



# **PATHWAYS TO NET ZERO:** **A Greener Vision**

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12<sup>th</sup> September 2022



## Foreword

Our climate is heating up at great speed. Extreme weather events are intensifying. Global greenhouse gas (GHG) emissions continue to rise.

China is currently experiencing the longest sustained heatwave and drought in its history. Catastrophic flooding has left more than 1,300 people dead and a third of Pakistan under water. Half of Europe is in drought. Meanwhile, Putin is using the supply of gas to Europe as a weapon in his war against Ukraine.

This is our new world. At the root of all the perils we face is our dependency on fossil fuels.

Transport is the fastest growing source of global GHG emissions and the biggest polluting sector of the UK economy. The current approach to decarbonisation has delivered little progress. The key conclusion from **Greener Transport Solutions** research is that we need a whole systems transition to net zero and a paradigm shift in terms of how we think about decarbonising transport<sup>1</sup>.

This is the final of a series of Pathways to Net Zero reports focused on how we can deliver emissions reductions at the scale and pace needed. I am very grateful to the **Foundation for Integrated Transport** for supporting the Pathways to Net Zero project, and to **Trueform** for sponsoring the roundtable discussions.

We face an ever more challenging context for net zero. The new UK government has signaled an end to the ban on fracking and given the green light for new oil and gas drilling. But we cannot afford any backsliding on decarbonisation. The focus should be on reducing energy waste and boosting the supply of cheap and secure low carbon energy, in particular onshore wind and solar.

Crucially, successive UK governments have failed to grasp the nettle on energy demand reduction. This should be at the heart of addressing not only the climate emergency, but also the cost of living and energy security crises.

It is against this backdrop that we must urge the new Prime Minister to develop a strategy to tackle worst cost of living crisis in a generation in a way that will also accelerate the transition to net zero.

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# PATHWAYS TO NET ZERO: A Greener Vision

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## Executive Summary

**The world is not yet on track to keep global heating levels to the 1.5°C set out in the Paris Agreement. We must reduce global greenhouse gas (GHG) emissions by 45% by 2030<sup>2</sup>. Only drastic reductions on that scale and in that timeframe will give us a chance of achieving net zero by 2050 and avoiding catastrophic climate impacts. However, emissions continue to rise.**

In February, the IPCC issued their bleakest warning yet on climate impacts<sup>3</sup>. Since then, 2022 has provided many stark proof-points. Droughts, floods, heatwaves and other extreme weather events have been accelerating around the world. A new high of 40.3°C has been recorded in the UK<sup>4</sup>. At the time of writing, half of the EU is under drought conditions with the weather set to remain hotter and drier until November.<sup>5</sup>

Meanwhile we face an ever-darkening context. The climate crisis has been joined by a major war, rising inflation, a food emergency, supply chain crises, and a widespread, deepening cost of living crisis driven largely by spiraling energy costs.

We need a strategy to tackle the cost of living crisis that will also accelerate the transition to net zero and enhance our energy security. Energy demand reduction will be key. The IPCC calculate that reducing energy demand could deliver a 40-70 per cent reduction in global GHG emissions by 2050<sup>6</sup>.

### ***Government policy will not achieve net zero***

It is important acknowledge that the UK has a strong track record on net zero. The Climate Change Act of 2008 was the first of its kind, and in 2019 the UK Parliament was the first advanced economy in the world to commit to net zero emissions by 2050.

However, whilst the pledge to reduce GHG emissions by 78% by 2035 puts the UK at the forefront of international ambition, government has faced criticism for failing to develop plans to match its targets. In their 2022 Progress Report to Parliament, the Climate Change Committee conclude that current government policy will not achieve net zero. There are major policy gaps, including insufficient focus on behaviour change and demand reduction. A step change is needed in engagement with the public<sup>7</sup>.

There are inherent policy contradictions in delivering on net zero. The siloed nature of government and lack of joined-up thinking militates against the cross-government approach needed. Achieving growth whilst decarbonising the economy is a central challenge. Our fixation with cost-benefit analysis based on strictly linear GDP growth undermines net zero objectives. **A net zero test for public policy** would ensure cross-government policy alignment and that net zero is considered early enough in the decision-making process.

Transport is a derived demand linked to every other sector of the economy. Decarbonisation is contingent on action in other sectors. [Greener Transport Solutions](#) has proposed a **whole-systems transition to net zero** that reflects the shift to digital connectivity, and the integration of passenger and freight transport with land-use planning, energy and green



finance and the trip-generating sectors such as health, education and employment. This will require a paradigm shift in how we think about decarbonising transport.<sup>8</sup>

**Pathways to Net Zero Roundtable Discussion Series 1** in March 2022 concluded that we are not getting anywhere near the scale of change needed. A reduction in car mileage of at least 20% will be required by 2030<sup>9</sup>. But spending is still skewed towards road building. We are still building car dependent housing developments. Lack of leadership from central government is a major problem. The cut in fuel duty was unhelpful to local leaders trying to implement car restraint measures because it sends the wrong message to the public.<sup>10</sup>

### ***Tackling cost of living crisis and transition to net zero***

The 80% increase in the energy price cap in October announced by Ofgem means that millions of consumers and businesses in the UK would be harmed without radical support. The 'Energy Price Guarantee'<sup>11</sup> scheme to freeze energy bills announced by the Prime Minister will certainly help consumers and businesses in the short term but it will reduce the incentive to cut energy use and will not protect the UK from blackouts.

Today's price volatility is likely to be long-lasting. The OBR expects natural gas to remain at least three to four times the average pre-Ukraine invasion price, until 2027<sup>12</sup>. Moreover, the freeze on bills is not well targeted with a sizeable chunk of support going to wealthy households, at an estimated cost of £150 billion to the taxpayer. The current approach as outlined on 8<sup>th</sup> September is neither sustainable nor affordable.

We need a long term targeted **energy demand reduction strategy** to tackle worst cost of living crisis in a generation that will accelerate the transition to net zero and enhance our energy security. The strategy should include a universal carbon allowance and a package of energy efficiency measures including help for low income households to insulate their homes. At least 15 million homes need some form of energy efficiency improvement.<sup>13</sup>

The strategy would be funded by putting a carbon price on everything we consume and would be progressive as well as incentivising people to reduce their energy use. Individuals on higher incomes would pay more in carbon tax through all the goods and services they buy but receive the same fixed allowance as those on lower incomes. Higher income households consume three times more carbon than lower income households<sup>14</sup>.

Pricing properly for carbon would generate the revenue needed to tackle the cost of living crisis and ensure that the right level of targeted support goes to those who actually need it. Importantly the rise in the world hydrocarbon price is sending the right price signal. Pricing for carbon will ensure that this remains the case when the current energy crisis passes.

### ***Change is possible but we need a shift in mindset***

Incremental changes won't be sufficient to bring about the transformational change required to achieve net zero. We need a new approach. This report applies insights from 'The Tabula Project' to the challenge of tackling climate change and developing policies to achieve net zero. Anthropogenic climate change is not the only peril we face. If we want to change behaviours, we need to change the premises which led to them<sup>15</sup>. [ANNEX]



Progress requires periodic reviews of the preconceptions and principles governing our thinking<sup>16</sup>. How we think is inextricably linked to our sense of identity, which is a product of our history, individual and collective experience. The mind and the self emerge from the social through language<sup>17</sup>.

We need a radical realignment of how we perceive ourselves in relation to others and the environment on which we depend. The cumulative effect of how we live today is putting a massive strain on our ecological system. The modern world is unsustainable.<sup>18</sup> The 'unit of survival' is the organism plus its environment<sup>19</sup>.

We need to address the underlying causes of problems and take a long-term systemic approach. Political expediency is self-defeating. We need to develop ecological policies that will encourage people to do the right things for the right reasons<sup>20</sup>. We need to make a deeper connection with our natural empathy and respect for each other and all living species. Greater compassion and understanding will be needed if we are to tackle our most serious social, environmental and systemic problems<sup>21</sup>.

### ***The world becomes how it is imagined***

The impact of how we live our lives today is threatening the very foundation our existence. But we must avoid talking ourselves into a doomsday scenario. The future is not a given. Truly novel change is possible. Ideas can have a self-fulfilling power of their own.

Progress is being made. We can be encouraged by the growing global momentum for net zero. More than 130 countries now have net zero targets, covering 91 per cent of global GDP. They are joined by 115 state and regional governments, 235 cities and more than one-third of the world's biggest publicly traded companies. Moreover, the public care. Australia's election demonstrated that parties will be punished at the ballot box if they fail to address the climate challenge.

There is a strong appetite for action. Three-quarters of adults in Great Britain worry about climate change.<sup>22</sup> At the Greener Vision roundtable discussions in October, we will hear examples of exciting and innovative solutions that are being developed across the UK, at the subnational, regional and local level. It is vitally important that national government remains committed to net zero and maintains the UK's strong world-leading targets.

Our dependency on fossil fuels is at the root of the climate emergency, as well as the cost of living and energy security crises. If we are to wean ourselves off fossil fuels we must reduce energy demand and ensure that net zero is at the heart of all public policy decision-making. And we must paint a positive picture of what a zero-carbon future would look like. An inspiring **greener vision for the future** would help build the mandate for change and tough decisions for the long term.

Change of this magnitude will require a shift in mindset and a new paradigm that recognises our fundamental interdependence with each other and the biosphere.



## **1. It's now or never. *Current policy will not achieve net zero.***

**Around the world temperature records are being exceeded. Adverse climate impacts are accelerating. Inflation is rising and we are facing record high food and energy prices. The world is facing 'poly-crisis' with fossil fuels at its heart. We must prevent any backsliding on decarbonisation as governments tackle cost of living crisis. UK government policy will not achieve net zero.**

### **1.1 Extreme weather events and climate impacts are accelerating**

The IPCC warn that it's "now or never" if world is to avoid climate disaster. In February 2022, they issued their bleakest warning yet on climate impacts<sup>23</sup>. Droughts, floods, heatwaves and other extreme weather events are accelerating. "Any further delay in concerted global action will miss a brief and rapidly closing window to secure a liveable future".

Since the IPCC issued their warning in February, catastrophic flooding has left more than 1,300 people dead and a third of Pakistan under water<sup>24</sup>. China is currently experiencing the longest sustained heatwave and drought in its history<sup>25</sup>. Just under half of the EU (47%) is under drought conditions with the weather set to remain hotter and drier until November – conditions that will severely impact this year's summer harvests.<sup>26</sup> A new high of 40.3°C has been recorded in the UK<sup>27</sup>. 11 out of 14 areas in England are officially in drought<sup>28</sup>.

### **1.2 A 'poly-crisis' with fossil fuels at its heart**

The world is now in the grip of "a 'poly-crisis', with fossil fuels at its heart"<sup>29</sup>. This year the climate crisis been joined by a major war, rising inflation, a food emergency, supply chain crises, and a widespread, deepening cost of living crisis driven by spiraling energy costs.

The response of governments to escalating fuel and gas prices has been to shore up their energy security, even re-opening coal fired power stations. In the UK the new government has signaled an end to the ban on fracking and to give the go-ahead for new oil and gas drilling in the North Sea. However, climate change is fueling the cost of living crunch<sup>30</sup>. We must break our dependency on fossils and reduce energy demand. The IPCC calculate that reducing energy demand across all sectors could deliver a 40-70 per cent reduction in global greenhouse gas (GHG) emissions by 2050<sup>31</sup>.

### **1.3 The world is not on track to keep global heating levels 1.5°C**

If we are to keep global heating to 1.5°C global GHG emissions must be reduced by 45% by 2030<sup>32</sup>. Currently we are on track for a rather more catastrophic 2.4-2.7°C of warming<sup>33</sup>. Countries must come to COP27 with more ambitious Nationally Determined Contributions. Equity is a key priority. A step change is needed in climate finance. 55 climate vulnerable nations have lost one fifth of their wealth over the last twenty years as a result of the costs of climate impacts<sup>34</sup>.

There is however a growing global momentum for net zero. More than 130 countries now have net zero targets, covering 91 per cent of global GDP. They are joined by 115 state and regional governments, 235 cities and more than one-third of the world's biggest publicly



traded companies. Moreover, the public care. Australia's recent election set a heartening precedent in demonstrating that parties will be punished at the ballot box if they fail to address the climate challenge. Closer to home, polling by the centre right think tank Onward shows that deserting the net zero target could cost the Conservatives 1.3 million votes<sup>35</sup>.

#### **1.4 Current government policy will not achieve net zero**

The pledge to reduce GHG emissions by 78% by 2035 certainly puts the UK at the forefront of international ambition. However, government has faced criticism for failing to develop plans to match these targets. The High Court has ruled, following cases brought by ClientEarth, Friends of the Earth and the Good Law Project, that the government's Net Zero Strategy breaches the Climate Change Act<sup>36</sup>.

In its 2022 Progress Report to Parliament the Climate Change Committee (CCC) conclude that current government policy will not achieve net zero. They highlight the failure to insulate homes and lack of action on farming emissions as key gaps. They cite the uptake of electric cars and deployment of renewable electricity as areas of progress, but transport policy is too focused on private cars. There has been insufficient focus on demand reduction<sup>37</sup> British housing stock is one of the oldest and least insulated in Europe. At least 15 million homes need some form of energy efficiency improvement.<sup>38</sup>

A reduction in car mileage of at least 20% will be required by 2030<sup>39</sup>. [Pathways to Net Zero Roundtable Discussion Series 1](#) concluded that we are not getting anywhere near the scale of change needed. Spending is still skewed towards road building. We are still building car dependent housing developments. Lack of leadership from central government is a major problem. The cut in fuel duty was particularly unhelpful to local leaders trying to implement car restraint measures because it sends the wrong message to the public.<sup>40</sup>

#### **1.5 A step change is needed in engagement with the public**

CCC estimate that 62% of future emissions reductions will rely on individual choices and behaviours<sup>41</sup>. The easy wins in terms of decarbonisation of the power sector have already happened. Behaviour change across the whole economy will play a critical role going forward. The Environmental Audit Committee concludes that "Government is not yet prepared for the honest debate with the public about the changes that we must all consider starting to make within the lifetime of this Parliament."<sup>42</sup>

Consumers and producers will have to adjust significantly. *The Economy 2030 Inquiry*<sup>43</sup> highlights that that the provision of transport, domestic heating and food choices must swiftly change, but we know little about the policy and political economy of doing so successfully. Little thought has yet been given to how the tax and benefit system can support households to make the transition. The consumption transition urgently needs more attention alongside the focus on production.

A recent survey revealed that a majority of the public (70%) align with scientists that climate change was the key driver of the July 2022 heatwave, and three-quarters (76%) report they are worried about climate change<sup>44</sup>. However, there is a disconnect between public concern and an understanding of the changes people will need to make in their own lives.





## 2. Policy challenges. *We need a whole systems transition*

**There are inherent policy contradictions in delivering on net zero. Failure to price properly for carbon is at the heart of our inability to address the climate problem. Achieving growth whilst decarbonising the economy is a central challenge. Transport decarbonisation is contingent on action in other sectors. We need a whole systems transition to net zero.**

### 2.1 There are inherent policy contradictions

Net zero requires higher utilisation of a smaller vehicle fleet but expanding UK's car manufacturing sector is a key part of government's strategy to 'level up' the country. The ongoing freeze in fuel duty has increased traffic and carbon emissions but has been of benefit to the significant number of low-income households without adequate public transport provision and reliant on their (often older and more polluting) cars. There are contradictions between achieving the goal of net zero and delivering the £27.4 billion road investment programme<sup>45</sup>.

The siloed nature of government militates against the joined-up approach needed. Transport is a derived demand so the decarbonisation of transport must be planned in the context of the wider economy. Digitalisation increasingly drives large parts of the economy, and therefore the choices that we make about whether we even need to travel. However, our current system of regulation does not integrate transport into our digital world. Professor Glenn Lyons refers to a 'triple access system', whereby one can combine transport with good land use planning and a very mature telecommunications system<sup>46</sup>. The challenge in delivering this is how to overcome the silos of government both nationally and locally.

Progress is also impeded by a lack of clarity and focus about who should be doing what and where power should lie. Coordination of the different aspects of policy essential for decarbonisation is easier at the local level, but England has one of the most centralised systems of government in the world. The disjointed and fragmented nature of devolution means that too often local leaders are reliant on ad hoc project-based funding streams and lack the powers and resources to plan and invest on an integrated long-term basis. Bidding is inefficient, time and resource intensive and militates against the joined-up thinking and decision making needed to achieve net zero.

### 2.2 Failure to price properly for carbon

The failure to price carbon properly runs through every sector of the economy and continues to support unsustainable levels of consumption and ongoing market failures, such as the \$400 billion in annual fossil fuel consumption subsidies worldwide<sup>47</sup>. The root of the climate problem is that we are using too much energy to fulfil socially and culturally constructed needs and desires, and even more fundamentally "the price of fossil fuels that produce that energy, and political and economic structures that keep us addicted to them"<sup>48</sup>.

The result of repeated failures of road taxation to cover externalities is that we over consume roads. The fuel duty escalator was first introduced in 1993 as an environmental tax, to stem the increase in pollution from road transport. However, since the fuel duty protests in 2000,



and the referendums on congestion charging in Edinburgh and Manchester, levying any additional charges on road users has been seen as politically toxic. Analysis for Greener Journeys published in 2018 and updated in 2020, showed that the freeze on fuel duty 2011-2019 had caused a 5% increase in road traffic and an extra 5 million tonnes of CO<sub>2</sub><sup>49</sup>.

### 2.3 The limits to growth

In 1972, *The Limits to Growth*<sup>50</sup> argued that our civilisation is exhausting the resources upon which its continued existence depends. Achieving growth whilst simultaneously decarbonising the economy is one of the central challenges for policy on climate change. A report for the RSA<sup>51</sup>, surmised broadly three positions on global ecological risks and the economy: business as usual growth; green clean growth “a new model of capitalism”; and post-growth. The problem with post growth is that there is no political and economic narrative of transition that currently makes sense. “Momentum is behind clean growth, but the key question is whether it is really part of a transition to a sustainable economy.”

Professor Tim Jackson argues that whilst green growth is obviously better than harmful growth, the speed with which we are able to decouple carbon from output is nothing like what it needs to be<sup>52</sup>. The idea that renewable energy and greater efficiencies will allow us to sever economic growth from its environmental impact runs contrary to historical evidence and the basic arithmetic of growth<sup>53</sup>. Professor Kevin Anderson argues that we are facing the need for cuts so great that they challenge the fundamental logic of prioritising GDP growth over everything else<sup>54</sup>.

### 2.4 A whole-systems transition to net zero

[Greener Transport Solutions](#) has proposed whole-systems transition to net zero. This will require a paradigm shift in how we think about decarbonising transport.<sup>55</sup> Transport is inextricably linked to every other sector of the economy. We need an approach that reflects the shift to digital connectivity, and the integration of passenger and freight transport with land-use planning, energy and green finance and the trip-generating sectors such as health, education and employment. Collaboration across sectors will be key.

We must reduce demand and avoid rebound effects. Electric vehicles are important but not a panacea. A fair and just transition to net zero will involve building more infrastructure for walking, cycling and local public transport. Environmental taxes should ensure a fair distribution of cost and incentives. Access to essential services must be available for all.

We won't get all the decisions coordinated across the economy the right way unless we price properly for carbon. Price signals should incentivize consumers to lower their carbon footprint. We must reduce embedded carbon and “sweat the assets”. We should minimise the infrastructure we build and make much more efficient use of existing assets. Integration of transport with land use planning is critical. Density is key to supporting public transport, shorter distances are needed to make walking and cycling feasible.

Proper devolution, with secure long term funding settlements, is the only way to successfully deliver net zero at the local level. Government should enable local areas to plan and invest on an integrated long-term basis. We need to reform governance, funding and appraisal and support collaborative working across wide regional areas.



### 3. The politics of climate change. *We need a shift in mindset*

**Climate change is a democratic challenge. The biggest barriers to progress are political not technological. The potential impacts of climate policies on living standards means that implementation can be difficult. However, GDP growth can no longer be the priority. We need to live within the ecological limits of a finite planet. Change of this magnitude will require a shift in mindset.**

#### 3.1 Main challenges are political not technological

If we are to achieve our net zero target, the changes we will need to make are so profound that the way we live our lives in 2050 will be unrecognisably different to our lives today. As a society we are not well equipped to deal with the implications of the scale of behaviour change required. The democratic mandate required for political parties to get elected means that the hard choices have not so far been grappled with by the main political parties.

If public does not trust proposed policies, this could lead to a backlash and jeopardize the success of the net zero transition. The 'gilet jaunes' movement in France is an example of how the public will react to measures it doesn't perceive to be fair. A Swiss referendum on climate change policies, where voters narrowly rejected plans for car fuel tax and tax on air tickets (51% against)<sup>56</sup>, suggests that many were worried about the impact on the economy as the country tried to recover from Covid-19.

In *Too hot to handle: The Democratic Challenge of Climate Change*, Rebecca Willis argues for a more deliberative model of democracy in which politicians, citizens and experts debate and collaborate on climate strategies. Climate change must be seen as a collective problem. We need a clearer story of transformation if we are to transition away from a high carbon society towards a post-carbon future. And we need to acknowledge that climate change is about more than evidence and technical fixes, it is an appeal to the heart as well as head.<sup>57</sup>

Climate action requires a social contract between government and people.<sup>58</sup> Society in richer countries is dependent on constant energy input, which is mostly derived from burning fossil fuels. Citizens in these countries are so accustomed to high-carbon systems that it is very difficult for them, or their political leaders, to envisage a low-carbon society.

#### 3.2 'Greening' business as usual won't work

There is a growing body of opinion that strictly linear GDP growth can no longer be the priority. Prioritizing growth according to its contribution to the Sustainable Development Goals would be a better place to start. These 17 interconnected goals aspire to sustainably increase global prosperity, equality and well-being.<sup>59</sup>

We must put an end to economic short-termism. Professor Nicholas Stern argues that today he would place less emphasis on narrow frameworks of cost-benefit analysis "which often leave out or trivialise the big risks". Greater emphasis should be given to co-benefits such as improving health and well-being, enhancing bio-diversity, creating jobs, reducing poverty, increasing resilience and the ability to adapt to climate change<sup>60</sup>.



In *Donut Economics*<sup>61</sup> Professor Kate Raworth suggests we should be “agnostic about growth”. She makes the case for a social foundation of well-being that no-one should fall below, and an ecological ceiling of planetary pressure that we should not go beyond. Today’s economy is divisive and degenerative by default, whereas we need to design economies that are redistributive and regenerative by design. A key task for policy makers is to come up with economic designs that would enable nations coming towards the end of their GDP growth to learn to thrive without it.

Professor Jackson defines prosperity as our ability to flourish within the ecological limits of a finite planet. In *Prosperity without Growth*<sup>62</sup> he argues that our technologies, our economy and our social aspirations are all badly aligned with any meaningful expression of prosperity. “The tragedy of consumerism is not just that it is damaging the planet. But that it is doing so in pursuit of false gods and elusive dreams.” In *Post Growth: Life after Capitalism*<sup>63</sup> he argues that the myth of growth and the denial of limits are closely related to one another. He sets out the building blocks for a new post growth prosperity.

The pandemic demonstrated the unpreparedness of the global economy to systemic shocks, despite early warnings from scientists. One legacy of COVID-19 should be an increased focus on risk and resilience in appraisal and investment decisions. In *Value(s)* Mark Carney notes that when pushed, societies prioritised health first and foremost and then looked to address the economic consequences. He argues that the key to building back better will be to base our response on objectives derived from values of solidarity, fairness, responsibility and compassion, and not on an economic determination of where the net-benefit lies.<sup>64</sup>

### **3.3 A new mindset is needed**

The politics of moving beyond current mainstream economic thinking will be challenging. In *The Future We Choose*<sup>65</sup>, Christiana Figueres and Tom Rivett-Carnac note that to have even a 50% chance of success we must cut global GHG emissions by half their current level by 2030, half again by 2040 and finally zero by 2050. A change of this magnitude will require a major transformation in almost every area our lives.

Figueres and Rivett-Carnac argue that attempting to change while we are informed by the same state of mind that has been predominant in the past will lead to insufficient incremental advances. To open the space for transformation we have to change how we think and who we perceive ourselves to be. Systemic change is a deeply personal endeavour. Our social and economic structures are a product of our way of thinking.

Our economy is based on the belief that we can extract resources boundlessly, use them inefficiently, and discard them wantonly. Over time we’ve developed a deeply exploitative ethos as the basis for our actions. We must now adapt to the scarcity of resources we have caused, and the rapidly diminishing space left in our global atmosphere for carbon emissions. To do this we must prioritise collaboration. “A shift in consciousness may sound grandiose to some, insufficient to others”.<sup>66</sup>



## 4. Change is possible. *But we must start with ourselves.*

**Any kind of progress requires us periodically to review the preconceptions and principles governing our thinking (Kuhn)<sup>67</sup>. This section applies insights from ‘The Tabula Project’ to the challenge of tackling climate change. How we think is inextricably linked to our sense of identity, which is a product of our history, of our individual and collective experience. [ANNEX]**

### 4.1 The map is not the territory

We may imagine that we are capable of seeing things as they really are, and that our own view is the "objective" one. However, we are laden with preconceptions and unexamined assumptions which colour and distort our view of everything. We cling to the illusion that we are capable of direct perception, but we are not. As anthropologist Gregory Bateson observed “very few people seem to realize the enormous theoretical power of the distinction between what I "see" and what is actually out there”<sup>68</sup>.

To understand knowledge, we need to know the characteristics of the groups which create and use it (Kuhn)<sup>69</sup>. The map is not the territory, no map shows all its presumed territory, and crucially it leaves out the map maker (Korzybski)<sup>70</sup>. The map maker is heavily influenced by the prevailing paradigms. Language defines who we are as a society. Preconceptions and assumptions inherited from previous generations are embedded in language, where we may not recognize them. Many of our collective representations are like a rainbow – “they appear solid but are made up of raindrops reflecting light” (Bohm)<sup>71</sup>.

### 4.2 We need a radical realignment of how we perceive ourselves in relation to others and the environment on which we depend.

There are serious limitations to a view of the world in which individuals are separate from society and the world they inhabit. Humans need to be understood as predominantly social and connected to the ecosystem. The ‘unit of survival’ is the organism plus its environment (Bateson)<sup>72</sup>. The cumulative effect of how we live our lives today is putting a massive strain on our ecological system. The complexity sciences provide useful insights into global trends. The modern world is unsustainable and on the way to a bifurcation point (Lazlo).<sup>73</sup>

The mind and the self emerge from the social through language (Mead)<sup>74</sup>. The mind is part of a much larger system<sup>75</sup>. Social structures are continually reproduced in the interaction between people (Stacey et al). According to a dynamical process perspective, the human mind is highly plastic continually forms and reforms connections and patterns. Knowledge is not stored in the brain but is a process of creation, undertaken in the living present<sup>76</sup>.

Our decision making is flawed when it ignores our interdependence with each other and the biosphere. Bateson observes that we are wired to focus on that which will serve our immediate self-interests, but by focusing on narrow self-interest and the "common sense" dictates of our individual consciousness we make decisions that are “greedy and unwise”<sup>77</sup>. The result is short term expediency and a lack of systemic wisdom.



### 4.3 We need to address the causes of problems and take a systemic approach

We pay too much attention to the symptoms of problems and not enough to the system. Treating the symptom makes the world a safe place for the pathology, such as ‘curing congestion’ by building more roads. Ideas have a self-fulfilling power of their own and when they go unexamined can become hard-wired habits difficult to reverse. Courses of action adopted for short term gain can by default be adopted for the long term often with disastrous consequences<sup>78</sup>.

Short-termism is a major obstacle for achieving net zero. The electoral cycle presents inbuilt challenges for the net zero agenda and leads to inconsistency of messaging and lack of certainty. An inability to recognize our interdependence with each other and the biosphere affects the behaviour and decision-making of consumers, politicians and businesses alike. There is insufficient understanding of how each can play their part.

### 4.4 Political expediency is self-defeating

We need to develop ecological policies that will encourage people to do the right things for the right reasons. ‘Stealth strategies’ – trying to substitute low-carbon behaviours for high carbon ones without people noticing – are inherently self-limiting as they do not make the case for change<sup>79</sup>. The reasons for ecological policies are as important as the policies themselves and these need to be communicated clearly to people. Otherwise, politicians will struggle to gain the mandate they need to take future difficult decisions<sup>80</sup>.

A greater level of self-awareness is needed. Our perspective is impaired if we are unable to recognise how our past experiences both on an individual and collective level affect our judgement and cause us to affect the world in ways we do not expect or intend. Our ability to form an integrated position is further undermined by our coercion by consumer culture<sup>81</sup>.

### 4.5 Towards a more stable social order

Stuart Kauffman, the pioneering complex systems researcher and leading thinker, suggests that self-organization is the root source of order. "Order is free, it just happens". He points to the importance of cooperation over competition, creating a state of dynamic equilibrium. How do we avoid potential catastrophic consequences? He suggests all we can do is “be locally wise, even though our own best efforts will ultimately create the conditions that lead to our transformation to utterly unforeseen ways of being”<sup>82</sup>

We need to move beyond polarizing notions of good and evil. Sociologist Norbat Elias suggests that we avoid emotionally charged ideological evaluations and take a "detour via detachment". He suggests that we already know that much depends on achieving a better balance between self-restraint and self-fulfillment, but such a balance still eludes us. We know *that* we are able to live a more civilised existence, but not *how* to bring it about.

Elias hopes that it should not be beyond the reach of humanity in the thousand years ahead of us. Perhaps one day, in the distant future, if the human race hasn't destroyed itself or made the planet uninhabitable, “we may be seen as the ‘late Barbarians.’”<sup>83</sup>



## 5. A new paradigm for a greener future

**‘Policy as usual’ will not achieve net zero. We need to move away from short-term thinking and take a systemic long-term approach that recognises our interdependence with each other and the biosphere. We need a new paradigm. A net zero test for all public policy decisions would help ensure policy alignment. We need a clear and compelling vision of the future we want.**

Professor Jackson defines prosperity as our ability to flourish within the ecological limits of a finite planet.<sup>84</sup> Ervin Lazlo points to the obsolescence of modern beliefs such as: the "law of the jungle", the "invisible hand", and "a rising tide lifts all boats". We need to move beyond liberalism and communism to a 3rd strategy whereby we co-evolve the person and society, optimising individual freedom and autonomy and ensuring at the same time social justice and equity.<sup>85</sup> We need to think and act in a global context with a long-term horizon.<sup>86</sup>

We need a new paradigm. Our fixation with cost-benefit analysis based on strictly linear GDP growth undermines net zero objectives and gives insufficient focus health and well-being, enhancing biodiversity, creating jobs, reducing poverty and increasing resilience. We focus on the wrong targets. A mandatory responsibility to deliver *carbon reduction* rather than numbers of houses would be a game changer. **A net zero test for public policy** would ensure cross-government policy alignment, that government sticks to the least-cost path to net zero and that net zero is considered early enough in the decision-making process.

Climate change has been described as greatest market failure that the world has seen<sup>87</sup>. Getting the pricing of carbon right across the economy would correct this market failure but crucially, pricing and environmental taxes must be designed to protect poorer households. Studies suggest that the overall impact of a carbon tax can be progressive depending on the nature of revenue-recycling and the treatment of transfer income. Whilst a carbon tax would lead to higher prices of goods and services such as fuel and electricity, the tax's revenue can be returned to households in ways that promote progressivity.<sup>88</sup>

We need an **energy demand reduction strategy** to tackle worst cost-of-living crisis in a generation that will accelerate the transition to net zero and enhance our energy security. The strategy should include a **universal carbon allowance** and a package of **energy efficiency measures** including help for poorest households to insulate their homes. The strategy would be funded by putting a carbon price on everything we consume and would be a progressive measure that would incentivize people to reduce their energy use. Individuals on higher incomes would pay more in carbon tax through all the goods and services they buy but receive the same fixed allowance as those on lower incomes. Higher income households consume three times more carbon than lower income households<sup>89</sup>.

Getting the pricing of carbon right across the economy would ensure that the right decisions from a net zero perspective become the most cost effective and politically acceptable. We must paint an inspiring **greener vision for the future** to help build the mandate for change. Our towns and cities would become more livable places free of congestion and air pollution, with more connected communities and better opportunities for all.



## Pathways to Net Zero Roundtable Discussion Series 2

Greener Vision is holding two Pathways to Net Zero roundtable discussions in October 2022. *Hasta La Vista, Carbon!* will seek to find solutions to tackle the worst cost of living crisis in a generation that will also accelerate the transition to net zero and enhance our energy security. *The Future We Want* will paint an inspiring picture of what a zero-carbon future could look like.

### 1. Hasta La Vista, Carbon!

Pathways to Net Zero Online Roundtable Discussion Series 2

Monday 10th October 2022, 10:00-11:45

**Hasta La Vista,  
Carbon!**  
10 October

Pathways to Net Zero  
roundtable discussions  
brought to you by

 greener  
vision

 trueform  
Sustainable Mobility Infrastructure

There are many challenges facing the world in 2022. The war in Ukraine, rising inflation and record high food and energy prices mean that governments around the world are seeking to shore up their energy security. But the greatest cost of living crisis we are all facing is caused by inaction in the face of the “now or never” warning of the IPCC on tackling climate change. We cannot afford any decarbonisation procrastination.

The spike in energy prices is because of our dependency on fossil fuels. If we are to break our dependency, we must boost our energy security by pricing carbon properly, investing in home-grown renewable sources and reducing energy demand. In doing so, we will both protect ourselves from geopolitical turbulence and shield our future by delivering up to a 70 per cent reduction in global greenhouse gas emissions by 2050.

The rise in the energy price cap in October means 8 million people in the UK face being pushed into fuel poverty as winter approaches. The new Prime Minister must have a strategy to tackle the worst cost of living crisis in a generation that will also accelerate the transition to net zero and enhance our energy security. This can only be done by saying: “Hasta La Vista, Carbon!”





## 2. The Future We Want

Pathways to Net Zero Online Roundtable Discussion Series 2

Thursday 14th October 2022, 10:00-11:45

**The Future  
We Want**  
17 October

Pathways to Net Zero  
roundtable discussions  
brought to you by

 **greener  
vision**

**trueform**  
Sustainable Mobility Infrastructure

When painting a picture of the future, what colours would you choose for your pallet? Would you choose the choking scenes of post-industrial inner cities, or would you choose the bright, clear colours of a natural sky?

Whatever your political persuasion, green is the colour we all wish to see in our vision of tomorrow.

There is no shortage of dire warnings, but what we need is a clear articulation of the future we want.

Imagine the benefits of a life beyond fossil fuels with our local transport networks transformed, our towns and cities free from congestion and air pollution and communities brought together, fully connected and able to provide better opportunities for us all.

This is the vision we want to create to inspire the public and help our leaders get behind. Join us to help shape what the vision to supercharge our work should be!

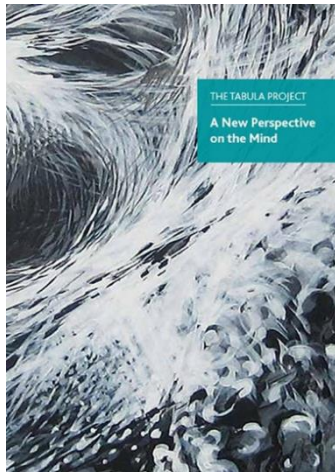
**If you would like more information, please contact the event organisers at:**  
[greenervision@connectpa.co.uk](mailto:greenervision@connectpa.co.uk)



## **ANNEX: ABOUT THE TABULA PROJECT**

The overall objective of [The Tabula Project](#) is to provide a new perspective on the mind so we might improve how we think and evolve as a society. The paintings depict states of consciousness and thought, and the development of the project is informed by extensive research across a range of disciplines. How we think is inextricably linked to our sense of identity, which is a product of our history, our individual and collective experience.

[The Tabula Project: A New Perspective on the Mind](#) describes the development of the paintings and how they relate to different states of consciousness and thought

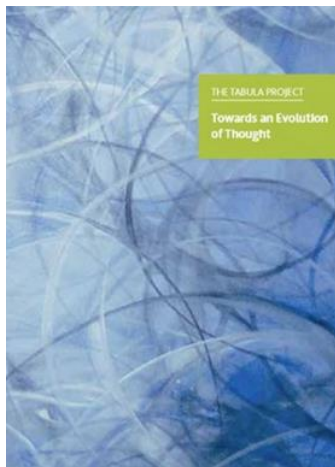


The level of threat we live with is greater than ever, but the mindset that got us into this predicament won't get us out of it. If we want to change behaviours, we need to change the premises which led to them.

We need a shift in mindset from one where we are narrowly focused on individual desires, inward looking, preoccupied by our own repetitive thoughts and unable to live in the present to one where we are at one with our society, the environment and world around us.

Ultimately it will be through the cumulative impact of changes at the individual level that society might evolve.

[The Tabula Project: Towards an Evolution of Thought](#) includes a summary of the main findings of research. The material is grouped into three main sections:



**Examining how we think** – outlines some of the assumptions governing our thinking and how we perceive ourselves in relation to others.

**The need for change** – highlights the fact that our understanding of ourselves is deeply problematic and we need to embrace a more holistic perspective where the individual and the social cannot be separated.

**Towards an evolution** – points to the steps we need to take to begin to evolve our thinking and make better decisions grounded in our fundamental interdependence with each other and with the biosphere.



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