP growth to be abandoned as the ultimate objective of the economy. This leads to the questions: what should it be replaced with and how should our societies agree this.

The case is made for the economy to be redirected towards providing sufficient wellbeing for all, within planetary boundaries, as explored in **Box 7.**

The choosing, reviewing and reporting on such new economic governance indicators should be done in a way that is accountable to all citizens and not favour certain groups or interests. One participatory approach to this is outlined in **Box 8**.

2.7 Reforming Systems of Governance

This report has already outlined the failures and inadequacy of current governance systems, the need for emergency governance now, and the importance of governance changes to redefine the growth-focused purpose of the economy. With this, there remains an inherent tension between reforming existing governance systems and establishing emergency governance to implement immediate changes.[71] Governance systems generally take a long time to evolve and stabilise yet the need for emergency governance implies not only immediate interventions but also the temporary suspension and/or step changes to existing governance systems.

These tensions cannot be easily resolved, but must be considered in how governance is reformed. This section concludes by outlining a number of areas where political choices are needed to reform governance through:

67 Jackson, T (2019) 'The Post Growth Challenge: Secular Stagnation, Inequality and the Limits to Growth'. *CUSP*. Ecological Economics 156.
68 See quote from Edward Norton, *Fight Club*.
69 See, for example, 'Alternative Economic Indicators'. *USDN*.
70 'Better Life Index'. *OECD*.
71 'Emergency Governance for Cities and Regions'. LSE.

Box 7. Alternative Economic Indicators

These generally take the form of a set of indicators that measure wellbeing in different ways. Options include the Genuine Progress Indicator (GPI) and measures of Gross National Happiness.[69] The growing support for an alternative is reflected by the likes of the Organisation of Economic Cooperation and Development (OECD), who say that there *'is more to life than the cold numbers of GDP'* in introducing its Better Life Index, designed to compare wellbeing between countries.[70] It is vital that economic priorities include reducing inequality and ensuring energy demand reduction delivers sufficiently fast decarbonisation. Other economic priorities could include high quality and decently paid jobs and better public health. In some cases GDP could remain a secondary target.

- Addressing failures in transparency and accountability
- Increasing participation and localisation
- Improving evaluation and reporting
- Redirecting investment
- Reforming corporate and global governance.

Maximising Transparency and Accountability

Our societies must be intrinsically linked to political structures. Stronger democracy, greater participation, transparency and honesty in decision-making, nationally and locally, is needed. The influence of vested interests must be severely curtailed and transparently reported which requires at least:

- **Redefining lobbying and tightening lobbying regulations.** Cap hours of access to elected politicians, and ban the practice of revolving doors with corporate interests, during and after political careers.
- **Ensuring full transparency of access and influence throughout policy-making.** Restrict access to key committees so corporate interests cannot control systems or have an effective veto on more effective change.
- **Removing the influence of money from politics.**
- **Limiting time in power** (both corporate and political), recognising that power itself corrupts.
- **Call out where business-as-usual actors resist change** (e.g. housing associations, energy companies).[72]

Participation and Localisation

Democratic participation should be widened to give greater power to citizens, working class movements and trade unions, campaigning, and direct action on the streets. Active participation could ensure politicians always respond to citizens first.

Embedding participation and limiting the influence of vested interests both should help to strengthen democracy (as noted above). This would be aided by stronger devolution of regulatory powers, together with the resources and finance needed. In addition, regulatory frameworks should be used to enable community-scale interventions (such as to own and generate a substantial amount of the energy needed themselves). Such community-scale interventions can increase local compliance and legitimacy, thus helping policy change to be successful (see **Section 3.3**).

Increased participation by citizens should reposition them (as opposed to corporates, elites or just politicians themselves) as those who ultimately hold political power, not just on the days before and after an election.[73] Democratic engagement should be widened, for example through deliberative democracy in communities (see **Sections 2.3** and **3.3**). Translating decisions made into national and local policies could follow coordinated 'deliberation days'.

Box 8. A Citizen Convention to Agree New Economic Objectives

The alternative to GDP could be democratically discussed and decided upon, and should extend to a commitment to end the push for ever more development and physical growth and associated resource use, and to set carbon budgets that prioritise wellbeing. One possible solution is a citizen's convention that is commissioned and reports back to national government, supported by an expert group. This could be similar to that explored in **Box 9**.

72 Newell, P, and Martin, A (2020) 'Towards a New Politics of Rapid Transition'. *EIT Climate KIC*.

73 In some countries, including the UK, there is also a need to overhaul the electoral system so all have an equal stake in politics.

Evaluation of Policy Effectiveness

Rigorous new processes are also needed to evaluate policy effectiveness. This should be guided by economic models that simulate actual changes in consumption and production and reflect how the overall economy responds. Evaluation frameworks should be publicly accountable and linked to transparent reporting of annual carbon budgets. Transparent reporting on the influence of vested interests is also required. All evaluation should be held to account both within and beyond government.

The current accountability and evaluation of climate progress in Europe is not linked to ongoing citizen engagement, with no mandate for governments to act in response. For example, the UK has an independent Climate Change Committee (UKCCC) but its membership is drawn from experts, and the government is not bound to act on its recommendations.[74] Similarly, the French Convention for the Climate (Convention Citoyenne pour le Climat) was a one off process without a role in evaluating the results of implementing the policies agreed upon.[75] A proposal for a permanent citizens' assembly is set out in **Box 9**.

'We need a Ministry of Investment.'

In some cases legal challenges can result in changes to individual policies and to wider systems of governance. These ensure policies are effective by challenging inconsistencies (See **Box 10**).

Box 9. The Case for a Permanent Citizens' Assembly to Strengthen Independent Evaluation Mechanisms and Drive Accountability

A permanent citizens' assembly and an independently appointed permanent secretariat [such as the UKCCC] that is able to evaluate policies, governance and the effectiveness of implement ation as well as to legally mandate governments to act, would mean governments are responsible to citizens to deliver on climate commitments. This could also increase agency for collective action to reduce energy demand.[76]

Rethinking Investment

Most countries have undeclared economic investment strategies that grow the demand for energy. Shifting to a post-growth economy must break the cycle of building ever more infrastructure, housing, industrial and retail capacity, which ratchets up increased production and consumption of products, energy and wider resource dependencies.[77] Reducing energy and material throughput should be reflected in a massive reduction in investment in capital assets. New governance structures, tools, modelling and strategies must deliberately constrain and redirect patterns of investment.

Governance changes are needed to redirect investment in these ways. For example, road widening would be replaced by investment in new bus routes, whilst reuse and recycling jobs will cut investment in waste disposal. In such ways redirected investment will decarbonise both production and consumption whilst transforming rather than continuing to grow infrastructure systems. The policy changes to reduce demand (see **Section 3**) should be supported by significant changes in public (and private) spending brought about through governance changes:

1. **Reform appraisal of public sector investment decisions** to separately account and prioritise climate, biodiversity and social impacts.[78]
2. **Make economic strategies publicly accountable** with explicit objectives in place of hidden assumptions. Cost-benefit analysis and return on investment should be replaced by measuring reductions in carbon emissions and energy use.[79]
3. **Assess energy use and climate impacts of all investments.** As energy policy, like health policy, cuts across all sectors, it should be reflected in decision-making across governments, not continue to be trumped by the current primacy of economic and finance ministries.

74 See the UKCCC website.
75 See the Convention Citoyenne pour le Climat website.
76 Citizens Assemblies (2022) 'European Citizens' Assembly: A New Model for Decision-Making'; Extinction Rebellion, 'Citizens' Assembly'.
77 This is the level of investment in fixed capital assets. See Essex J, (2014) 'How to Make Do and Mend the Economy': Rethinking Investment Strategies for Construction and Industry to Meet the Challenge of Sustainability. *Green House Think Tank*.
78 For example, the UK Treasury Green Book is used to justify and prioritise investment without any link to carbon budgets, let alone energy demand reduction. The procedures should be updated to shift the impact of public investment decisions – Dawney, E (2021) 'Measuring What Matters: Updating the Treasury's 'Green Book' for the Climate Emergency'. *Green House Think Tank*.
79 For example, measuring the energy return on energy invested (EROI). See Essex J, (2014) 'How to Make Do and Mend the Economy': Rethinking Investment Strategies for Construction and Industry to Meet the Challenge of Sustainability. *Green House Think Tank*.

Box 10. The Role of Legal Challenges in Shifting Governance and Policies

There are a growing number of legal challenges to strengthen climate action across Europe.[80] These include:

- Where national policy is not aligned to international commitments.[81]
- Where climate commitments are not reflected in individual investment decisions.[82]
- Where policies do not prioritise demand reduction.[83]

'Investment patterns in the economy are the link between the present and the future.'

Changing Corporate and International Governance Systems

Corporations (including multinational corporations) often prioritise maximising short-term return on investment (alongside longer-term capital accumulation) with wider social and environmental aspects carrying less weight or being side-lined from key decisions. The same is true of international institutions, who are often subservient to economic and political power. This is demonstrated in the relative weight given to UNFCCC mechanisms to voluntarily report progress against climate agreements compared to World Trade Organization rules. Proposals for reform are widely discussed elsewhere. Some aspects particularly relevant to reducing energy demand include:

- **Mandating carbon and energy reduction** (with higher precedence over competition law and trade rules). Voluntary corporate commitments are insufficient.[84,85]
- **Replacing the UK and EU emission trading schemes.** These are corrupt and expensive. A carbon tax at source would be a clearer and simpler measure.
- **Extending corporate governance laws.** New regulations could redefine the purpose of companies and define ecological and social harm as anti-competitive.
- **Reforming trade rules and international governance.** This should include trade rules and agreements, especially between the global north and south. The Energy Charter Treaty should be dismantled and WTO rules be reformed.[86]

80 Gallage-Alwis, S, and Eaton, S (2021) 'The Rise of Climate Change Litigation in Europe'. *Signature*.

81 For example, the 2019 decision by the Dutch Supreme Court found that the government needed to urgently and significantly reduce carbon emissions (see report here).

82 For example, a legal challenge of the UK government decision to permit a 3rd runway at Heathrow Airport failed - but the UK Supreme Court failed to disclose that the scheme was not assessed against the Paris Agreement's preference to limit global warming to 1.5°C above pre-industrial levels. This highlights the need to strengthen legal governance too. See Higham, C (2021) 'The Emerging Use of the Law as a Vehicle for Climate Protest'. *LSE*.

83 At the time of writing, legal challenges were ongoing against the UK government's failure to have policies to:
– insulate all homes (End Fuel Poverty Coalition (2022) 'Legal Challenge Against Government's Fuel Poverty Failings Launched')
– to curb air travel (Grant, A (2022) 'Leeds Bradford Airport Expansion Campaigners Taking Government to Court Over "fantasy" Jet Zero Strategy'. *Yorkshire Evening Post*)
– to increase rather than curtail demand for road traffic (Transport Action Network, 'Our Legal Challenges').

84 For example, the UK's request for companies procuring major government contracts to maintain carbon reduction plans is not enforced. UK Government (2021) 'Procurement Policy Note 06/21: Taking Account of Carbon Reduction Plans in the Procurement of Major Government Contracts'.

85 Other reporting standards for corporate governance of climate action tend to be voluntary: Global Reporting Initiative and CDP.

86 For example see Dearden, N (2020) 'Trade Secrets: The Truth About the US Trade Deal and How We Can Stop It'. *Global Justice Now*; and Dietrich, M (2021) 'Should the European Union Fix, Leave or Kill the Energy Charter Treaty?'. *Business & Human Rights Resource Centre*.

Section 3. Policies to Rethink Energy Demand

This section highlights the degree to which rethinking energy demand requires new policies across all sectors. This should first prioritise non-energy 'sufficiency policies' above supply-side measures and energy efficiency, such as by using the Avoid-Shift-Improve policy hierarchy (**Section 3.1**). It then considers how packages of interventions need to be joined-up to transform practice alongside infrastructure (**Section 3.2**). Effective policies need to be adequately bold whilst combining engagement processes with both carrots (incentives) and sticks (regulations) (**Section 3.3**). Crucially, it is vital that redistribution is integrated into energy demand reduction policies (**Section 3.4**) and that resilience is embedded in interventions (**Section 3.5**).

3.1 Prioritise Sufficiency

Energy sufficiency is defined as, *'aiming at fulfilling everyone's need for energy services while adjusting their nature and amount in order to keep energy demand at a level which does not endanger the carrying capacity of the earth'*.[87] Sufficiency policies are **non-energy** policies.[88] Sufficiency policies are defined as a set of measures and daily practices *that avoid the demand* for energy, materials, land, water and other natural resources whilst *delivering wellbeing for all within the planetary boundaries*.[89]

As set out in **Section 1**, energy efficiency and renewable energy installation alone are not enough, nor should they be considered first. Rethinking demand for energy must therefore be prioritised to unlock much greater and faster decarbonisation. But such polices are often missing or under-developed. This is why frameworks such as **Avoid-Shift-Improve** have been created to be distinguish and prioritise different types of policy intervention.

In order to deliver sufficiency:

- Our societies must place far greater weight on **avoiding** the need for energy-intensive and high-carbon products and services in the first place. This includes phasing out activities that cannot be decarbonised and stopping the continued increase in the scale of everything (e.g. homes, fridges, cars, built environment).

- This will reframe how we **shift** to more energy efficient production and consumption, as opposed to driving growth in energy demand. This would represent a shift from the current individualised consumer society to a more redistributive society that repurposes and shares what we already have, using existing products, buildings and infrastructure differently.

- Together these will **limit** the need for further improvements by substantially reducing the amount of new development, production and consumption. In turn this will drastically reduce the amount of renewable energy (as well as materials and infrastructure) needed to fully decarbonise our societies.

Such an Avoid-Shift-Improve framework has been used to ensure demand reduction is prioritised through transport strategies,[90] and is consistent with longstanding hierarchies used to guide reduced energy use in buildings[91,92] and for the circular economy[93]. This is also the demand reduction framework in the IPCC's Sixth Assessment Report.[94] In **Figure 1** this Avoid-Shift-Improve framework is used to set out examples of policies to reduce energy demand in the areas of heating buildings, eating meat and dairy, and transport (notably driving and flying).

87 Marignac, Y (2022, 1 April) 'Introducing Energy Sufficiency and the Need for Sufficiency Modelling'. Berlin Energy Transition Dialogue 22 [Webinar]. See also 'Energy Sufficiency: The Missing Driver on the Way to Carbon Neutrality in "Catching Up Economies"'. *Cactus*.

88 Saheb, Y (2021) 'COP26: Sufficiency Should Be First'. *Buildings & Cities*.

89 Saheb, Y (2022, 1 April) 'The need for sufficiency policies in the international context'. Berlin Energy Transition Dialogue 22 [Webinar]. See also 'Energy Sufficiency: The Missing Driver on the Way to Carbon Neutrality in "Catching Up Economies"'. *Cactus*.

90 For example, 'Sustainable Transport: Avoid-Shift–Improve'. *Innotrans*.

91 Be Lean, be clean and then be green – 'The London Plan: Chapter Five London's Response To Climate Change – Policy 5.2 Minimising Carbon Dioxide emissions'. *Mayor of London* and *London Assembly*.

92 Saheb, Y, et al. (2018) 'The Zero Energy Concept: Making the Whole Greater Than the Sum of the Parts to Meet the Paris Climate Agreement's Objectives'. *Current Opinion in Environmental Sustainability* 30, pp.138–150.

93 Reduce and reuse before recycling, recovery and disposal – European Commission, 'Waste Framework Directive'.

94 IPCC (2022) 'IPCC Sixth Assessment Report: Mitigation of Climate Change'.

Figure 1. The Avoid–Shift–Improve Framework to Prioritise Energy Demand

Firstly, Avoid excessive consumption and reduce demand for energy-intensive products and services:

Stop expanding infrastructure and the built environment as this both uses energy for its construction and then drives more energy through its use. Phase out blast furnace steelmaking and cement production.[95]

Reduce overall demand for heating including by changing planning constraints on building size and building standards (including passive heating and cooling as standard) and social norms for heating and cooling.

Replace airport expansion with decommissioning of airport capacity. Ban private jets and domestic flights. Limit airfreight. Produce fewer, smaller cars. Phase out long-haul flights and all fossil fuel powered shipping.[96]

Avoid the need for travel in the first place.[97]

Phase out factory farming, reduce industrialisation of food and minimise need for refrigeration.[98]

Ban advertising of activities that need to be reduced (e.g. car purchases, flying).

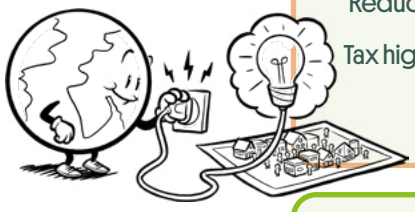
Then, Shift (and share):

Repurpose existing assets (rather than replacing or expanding) such as repurposing buildings and reallocating existing road space to bus and cycle lanes.

Shift journeys from private car to public transport, walking and cycling. Replace business and leisure flights with rail travel, more local holidays and online meetings. Ban next day deliveries to consolidate deliveries.

Reduce the need for heating in buildings through energy efficiency retrofit.

Tax high-carbon activities and incentivise lower carbon/energy alternatives, such as SUVs to small electric vehicles.



Then Improve existing consumption patterns through supply-side measures:

Accelerate the replacement of gas boilers with heat pumps.

Replace petrol/diesel cars with electric vehicles.

95 Hydrogen-powered and electric planes are not (yet) financially viable or commercially operational. Use of biofuels for flights or shipping fuel will compete directly with food production, which will be constrained by a reduction of energy-intensive nitrogen fertilisers and the pressures of already locked-in changes to weather patterns and sea levels.

96 The chemical processes of cement production and blast-furnace iron production to then make steel cannot be easily decarbonised. Use of hydrogen to make steel is still being piloted and is very energy intensive. Electric arc furnaces can re-melt steel scrap as part of a circular economy.

97 Such as reflected in Scotland's new transport policy to reduce total car miles by 20% by 2030. Transport Scotland (2021) 'Reducing Car Use for a Healthier, Fairer and Greener Scotland'.

98 Chapter 3 of Rinkinen, J, et al. (2020) *Conceptualising demand: A distinctive approach to consumption and practice*. Routledge.

3.2 Joined-up Policies

It is fundamental that policy development to rethink energy demand understands and tackles the root causes that shape that demand. This is explored through research in the areas of 'practice theory' and 'systems of provisioning' (See **Box 11**).

Box 11. Introducing Practice Theory and Systems of Provisioning

- Practice theory explains society, culture and individuals' daily practice as the result of existing structures and individual agency.[99]
- Systems of provisioning of a good or service is the combination of the economic and social factors that go into both its creation and its use.[100]

Policy development needs to:

- Make visible policies that affect energy demand, and address multiple sectors consistently
- Change social and business practices alongside repurposing infrastructure, including through providing public information and education as well as direct interventions and key practices (e.g. using taxes and subsidies)
- Tackle supply and demand in parallel.[101]

Box 12. Invisible Energy Policies

Many policies create energy demand without even acknowledging this, so increased energy use and carbon emissions are under the radar – invisible.[104] A good example of this is the way room temperatures reflect building regulations that guide expectations that rooms should be heated or cooled to 18–22°C.[105] It is possible to change such standards quickly. For example, a new Spanish law was introduced in August 2022 to limit the heating and cooling of all buildings (except homes) with heating only up to 19°C and cooling not below 27°C.

Box 13. Examples of Intervention Packages to Shift Social and Business Practices

Transport:

- Re-procure home care into neighbourhood contracts so visits can be on foot or bike.
- Ban short-haul flights *alongside* cheaper train travel, advertising bans, re-localising tourism and changing business culture to view flights as a cost not a perk.

Home heating:

- Retrofit *alongside* educating on living comfortably in a more insulated home.

This means individual sectors such as energy or transport cannot be considered in isolation, as is well established in health. Much current energy demand is not made by energy policy or one area of policy alone.[102] Many policies that sustain and increase energy demand are considered normal, and much of this is invisible (see **Box 12**).[103]

Public awareness campaigns can change how we live, such as the temperature we choose to wash clothes. However, the development of policy packages requires a fundamental shift away from the current over-reliance on the dominant social psychological approaches such as the 'ABC model' (people have an **a**ttitude and then **b**ehave in a certain way, which has a **c**ontext).[106] Instead greater reliance and deeper understanding of 'practice theory' is required, which has so far had only a limited impact on policies.[107]

Far more significant changes occur when social and business practices are changed (including through education) alongside wider systems: infrastructure; buildings; and whole systems of service provision, contracts and supply chains. Policies need to combine different physical provision with education so the changes become easier and are rewarded – as highlighted in **Box 13**. Moreover, provisioning systems have an irreducible cultural element which plays a significant role in driving demand. It is critical the new social norms are embedded in institutions (e.g.

99 Shove, E, at al. (2012) *The Dynamics of Social Practice: Everyday Life and How it Changes*. Sage.
100 Bayliss, K, and Fine, B (2020) *A Guide to Systems of provision: Who Gets What, How and Why*. Palgrave Macmillan.
101 An example of the interdependence of supply and demand is seen in dairy farming: when demand for full fat milk fell, the supply of cheese went up – Mearman, A (2022) 'A Guide to the Systems of Provision Approach: A Review'. *Green House Think Tank*.
102 See also an animated demand video – 'Episode 5 - Using Non Energy Policies to Reduce Demand' *Demand Centre*. YouTube.
103 See Shove, E (2018) 'What is Wrong with Energy Efficiency?' *Building Research & Information* 46:7, pp.779–789.
104 Royston, S, et al. (2018) 'Invisible Energy Policy: A New Energy for Energy Demand Reduction'. *Energy Policy* 123.
105 Elizabeth Shove, Gordon Walker and Sam Brown (2014) 'Material Culture, Room Temperature and the Social Organisation of Thermal Energy'. *Journal of Material Culture* 19(2), pp.113–124.
106 Shove, E (2009) 'Beyond the ABC: Climate Change Policy and Theories of Social Change'. *Environment and Planning A* 42, pp.1273–1285.
107 Watson, M, et al. (2020) 'Challenges and Opportunities for Re-framing Resource Use Policy with Practice Theories: The Change Points Approach'. *Global Environmental Change* 62.

schools and hospitals) and integrated into our cultures (e.g. through the media).

3.3 Effective Interventions

In addition to the joined-up approach to policy design set out above, it is important to deliver interventions that are effective enough. Acceptance and compliance are critical for this. Effective interventions require the right balance of participatory design alongside education, advertising restrictions, investment, cultural exploration, regulations and enforcement. Effective interventions give people meaningful choices and as well as clear direction within wider collective changes set out above.

It is important to acknowledge that for every sector and activity there is a range of possible types of intervention, even if some seem easy to dismiss as implausible. A progression from weaker to stronger types of intervention is presented in **Figure 2**. The most appropriate measures will vary with time, place and policy area.

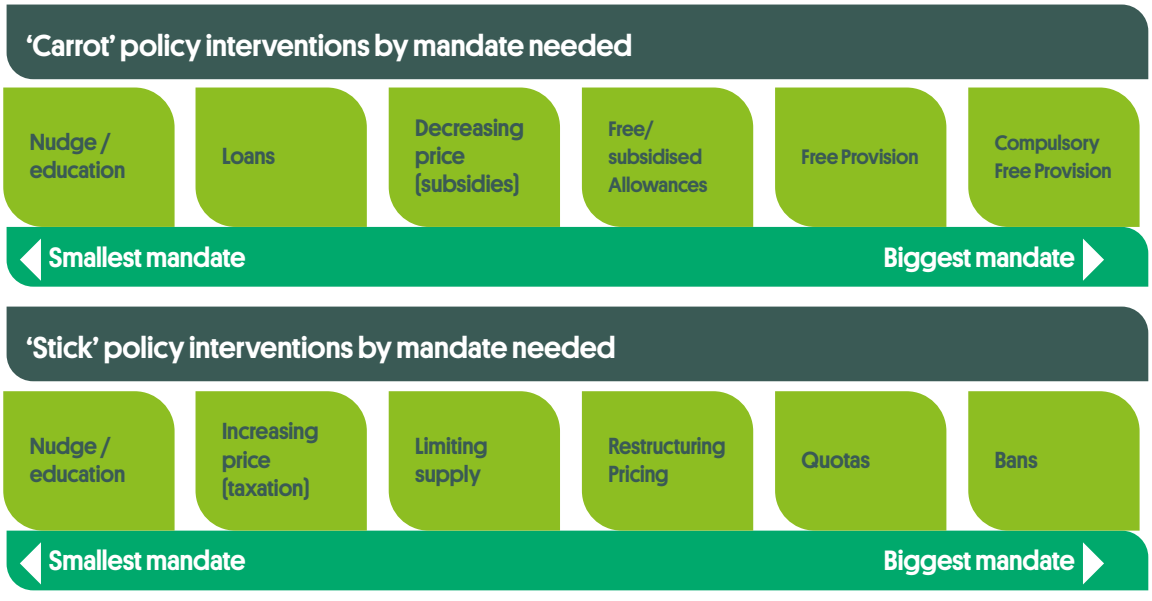
Increased engagement, participation and involvement in decision-making tends to raise individual compliance, and helps improve the effectiveness of policy development, implementation and enforcement. For policy interventions to be effective in delivering the energy demand reduction required, they must adjust both the boldness of the intervention, and the level of participation together. **Figure 3** outlines the different degrees of public mandate created by different levels of engagement. The more participatory the process of deciding on and implementing the interventions, the increasingly strong types of incentive (carrots) and regulation (sticks) which can gain acceptance and compliance.

Effective interventions often apply multiple policies that both regulate (stick) and incentivise (carrot). For instance, carbon tax of aviation fuel combined with subsidising train travel provides a strong motivation for change. There are still net subsidies for fossil fuels in production and consumption.[108] These all need to be reversed.

Such shifts should provide strong financial incentives for business to invest, and change daily practices.[109] To increase the scale and rate of change a policy delivers, there is a need to shift to the right of the ranges presented in **Figure 2** until sufficient change is achieved. This may require evaluation and iteration (**Section 2.7**). In some areas a whole architecture of policy measures may be required incorporating multiple incentives, disincentives and forms of participation. **Box 14** explores the scope of restructuring pricing to unlocking changes to people's day-to-day activities in difficult policy areas.

However, it is rare for prices to be effective on their own – for the reasons explored in **Sections 3.2** and **3.3**.

Figure 2. The Range of Different Types of Policy Intervention



108 Essex, J, et al. (2021) 'Global Public Investment Requirements for Zero Carbon: Rethinking International Climate Finance, Aid and Transport Investment'. *Green House Think Tank*.
109 See Supercharge Me website.
110 Stirling, A, and Caddick, D (2022) 'Warm Homes, Cool Planet: A Package to Fix the UK's Energy Price Crisis'. *New Economics Foundation*.
111 See a free ride website.

Figure 3. The Degrees of Democratic Participation by Mandate Delivered

Box 14. Restructuring Pricing of Energy and Energy Services

There is a tension between the need to increase prices for fossil fuels and energy-intensive activities, and the need to ensure everyone can afford alternatives and that these meet their basic needs. Restructuring prices from linear pay-per-use to differential pricing (charging less for the first units used) or fixed pricing can help avoid this. For example, differential energy pricing would minimise fuel poverty whilst discouraging high-energy consumption ways of living for those that can afford to pay.[110] Similarly, a subsidised fixed price to access public transport combined with road pricing and vehicle tax reform could ensure it's never cheaper to drive. Equally, frequent flyer levies focus discouragement on excessive lifestyles.[111]

Behaviour and Culture

Encouragement alone (also referred to as nudge theory) relies on behaviour change alone. This often fails to address the underlying motivations and cultural addiction behind actions, so risks backfiring.[112] Nudging behaviour is not enough. Education has a role not just in shaping new social norms, but in making behaviours that work against rethinking energy demand and the common interest socially unacceptable (see **Box 15**). There may even be a role for additional protected characteristics to be agreed, in order to normalise low energy ways of living by limiting discrimination (e.g. such as against not driving or flying) [114]

It is also important to ensure the effectiveness of policies to rethink energy demand aren't undermined by advertising or other corporate influences on culture. Paid social influencers and TV shows normalise luxury cars and fast fashion. How can people come to terms with the fact there is no 'away' whilst adverts and social media normalise single-use products and throw-away culture? Advertising drives up consumption. It was estimated that the UK advertising sector's impact led to increasing carbon emissions by 186 $MtCO_2$ (28% of all UK territorial carbon emissions) in 2019.[115] It is critical to address these motivators that perpetuate high-energy social norms to ensure interventions for rethinking demand are effective (see **Box 16**).

Ultimately, for policies to be effective, perverse cost disparities between fossil fuel dependent options and the alternatives need addressing. These are still commonplace, not least because of the net fossil fuel subsidies.[118] For example, flights between UK

Box 15. Seat Belts: An Example of Education Enabling Effective Legislation

Education can lay the groundwork for legislative change, as was the case for seat belts in cars. The meaning around safety in cars was changed quickly but seat belts needed to become mandatory for car companies to fit them.[113]

112 Newell, P, et al. (2021) 'Changing our Ways? Behaviour Change and the Climate Crisis'. *The Cambridge Sustainability Commission on Scaling Behaviour Change*, p.26.
113 Kaye, BK, et al. (1995) 'Increasing Seat Belt Use Through PI&E and Enforcement: The Thumbs Up Campaign'. *Journal of Safety Research 26*(4), pp.235–245.
114 The UK Equality Act (2010) defines protected characteristics as age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation.
115 Purpose Disruptors (2021) 'Advertised Emissions: The Carbon Emissions Generated by UK Advertising'.
116 Rapid Transition Alliance (2022) 'Waking-Up to Adverts Promoting Polluting Lifestyles'.
117 Sims, P (2021) 'A Proposal for Restricting Manipulative Advertising in Public Spaces'. *Green House Think Tank*.
118 Essex, J, et al. (2021) 'Global Public Investment Requirements for Zero Carbon: Rethinking International Climate Finance, Aid and Transport Investment'. *Green House Think Tank*.

cities are currently twice as expensive as trains, but six times more carbon intensive.[119] Restructuring of prices should help create clear price incentives to change business and social practices (see **Box 14** above). This should shift both consumer choices and business investment decisions. Stronger mandates (see **Figure 3**) may require a greater level of engagement to achieve policy compliance, but then achieve greater change to social and business practices.

3.4 Redistribution

'Two thirds of UK families could be in fuel poverty this winter with the predicted rise of the fuel price cap. That is catastrophic. It is not a cost of living crisis: it is a social emergency.'[120]

Choosing to rethink demand for energy means delivering 1.5°C ways of living for all.[121] But the above policies will not be enough to achieve this unless there is fair distribution of the available renewable energy. Europe is over-industrialised and has sufficient wealth to ensure wellbeing for all, but currently it is unequally distributed. The richest 10% of Europeans and UK citizens are responsible for 36% of carbon emissions. Wilkinson and Pickett[122] evidenced how inequality impacts everyone, not just the poorest.

If we accept there will be a limited and reduced energy supply (as set out in **Section 1**) and that everyone has a human right to have their basic needs met, then there is a strong argument our society should limit unequal access to energy by more fairly distributing it. Such redistribution is a choice, but not doing so affects everyone, and risks social unrest and potentially institutional collapse (see **Section 2.4**), as well as failing to limit climate change. Three types of redistributive economic policies are explored below:

- Redistribution as part of energy demand reduction programmes
- Wealth and income redistribution
- Redistribution of work and livelihood opportunities.

Such policy interventions can be used to distribute the costs and benefits of rethinking energy demand. This is not only essential to ensure people do not lose out, but will also shape the nature and priority of policy choices, for rethinking energy production as well as energy demand.

Redistribution as Part of Energy Demand Reduction Programmes

This section has already introduced the scope of potential interventions to help rethink energy demand – policies like restructuring pricing (**Box 14**), quotas, allowances and bans that mean that people's access to energy and energy services is not purely based on the ability to pay. It is also possible to use revenue from carbon taxes or other financial disincentives to support communities and individuals most affected by interventions. These are all ways of redistributing resources. The following sub-sections explore some key options identified.

Box 16. How Much Should Advertising Be Restricted?

There is a strong case for comprehensive reform of advertising regulations. Three proposals are:

Ban advertising high-carbon products[117]

Restrict manipulative advertising in public spaces to create cultural space for public information and engagement[118]

Ban all advertising during a climate emergency, as this could raise emissions by up to 28% (see above).

Social funds. Taxation of unsustainable production and consumption can be used to create a social fund to support the ecological transition. This has been trialled in both Switzerland and Canada,[123] and the (limited) social fund accompanying the European Green Deal.[124]

119 Bell, L (2021) 'UK Domestic Flights Nearly 50% Cheaper Than the Train, But Six Times Worse for Carbon'. *Which?*.
120 Crerar, Pippa (2022, 19 August) 'Two-thirds of UK Families Could Be in Fuel Poverty by January, Research Finds'. *The Guardian*.
121 HotorCool, '1.5-Degree Lifestyles'.
122 The impacts of inequality affect rich and poor alike. See Wilkinson, R, and Pickett, K (2009) *The Spirit Level: Why More Equal Societies Almost Always Do Better*.
123 Switzerland: Swiss Government (2021) 'Taxe sur le CO2 et taxe sur les billets d'avion'. Canada: Lobby Climatique Citoyen (2021) 'Le revenu climatique au Canada'. Statement of 3,500 economists in favour of carbon dividends: 'Economists' Statement on Carbon Dividends'.
124 European commission, 'Social Climate Fund'.

Quotas. Reducing energy supply will increase prices and have distributional impacts. Introducing quotas and prioritising the use of scarce resources for essential services and needs is fairer. This applies to energy now as was the case for food and other scarce resources during World War II. This could include, for instance prioritising the heating of hospitals and care homes. Quotas and allowances send a very clear message to the public that everyone's basic needs, and collective services, are being put first. This can help with public acceptance.[125]

Universal basic services. This is a proposal to extend public services like 'universal health care' to other areas.[126] This has a number of advantages: i) it ensures that everyone has their basic needs met, ii) it is form of redistribution thereby reducing inequality, iii) it already has wide public acceptance, and iv) in many cases it is a more cost efficient delivery mechanism. Examples include:

- Provision of affordable 'social' housing that enables more people to live near their work, which reduces energy demand for commuting
- Universal energy allowances (see **Box 17**)
- Free local public transport with extended services, without which many people will remain car dependent.

Targeting extreme consumption. Most emissions come from the top 1% and 10%, the so-called 'polluter elite'. The richest 1% globally causes half of all global aviation emissions.[128] Limiting such extreme consumption (e.g. ban of private jets) may be needed to reduce energy demand in some areas. However, it also serves a symbolic purpose as such policies very visibly restrict the excessive energy consumption of elites, and make it clear that they aren't 'carrying on as usual' whilst everyone else is required to make changes. Such policies change social norms by stigmatising conspicuous or extreme consumption.

Publicly led and funded transformations. For example, home energy efficiency retrofit would be best delivered through the public sector, with homes being retrofitted on a street-by-street basis, just as central heating was installed in large parts of the UK in the 1970s.

Government funding for up-front costs. Government funding is needed where not everyone can afford a measure (e.g. energy retrofit homes) due to limited disposal income, particularly households with lower incomes. Other examples include grants to support rooftop solar panels and buy electric vehicles.

Wealth and Income Redistribution

A redistributive tax system. Although ensuring demand reduction interventions are redistributive is needed to make decarbonisation fair, wider redistribution is also needed to address existing and underlying inequality (as noted in **Section 1**). The least affluent risk being harmed most by decarbonisation as they have the highest percentage spend on energy, whilst contributing least to climate change.

Ensure targeted measures are fair. The regressive benefits for take-up of specific measures should be reflected in increased taxation by higher income and wealth. For example, the wealthy would be more likely to purchase subsidised heat-pumps and electric vehicles, so disproportionately benefit from public funding for these – this could be offset by high taxes for those social groups. This may also have an indirect impact in reducing excessive consumption of the highest emitters.

Universal basic income. Linking a universal basic income to a local currency could help reduce demand by redirecting spending within the local economy. There are also proposals for a 'carbon tax and dividend' where all citizens receive an equal share of revenue from pollution taxes.[129] This

Box 17. A Universal Energy Allowance

A Universal Energy Allowance giving every household or citizen a set number of units of energy free or at a subsidised price would disproportionally benefit the poorest in society.[128] Fossil fuel price rises are a key way to disincentivise energy demand in general. However, guaranteeing everyone access to some energy allows domestic energy price increases to be more palatable, as the burden falls heaviest on those most able to pay.

125 Szuba, M (2022) 'Energy Sobriety: Holy Grail of the Green Transition?' *GEF*.
126 Gough, I (2017) 'Recomposing Consumption: Defining Necessities for Sustainable and Equitable Well-being'. *Philosophical Transactions of the Royal Society A 375*(2095).
127 Gough, I (2019) 'Universal Basic Services: A theoretical and moral framework'. *The Political Quarterly* 90(3), pp.534–542.
128 Gössling, S, and Humpe, A (2020) 'The Global Scale, Distribution and Growth of Aviation: Implications for Climate Change'. *Global Environmental Change* 65.
129 Green Party of England and Wales, 'Policy EC777'.

could feasibly sit alongside job sharing and a shorter working week.[130]

Redistribution of Work and Livelihoods

Just transition through green job plans. This is absolutely critical. Some sectors need to be phased out or substantially reduced. Publicly led just transition plans are needed to create new green jobs along with other transitional support measures for workers, including reskilling.[131] Communities more dependent on work that is phased out or substantially reduced will be most affected: fossil fuel production, industrial agriculture, aviation and shipping, steel and cement production, and some manufacturing sectors such as automobile manufacture. This should be supported by a social guarantee.[132]

Shared ownership of renewable energy generation. Where distributed renewable energy systems are owned by communities, farmers and municipalities, people have a stake in controlling their own renewable energy production. This has been found to reduce their energy use by 20–45% and creates local wealth and opportunities.[133]

3.5 Resilience

Whilst not being a key focus of this report, it is apparent that aspects of climate adaptation will be needed alongside mitigation. Therefore, building societal resilience becomes a higher priority. At a cultural level, resilience can also be built up through various means of support to help people find new meaning in life beyond consumerism – for instance through learning, the arts, community and working with the natural world.

Reducing demand can, in itself, relieve the pressure on existing infrastructures, leading to improved resilience. For example, it can diversify the ways in which demand is met by enabling a wider range of transport options within a local area, including walking, cycling and dedicated bus lanes. Reducing demand can build slack or redundancy into a system, which can make it more flexible and adaptable to changes (and wholesale disruption).

The war in Ukraine has shown how energy and food security are key areas where European countries need to build resilience. Some initial ideas include:

- Public ownership of key resources, with the state being able to take the longer-term view
- A redirection of government investment in technology, towards areas such as transition engineering[134]
- Enabling decisions to be taken at the local level to facilitate fast and appropriate responses
- Decentralised provision of energy and food through empowering communities to own (or part-own) the means of production and distribution of food and energy
- Selective use of local currencies to help withstand macro-economic rebounds
- Shifting focus away from energy efficiency alone and creating space for surplus capacity and storage, which can increase reliance
- Minimising unmet social and emotional needs as well as preventive mental health interventions to maximise individual capacity to deal with uncertainty.

Policy-making itself can promote resilience by being flexible and adaptable. This is facilitated by clarity around goals (**Section 2.6**) and reformed systems of governance (**Section 2.7**).

130 Onaran, Ö, and Calvert Jump, R (2022) 'A Shorter Working Week as Part of a Green Caring Economy: Feminist Green New Deal Policy Paper'. *The Women's Budget Group*.
131 Chapman, A, et al. (2018) 'Unlocking the Job Potential of Zero Carbon'. *Green House Think Tank*.
132 Button, D, and Coote, A (2021) 'A Social Guarantee: The Case for Universal Services'. *NEF*. Seedat, I (2021) 'Universal Basic Income and Universal Basic Services: A New Social Guarantee'. *The Unprecedented Impacts of COVID-19 and Global Responses*, pp.147–162.
133 REScoop Plus, 'D2.3 – Data Analysis Report'.
134 Engineered systems that meet the needs of today without compromising the ecological, societal and economic systems on which future generations will depend to meet their own needs. See Global Association for Transition Engineering website.

Section 4 – Narratives for Rethinking Demand

'Often we focus too much on simplifying things, but when we simplify things … the risk of distortion increases. Which is what happened with [the] Covid [vaccine].'

The reality set out at the start of this report is neither easy to say nor easy to hear. However, until this reality is accepted, rethinking demand will be out of reach. Narratives have a role in allowing our society – and particularly politicians and political parties – to discuss, acknowledge and accept this reality. However, it is critical to recognise their limitations. Messaging can be co-opted by the mainstream, or subverted and distorted by conspiracies; on its own it is likely to be insufficient to bring about the changes needed.[135] Simplifying messages can reduce them to instructions that lack explanation, which fit within a soundbite but can fail to communicate the broader understanding needed to rethink demand.

'We have to be brave and confident to try and explain perhaps complex principles, because if we don't, someone else will explain something different.'

Messaging also works best when people are presented with solutions to 'problems they already have' which is not possible for many of the examples set out above.[136] Messaging is also by definition a top down process whereby people are told the answer, or what to do. It is likely that much of the understanding and appreciation of the need to rethink demand, and building consensus around how to respond, can only happen through two-way communication (this relates to the range of democracy tools in **Figure 3**). This means participation and collective deliberation may be at least as important as messaging and narratives.

'The question is whether advertising and messaging is the right answer.'

'The messaging and communication have to be taken very seriously.'

In any case, messaging is still required (see **Section 2.3**). This section does not seek to provide a comprehensive approach to messaging. It rather considers some of the key considerations to communicating the importance, practicalities and implications of rethinking demand. These explore how narratives for rethinking demand should be: consistent; differentiated; and bold, sensitive and evolving.

4.1 Build Consistent Narratives for Rethinking Demand

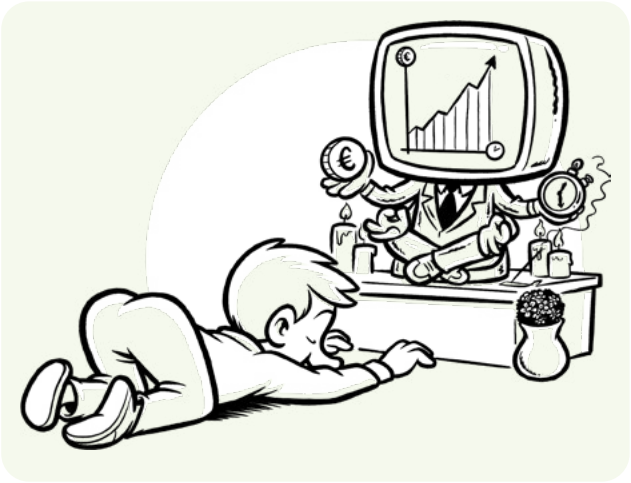
There are some areas where it's important to build consistent narratives in order to establish a common understanding of the true extent and implications of the climate emergency, and to build consensus about the response needed. This includes the following:

'There is no time left: we need a metamorphosis not a transition or transformation. We need to change everything.'

The need to rethink demand. The 'Welcome to Reality' section at the start of this report presents an overarching narrative, setting out the facts justifying the need to rethink demand. This could be refined, but it is critical to have clear and consistent narrative as to why there is a need to rethink demand and reduce energy use. This should include the need to embrace disruption as critical to limiting climate change.

135 Creutzig, F, and Roy, J (2022) 'IPCC Sixth Assessment Report: Chapter 5, Demand, Services and Social Aspects of Mitigation'. *IPCC*.
136 Hopkins, R (2020) *From What Is to What If*. Chelsea Green Publishing.

'A precautionary response [to address climate breakdown] will cause massive disruption [to our economies].'



Framing the purpose of our economy. 'Growth' is a clear and simple narrative about what the objective of our economy and society should be. This makes it easy to relate to as a narrative for progress. This report takes up the calls for 'wellbeing for all'[137] and 'living within environmental limits' to be adopted as the clear central objectives both of rethinking demand, and of our economies and societies more generally.

Collective choice. Rethinking demand, and embracing disruption and redistribution should be presented as collective choices (in contrast to business-as-usual). Even though many people will view these as the only sensible options (once the overarching narrative is supported) it is important to acknowledge that they are still choices. To present these as 'necessary' or 'the only option' can feel like a loss of agency, as it assumes an answer to the biggest question: whether our societies choose to make a fair contribution to limiting global emissions. This choice should be recognised, and not glossed over. For many people, their values and prior understanding mean that this may feel non-negotiable. However, the reality remains that in spite of the existing global agreements and national commitments, this is a choice that our societies haven't yet made. To deny this is to ignore the need to 'win sufficient support for sufficient action' (see **Section 2.3**) and the need to put our money where our mouths are and actually deliver on objectives agreed.

'Even the richest cannot say that they don't care about the wellbeing of the rest of the population.'

Collective deliberation is key. It is very unlikely that one-way, top-down communication will be enough. Even if emergency governance was imposed, the 'social proof' and public acceptance of the need for an emergency response is expected to require significant deliberative and participatory processes. Therefore, choosing to rethink demand requires choosing to integrate deliberation and participation into our governance systems.

Humanity's place in the world. The dominant political narrative presents humanity as 'in control'. This presents our environment purely as a resource to be used, without recognising the value it has in its own right.[138] This cultivates a view that our place in the world is separate from and superior to everything else on earth. The notions that humanity can 'do as it will without regard to the consequences' and 'humans can manage earth systems to fix problems, so it doesn't matter if we destabilise them' are dangerous ways of thinking. Although it is widely accepted that humanity has become the major driver of change on earth, it would be incorrect to assume that the implications of this are widely understood.[139]

'Maybe we could trust the people, and they would be able to come up with what they think the right answer is. Maybe they won't, but we could give them a go, rather than believing senior people in positions of authority know the answers, because that's not going too well.'

137 See WEAll website.
138 This is the distinction between instrumental and intrinsic value in environmental ethics.
139 Berry, W (2014) 'Welcome to the Anthropocene'.

'[Our] identity [is] defined by what products we buy and display to each other.'

In fact there is a huge amount humanity doesn't know about what happens on earth.[140] The Precautionary Principle calls for humanity not to rely on this way of thinking, which climate scientist Kevin Anderson describes as a deliberate misunderstanding of the science: delusional and foolishly optimistic.[141] Therefore, it is helpful to frame humanity's place in the world as one of interdependence and intergenerational responsibility.[142]

Key Considerations in Narrative Design

The above list explores areas where narrative-building is needed. It is neither exhaustive nor comprehensive. When developing and agreeing clear narratives it is important to consider:

'We have an addiction to meaning – humans are meaning-making machines – in culture we seek what helps us to make sense of the world and that gives us personal meaning.'

Identity. Narratives often shape the identities with which individuals find resonance. People often have many identities at the same time, and identity politics isn't always helpful. However, there might be some consideration given to how narratives assume answers to the 'who are we?' question. In the same way as building 'European' identity can help to get beyond national rivalries, perhaps there is a need to cultivate identities around everyone being 'earthlings' or 'global citizens' – after all, we all share one atmosphere and one global carbon budget.

Agency and meaning. Narratives and messaging have significant impact on the extent to which people feel like their choices, opinions and actions matter, and whether they feel part of a collective endeavour. Also, governance changes and the participatory involvement in implementing change can build agency and meaning. For example talking of 'our economy' rather than 'the economy' and referring to people as 'citizens' as opposed to 'consumers' allows people to feel a right to involvement in economic decisions.[143] There may be a need to engage with the big 'why' questions around what it is to be human in order to engage in constructive deliberation around what the overarching purpose of our economies should be. What the 'good life' looks like could be a useful question in exploring the scope for different ways of living. This may help overcome cultural addiction to consumerism and high-energy lifestyles.

'Our society is failing to meet a whole range of human needs. Our economy pushes people to all kinds of false satisfiers and destroys lives.'[144]

Talking in terms of money. Whether interventions and arguments are framed in terms of monetary costs/savings, or in non-financial terms impacts both on which values are reinforced (see Reinforcing values section below) and how people understand choices and the decision they make. For example, should people insulate homes to 'improve comfort' or 'reduce waste heat/energy' as opposed to 'save money'.

140 To date, scientists have described and formally named about 1.8 million species of organisms, out of potentially 10–100 million. Reece, JB, et al. (2011) *Campbell Biology* (ninth edn). Pearson, p.1284.
141 Gibbons, J (2016) 'We're Deluding Ourselves – Note My Words'. *Village Magazine*.
142 As famously explored by Aldo Leopold in his 'Land Ethic' essay in the Sand County Almanac in 1949. See The Aldo Leopold Foundation, 'A Sand County Almanac'.
143 For example, see Jon Alexander's website.
144 Described as 'pseudo-satisfiers' by Max Neef: things that claim to be satisfying a need, yet in fact have little to no effect on really meeting such a need. See Khandewal, N (2016) 'Maslow's Hierarchy of Needs vs. The Max Neef Model of Human Scale Development'. *Medium*.

'Maybe we should talk about abolition of "energy privileges"?'

Increasing honesty in politics. Choices are often made (both consciously and subconsciously) as to whether reality is honestly presented (however brutal it may seem or tenuous the hope it leaves).[145] In many cases, reality is watered down, or made more palatable by omitting facts or softening the language used. It is often hard for politicians and political parties to be brutally honest, particularly without being accused of catastrophising. However unless the public know the reality, not only of the situation with regard to climate change but also of the choices society faces in response, then how can 'sufficient support for sufficient action' be honestly won.

'The whole message is needed – not barriers in our mindset or being too scared to say the right thing.'

Reinforcing values. The way narratives and messaging are crafted will strengthen (or by absence weaken) particular values. Certain values fit well with interventions to rethink demand (e.g. intrinsic values like empathy, integrity and honesty). Others would make success harder (e.g. extrinsic values like 'social status' or 'popularity').[146]

Environmental organisations need to examine the values and goals reflected by their communications and campaigns, to diminish the extent to which they reinforce materialistic and self-enhancing values and goals.[147]

'We need to overcome the view that "other people will do this as it will make us unpopular and does not win you votes".'

4.2 Differentiation of Narratives for Rethinking Demand

Whilst there are some points outlined above where clear consistent messaging and narratives are needed to build consensus, there are other aspects of talking about rethinking demand where differing emphasis and narratives depending on geographical or cultural context can be very beneficial. These are mostly about recognising the need for a broad support base across a range of geographic areas, ages, cultural backgrounds, religious backgrounds, education levels and prior knowledge.[148] Whilst all in society aren't all equally likely to contribute to a sufficient public mandate for emergency governance to rethink demand, no one social group alone is enough. For our society as a whole to embrace rethinking demand, a high level of compliance is needed. This makes it important to ensure narratives and messaging reach and resonate with a wide range of audiences. Some considerations as to where narratives should be customised to reach particular audiences are explored below:

Using values to engage different audiences. There is an inherent trade-off here with the point about values above. Narratives reference values in order to make messages relatable to a particular audience – for example, 'thrift' resonates well with some social groups. This could help build broader alliances for change. However messaging can inadvertently reinforce (often extrinsic) values that act against certain aspects of rethinking energy demand. Although there is a balance to be struck, it may help to vary which value is emphasised (usually one of the intrinsic values that align best with rethinking demand), to avoid the risk of certain values undermining the changes needed in certain contexts.

Varying the framing of specific interventions. There are many ways to frame and shift the emphasis of communication about different interventions. For some audiences, emphasising the 'carrots' to encourage change might land better, whereas for others highlighting the 'sticks' to discourage excessive

'Around one third [of people] experience a traumatic experience during childhood. This leads to a desire for certainty and predictability.'

145 This question of honesty in relation to presentation of climate science is discussed by Kevin Anderson in 2014 here (Citizen Action Monitor (2014) '"We have crossed the threshold between acceptable and dangerous climate change", says Kevin Anderson'.) and is now a main tenet of Extinction Rebellion's campaigning.

146 See the Common Cause Foundation website.

147 Crompton, T, and Kasser, T (2009) 'Meeting Environmental Challenges: The Role of Human Identity'. *WWF*.

148 Climate Outreach, 'Britain Talks Climate'.

or unfair consumption might be more effective. For example, communication to garner support for some demand reduction measures and/or audiences might be more effective if justified on the basis of health rather than climate outcomes.

'Don't frame [the situation] as an energy demand problem.'

Multiple visions for journeys and destinations. Making the destination (after the period of disruptive change) tangible can help build collective purpose and acceptance. This must be a near-term vision to ensure it relates to people's current lives. Equally metaphors for the journey through the disruption to that destination help build agency, acceptance and faith in that collective journey. The stories, metaphors and visions that will be most effective in doing this will vary across and within societies and communities.

4.3 Bold, Sensitive and Evolving Narratives

There are also some strategic and practical considerations in how to best develop and use narratives to communicate why we should rethink demand:

Taking advantage of crises. Periods of great tension, disruption or uncertainty create space for societies to shift what is acceptable and to undergo significant changes to social and business practices. This could include appetite for change after extreme weather events occur.[149] This must be prepared for (like humanitarian disaster preparedness), and then taken advantage of so that rethinking of demand can build from, rather than be derailed by, changing political circumstances.

Ensuring narratives are sensitive to human psychology. It is easier for governments to offer more of what people are used to, or offer the same for a cheaper price (e.g. cutting fuel duty). It is harder to imagine a different way to meet needs, especially if this requires changes in social practices. People are understandably anxious about change, especially when faced with immediate challenges that they might also lack the capacity to cope through or work round. It is important that narratives and messaging are sensitive to and compensate for fear and avoidance of change, taboos, and people's existing coping strategies (including denial that change is needed).

Iterative refinement. It is impossible to get messaging right first time, for all audiences. And just because a narrative isn't failing, doesn't mean it cannot be improved. New framings should be explored. Key aspects of rethinking demand should not be omitted due to a lack of what appears as a 'good narrative'. However, most important is learning what works and what doesn't through feedback and evaluation, ideally in rigorous and independent ways.

'We need to show people that the notion of growth, that they have been spoon-fed daily, as meaning more jobs and public services, is a lie.'

149 The concept of disaster preparedness might apply to climate emergency communications. See European Commission, 'European Civil Protection and Humanitarian Aid Operations'.

Conclusion

This report sets out an approach to the climate emergency that is vastly different to that being argued by most in mainstream politics. Although some European green parties publicly recognise many of the realities and interventions outlined in this report, a significant gap remains between most stated political positions and its findings.

Commonly proposed solutions will not be sufficient. Increasing renewable energy generation, improving energy efficiency and technology solutions alone will not allow zero carbon to be reached. Societies can only limit climate danger and end our society's dependence on fossil fuels by avoiding the need for energy demand and shifting to more shared energy services. Our societies must therefore choose to rethink demand for energy and, based on this new understanding, inspire disruptive systemic interventions in our economies.

That in turn requires thinking differently about energy consumption and how to change it. A different approach to demand reduction would shift away from the current focus solely on behaviour change. Instead, by understanding how energy demand is underpinned by prevailing daily practices and how these are linked to the way energy is provided, interventions can challenge the assumptions which drive ever increasing energy consumption. This is in effect thinking in terms of living well within *sufficient* energy demand. Yet, unless the emotional aspects to how people engage with change – and to some degree the cultural addiction to consumerism - is recognised any attempt for sufficient change in governance and policies will be unsuccessful.

Seizing this opportunity requires a different basis to policy-making. Effective packages of policies need to go beyond carefully joining up incentives (carrots), regulatory aspects (sticks) and better communication. Addressing the root causes of ill-health or high crime rates requires intervening across a community and departmental boundaries – in the same way, energy demand policies need to be placed in the context of, and underpin, other policies across government. This might be by linking infrastructure provision to education or through holistic interventions that change production and consumption simultaneously. Planning and investment must go hand in hand with policies that intentionally shape social norms whilst constraining current trends that require more production and consumption of energy. Top-down messaging and nudges are not sufficient to deliver these changes. The policy changes needed are simply not plausible within the current political and economic structures.

Significantly, this report argues that major changes to our governance systems are absolutely essential and not optional extras. This point is rarely recognised outside of protest groups like Extinction Rebellion and there remain few comprehensive proposals for substantive governance changes in response to the climate emergency (except some calling for new processes and governance for strategic emergency planning).

Understanding and navigating the necessary rethinking of demand requires citizen engagement rather than top-down communications, otherwise acceptance and compliance will be limited. Governments must also stop allowing private interests to block the transformations needed. Evaluative, accountable and transparent governance is needed that pre-empts injustice with redistributive social policy.

Ensuring everyone fairly contributes to and benefits from this change requires a redistributive approach that reduces inequality. This goes beyond agreeing that both social and climate (and wider environmental) policies are needed and implementing them together. Unless government ensures that impacts are felt fairly across all in society, interventions risk backfiring and causing social unrest.

This report does not claim to state all the answers. Significant and rapid reduction in energy use has major implications, not least accepting the need to end continued economic growth and instead prioritise wellbeing for all. This shift in priorities also informs the report's exploration of potential narratives and key considerations in assessing their suitability.

Collective understanding and acceptance is needed that the substantial energy demand reduction necessary to limit climate breakdown must be matched by redistributive policies and systemic governance changes. Only then will the possibility of bringing about such significant energy demand reduction be within reach.

For over-industrialised European societies to reach zero carbon on a timescale compatible with limiting dangerous climate change, they must significantly reduce energy demand. This will disrupt business-as-usual. This report explores the policy approaches needed to make that choice, as well as the governance changes and narratives that might bring it within reach.

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