

SUMMER 2019

THE OVERLOOKED SIDE OF THE ECOLOGICAL TRANSITION

DISCUSSION PAPER



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INTRODUCTION

THE OVERLOOKED SIDE OF THE ECOLOGICAL TRANSITION

Published as part of Friends of Europe's Climate and Energy Programme, this discussion paper aims to stimulate a debate on how to support a sustainable ecological transition, taking into consideration aspects ranging from cost, financing and the facilitation of a whole-of-society approach to decarbonisation. The report addresses the pitfalls and dilemmas that are regularly overlooked in the conversation on the ecological transition.

The authors tackle a number of controversial subjects in their analyses, such as the costs and benefits of the transition, the decoupling of GDP and carbon emissions, carbon mechanisms and pricing, fossil fuel subsidies, digital emissions, smart resource management and the fundamental role of nature. By adopting an innovative approach to problem-solving, this paper seeks to open a space for discussion on the challenges presented by the ecological transition.

While there is much consensus about the need for climate action, grasping the complexity of the ecological transition is a different matter. As a result, this report intends to shed light on the key elements that require our attention if we are to succeed in achieving a holistic ecological transition. Each article is authored by an expert in their field, who was asked to identify the areas that are most frequently prone to neglect and to suggest ways of avoiding the classic missteps that often accompany any significant societal transition.

Based on these contributions, Friends of Europe has pulled together a unique set of recommendations. Given the policy leverage of the public sector in Europe, these recommendations focus primarily

on procurement capacity, investment in research and development (R&D), citizen-driven change and how to influence private sector approaches by setting frameworks of legislation, standards and pace. Our hope is to create greater policy coherence and to accelerate the transition to a low-carbon future.

This publication is especially timely in light of the new set of Members of the European Parliament and the formation of a new EU mandate and European Commission. We know that citizens across Europe are calling for a change in approach when it comes to matters of climate. The citizen survey we conducted last autumn found that action on climate change represented a key priority for citizens.

Friends of Europe has made its own contribution to ongoing developments by setting out a number of policy recommendations for the new EU mandate in the areas of sustainability and prosperity. Outlined in our [Vision for Europe report](#), this forms an integral part of our #EuropeMatters initiative. At the heart of this initiative is a commitment to revitalise citizens' enthusiasm for the EU through bold and pragmatic action, as led by the incoming set of politicians and officials from across the various EU institutions.

Last autumn, international experts raised the stakes on what will be required by public, private and civil society sectors if we are to prevent the serious consequences wrought by an ecological breakdown. However, both money and time will be vital, neither of which we have at present. To ensure that targets and practical actions are aligned in the EU's next mandate, it is clear that the time and money nexus should focus on crafting the right policy framework.

FOREWORD

Tackling the impact of climate change and facilitating a just ecological transition is a matter of reconciling the forces of supply and demand with the politics that surround them. Armed with compelling data and personal experience living through the impact of climate change, young people across the globe are demanding a different deal from governments as inaction increases the risk of inheriting an inhospitable environment. The urgency of tackling climate is evident as green parties saw huge gains in the recent European elections, signifying that this issue has finally broken into the European political mainstream.

How the new EU mandate makes the most of their presence and the public appetite for increased climate action will ultimately be determined by politics and politicians. We can only hope that they listen and take heed, electing not to revert to party lines but instead to building bold coalitions committed to addressing what is a true global emergency.

Achieving net zero emissions by 2050 is a tremendous challenge that will require bold structural changes at all levels of society – from governmental to the individual levels. Both a new political mandate in Europe and a lifestyle change compatible with 1.5°C of warming since pre-industrial level will require strong resolve, as

well as robust economic stimulus, for change to happen. Currently, our dependency on fossil fuels is not aligned with the future we want as Europeans.

Energy consumption in the EU is still 80% dependent on fossil fuels and represents 75% of related greenhouse gases emissions. To achieve carbon neutrality by 2050, emissions will have to be almost entirely eliminated prior to that deadline. Europeans must understand that our dependency on fossil fuels increases our economic and environmental vulnerability. It is time for Europe to envision progress differently while embedding and controlling risks.

Europe was the cradle of the Industrial Revolution. Some 250 years later, it wants to take the lead in achieving carbon neutrality by 2050. The outgoing European Commission has offered a route forward and a stimulus for the next EU mandate to take up the challenge of steering Europe towards an ecological transition.

Achieving this objective implies reconciling the necessary and the desirable. It is not merely about greening the existing system but rather adapting it to contemporary challenges by transforming the economic and social model it is based on. For this to happen, a new relationship

of trust must be formed between citizens and policymakers. With this publication, we aim to shed light on unconventional and inconvenient truths about the climate and energy transition as a means of building trust amongst individuals at a critical time.

In June 2019, the European Council intended to adopt a new ‘Strategic Agenda’ for the next five years. Unfortunately, attempts to coalesce the bloc’s environmental priorities around the landmark climate strategy for 2050 failed. EU-28 leaders failed to find common ground on the carbon neutrality end goal by mid-century. Reaching unanimity was not possible as four countries – the Czech Republic, Estonia, Hungary and Poland – opposed it.

It appears that the ‘East-West’ political divide that dominates so many other EU political debates has entered the fray on climate negotiations. This has unfortunately prevented EU leaders from working in the interest of the common good. It has also inhibited their ability to recognise what their citizens want, displaying their short sightedness of the urgency for remedial climate action. What we know for certain is that climate change does not take account of borders or self-interests as its impact grows and its capacity to wreak havoc becomes more apparent every day.

Reaching carbon neutrality by 2050 will be an immense task. Lifestyles will have to change. Industries will have to transform. In our view, what is required are ‘whole society’ and ‘whole economy’ approaches geared towards re-setting and remoulding age-old assumptions

about economic growth and the forces of supply and demand. It will require a deep reflection on how to enable behaviour change and sync this change with the opportunities of a fast-paced digitised society characteristic of the emerging Fourth Industrial Revolution.

As commentators have said on many occasions, there is no shortage of solutions, money or capacity – it’s the political will that is missing from the equation. Finding innovative ways to reconcile economic aspirations with the need to build a resilient Europe capable of coping with the ecological challenges of the 21st century is an opportunity to bring Europe together again and rekindle passion for the European project. Our hope is that political myopia is outweighed by citizen movements that will call for and drive urgent action.

This publication highlights the difficult trade-offs, political questions and market challenges of the ecological transition while presenting pragmatic solutions for a climate-neutral Europe.

Dharmendra Kanani, Director of Insights at Friends of Europe

Raphaël Danglade, Programme Manager for Climate and Energy at Friends of Europe



PART 1

ENERGY PRODUCTION

THE REVERSE SIDE OF THE MEDAL

Europe's **clean energy transition:** an economic opportunity, an environmental imperative

Unless we make a quick and decisive shift to a low-carbon energy system and economy, by 2030 we will pass the point by which we can keep global average temperature rise to well below 2°C

Helen Mountford, Vice-President for Climate and Economics at the World Resources Institute (WRI)

With each passing year, the risks of unabated climate change mount. The last 19 years included 18 of the warmest years on record, worsening food and water security risks and increasing frequency and severity of hazards such as wildfires. Last year, fires even hit regions that are typically wetter and cooler, such as England's peatland moors and Ireland. Worldwide, disasters triggered by weather- and climate-related hazards were responsible for thousands of deaths and US\$330bn in economic damage in 2017.

Despite mounting awareness of the climate crisis, fossil fuels still account for 80% of global energy consumption and 75% of greenhouse gas emissions. Beyond the environmental cost, this carries massive economic and health

costs. Relying on imported fossil fuels can drive economic vulnerability, as countries and businesses are subject to volatile fuel prices. And dangerous outdoor air pollution due to fossil fuel burning kills an estimated 4.2mn people a year globally.

Unless we make a quick and decisive shift to a low-carbon energy system and economy, by 2030 we will pass the point by which we can keep global average temperature rise to well below 2°C, unleashing the potential for runaway climate change with enormous risks to life as we know it.

The good news is, the benefits of bold climate action far outweigh the costs. The New Climate Economy's 2018 Report finds that ambitious

climate action could bring a US\$26tn boost to the global economy between now and 2030. It can also deliver more than 65mn new low-carbon jobs globally (equivalent to the combined workforce of Egypt and the UK today) and avoid over 700,000 premature deaths in 2030.

The clean energy transition is well underway, driven by market forces and plummeting costs of renewable and storage technologies, with the cost of solar and wind down by 86% and 67% between 2009 and 2017, respectively. This shift not only has the potential to limit the impacts of climate change, it can also provide a range of economic opportunities. Fossil fuel subsidy reform, combined with carbon pricing, for example, could generate an estimated US\$2.8tn in annual government revenues or savings by 2030. These are revenues that governments can use to address urgent public priorities, such as poverty reduction, public health, public transport, and a well-managed and just transition.

We're already seeing a strong shift to renewable energy sources in some of the world's largest economies. China invests more in renewable energy than any other country in the world (45% of the world's total), and plans to put US\$360bn into the sector by 2020, creating 13mn jobs. The government is also gradually introducing a nationwide carbon emissions trading scheme. In India, the government has set out plans to generate 175 gigawatts (GW) of renewable electricity by 2022, and the country is well on its way to achieving this goal. Over the past four years, India's solar energy capacity has increased eightfold.

Countries are even prioritising low-carbon approaches in their development planning. In Indonesia, the government has set out to transform the country's economy into one where progress is measured not only by GDP growth, but also environmental sustainability, resource efficiency, and social equity. A recent report from Indonesia's Low Carbon Development Initiative finds that once local air pollution costs are considered, the cost of new coal projects is now higher than renewable energy generated from wind, solar, geothermal, and hydropower.

As emerging economies start to set the bar even higher, the European Union should strive to continue to be ahead of the curve, as its ideally positioned with well-developed markets and as an early leader on carbon pricing and renewable energy policies. This is clear, for example through leading approaches like the 'Energiewende' in Germany, the UK's long-term Climate Change Act and the policies that support it, and Sweden's commitment to net-zero emissions by 2045.

While carbon pricing has been in place across the region for a long time, helping to spur renewables and clean technologies, other countries are rapidly catching up: as of today, 74 countries or regions around the world now have some form of carbon pricing in place or about to start. A next step for the EU will be to raise the region's Emissions Trading System (ETS) price, which is still too low, for example through a floor price as some countries have already successfully put in place.

As a frontrunner region, the EU can take advantage of exciting emerging trends, such as the rapidly building new trend in the finance sector to shift away from fossil fuels and toward clean technologies. The growing demands to transparently disclose climate-related financial risks, for example, can play an important role in helping shift private investment. 785 companies and organisations with a combined market capitalisation of over US\$9.2tn have publicly committed to support the recommendations of the Taskforce for Climate-related Financial Disclosures. This includes over 374 financial firms responsible for US\$118tn in assets – more than the annual GDP for the world today. A number of these companies are now starting to apply the TCFD's recommendations. Disclosure of climate-related risks and opportunities can provide investors and companies with the information needed to invest better, and to develop transition plans and strategies to manage existing risks, such as around potential stranded assets in the power sector due to a shift away from investment in coal.

Diversifying economies, particularly those that are fossil fuel-rich, is not easy. Although renewable energy companies employed 10.3mn people worldwide in 2017 and are the fastest-growing source of jobs in several countries today, the transition for regions and communities dependent on fossil fuels today will need to be very thoughtfully managed to ensure a just transition. The importance of properly addressing inequalities in the transition has been brought home starkly by the Yellow Vest protesters in France and elsewhere.

The good news is that there are a growing number of social dialogues and processes set up to manage the shift, including in Norway, Scotland, Spain and others. Recently, Germany launched the results of its “Commission on Growth, Structural Change and Employment” to manage the transformation of the power sector, including for workers and regions that depend on coal fired power and coal mining.

Businesses can also play a proactive role in managing this transition. Italy's ENEL utility, for example, is transitioning out of coal, but is doing so while helping to spur employment in affected communities. ENEL's plans for closure of 23 coal-fired power plants have been developed in collaboration with the sector unions. Through this, ENEL guaranteed that there would be no involuntary redundancies, and that the workforce would be redeployed within the company where possible. ENEL also sought out employment-generating solutions in communities previously based on coal, such as building renewable power capacity or new technology hubs.

The world is changing. Moving from brown to green energy is a key element of the direction of the future, and one that is ripe with business opportunities and near-term benefits including cleaner air and new jobs. This is not only an economic opportunity for Europe, but also a moral imperative to “ensure access to affordable, reliable, sustainable and modern energy for all” (SDG 7). Transitioning to a low-carbon energy system is not an option – it's critical to achieve a better economy and better lives for us all.



One step forward, two steps back: **fossil fuel subsidies** and reform on the rise

“The importance of FFS reform is clear and unanimous: FFSs are socially regressive, failing as a social welfare policy tool and potentially preventing government funding of more sophisticated social security nets”

Laura Merrill, Global Subsidies Initiative Manager and Senior Policy Advisor at the International Institute for Sustainable Development (IISD)

Over the past decade, there has been widespread agreement on the benefits of reforming subsidies to fossil fuels, a move supported by the commitments and discussions that have taken place within international forums. It is reassuring to note that between 2012 and 2016, fossil fuel subsidies (FFS) to consumers almost halved, going from \$504bn to \$260bn. This reduction was due to a combination of reform efforts and a decrease in international prices for crude oil, both of which provided a window of opportunity for action and allowed governments to implement long-awaited reform plans.

In a review of reform efforts, the Global Subsidies Initiative (GSI) has mapped the countries that have implemented some level of FFS reform between 2015 and 2018, acknowledging the various policy changes that have contributed to declining fuel subsidies. Some fifty countries have implemented some level of policy change during this time – change that ranges from alterations in fuel prices to the deregulation of energy tariff reforms. While this map is not an exhaustive picture of all subsidy policy change, and although it does not cover all subsidies within a country, it does illustrate the broad engagement of countries, as seen at a national level, in tackling the FFS issue.

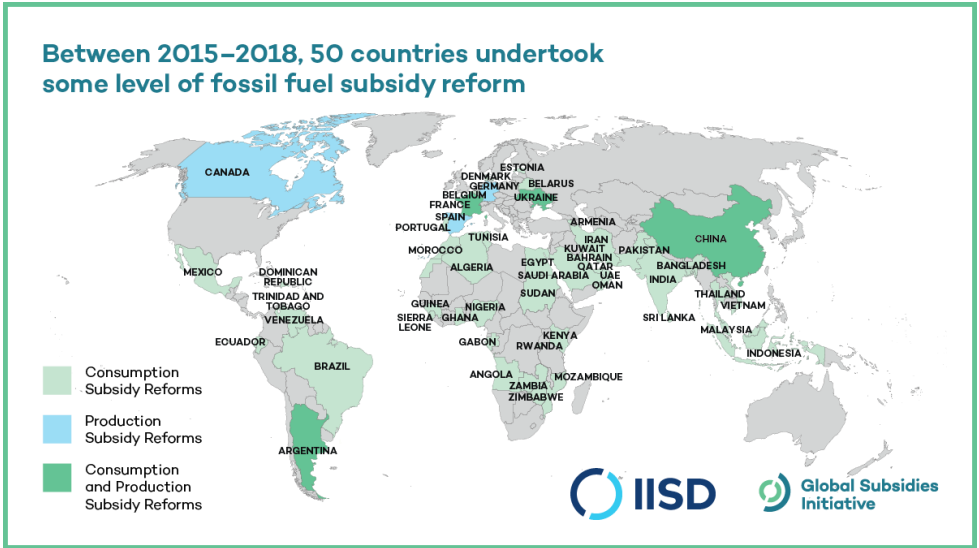


Figure 1. Between 2015 and 2018, 50 countries undertook some level of fossil fuel subsidy reform
Source: GSI

Despite these reforms, the International Energy Agency (IEA) found that consumer support for subsidies increased slightly in 2017, reflecting pressure on previously implemented reforms due to the rise of oil prices in the international market (Figure 2). The IEA finds that consumer FFSs (price-gap methodology) increased from \$270bn in 2016 to \$302bn in 2017. The increase is linked to a change in the average oil price from \$42 per barrel in 2016, to \$52 per barrel in 2017. However, the 12% increase in consumption subsidies was considerably less than the 25% increase in oil price; this

indicates that there is still a level of ongoing reform that has taken place and is being maintained. In this context, governments will need strong encouragement and support to maintain existing energy reforms, while also introducing additional energy sector reforms and enabling domestic prices to reflect changing international ones. Reforming FFSs and shifting to renewable energy are two processes by which governments are afforded the opportunity to protect themselves from the volatility of international oil prices.

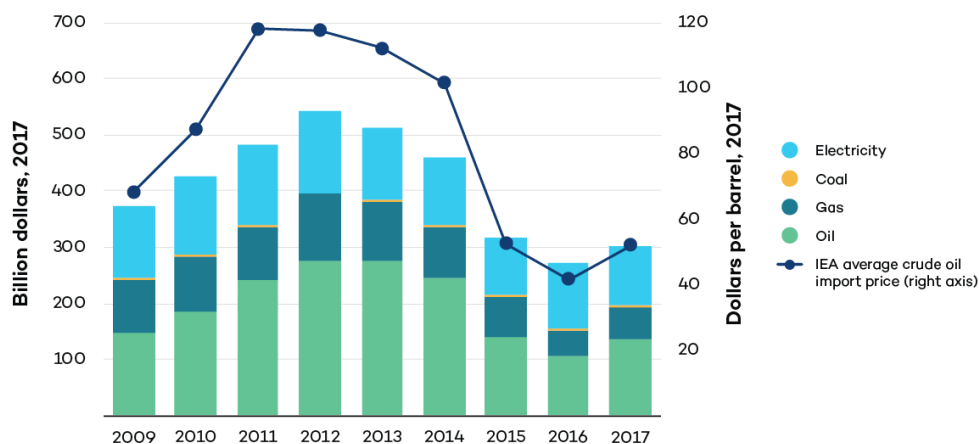


Figure 2. Global fossil fuel consumption subsidies – IEA estimation

Source: IEA. (2018). World energy outlook 2018. Paris: IEA. Reprinted with permission.

Moreover, the IMF recently released a working paper with updated global estimates of consumer price support for FFS estimates using pre-tax and post-tax subsidies approaches. The latter differs from the IEA method, given that it includes un-priced externalities arising from fossil fuel usage, such as GHG emissions and emissions of air pollutants, as well as social costs associated with driving (e.g. traffic congestion). According to the authors, these costs are 15 to 20 times larger than pre-tax subsidies, which stood at \$296bn in 2017. They reached \$5.2tn in 2017, up from \$4.7tn in 2015, starkly illustrating the broader negative costs and the impact that fossil fuels have on

the environment and the economy as a whole. Furthermore, the research highlights the reality that there has not been a sharp increase in the pricing of environmental costs at the global level, despite the 2015 Paris Agreement and implementation of reforms in several countries (see Figure 3).

Yet, even without including huge externalities, GSI estimates that the scale of subsidies to fossil fuels is still significant, sitting at around \$400bn in 2017 (\$300bn per year for consumer subsidies and between \$70bn and 100bn for producer subsidies, which are consistently underreported).

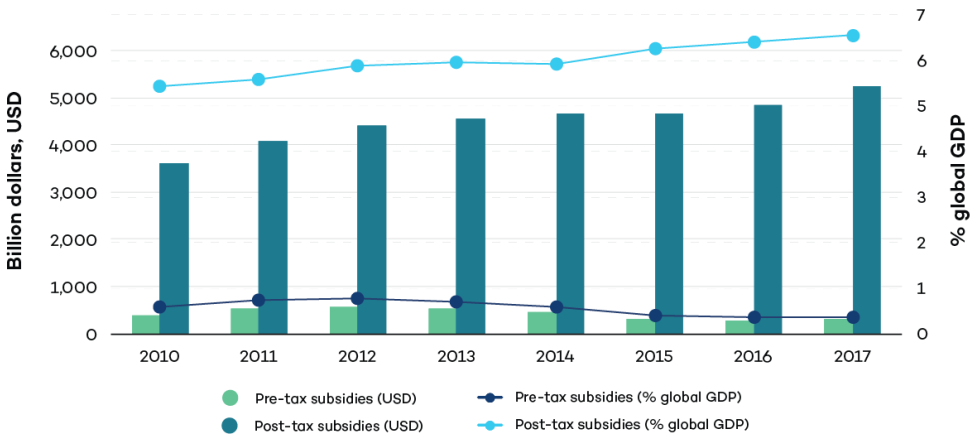


Figure 3. Global Energy Subsidies, 2010–2017

Source: Coady, D., Parry, I. Le, N-P., & Shang, B. (2019). Global fossil fuel subsidies remain large: An update based on country-level estimates (p. 20). IMF Working paper. Reprinted with permission.

It is crucial to implement and acknowledge the importance of FFS reform and the correct pricing of fossil fuels, even more so when the world is made aware of the high costs that accompany fossil fuels. When envisioning future steps, countries can observe successful reforms and pricing efforts which have been implemented by other countries around the globe, for example, through the research and networks that allow for knowledge exchange and provide important lessons for governments pursuing FFS reform.

India, for instance, has been succeeding in many different aspects in its phasing out of FFSs. Between fiscal year (FY) 2014 and FY 2017, the country cut subsidies to oil and gas by 76%, from \$26.1 bn to \$5.5bn, thanks to a combination of various reforms and a decrease in international oil prices. During the same period, government support for renewable energy grew almost sixfold — from INR 2,608 crore (\$431mn) in FY 2014 to INR 15,040 crore (\$2.2bn) in FY 2017. Meanwhile, in 2015, liquefied petroleum gas subsidies began to consumers’ bank accounts, putting

in place the world's largest benefit transfer scheme as a way to avoid diversion and eliminate duplicate connections and non-existent users. Moreover, the country has also implemented communication campaigns to assess consumers' views on developments, which is a key part of delivering successful reforms.

On the other hand, some countries have been struggling to maintain efforts to phase out FFSs for many different reasons. In 2015, Indonesia completed its reform of gasoline and diesel subsidies, saving up to \$15.5bn. However, the country has not implemented fuel price changes in a consistent and regular manner, as evidenced by the gaps that have become apparent when prices were adjusted over time. Prices were last locked in 2019 in the leadup to recent presidential elections. More importantly, the island country has continued to invest in coal power plants, going against the encouraged global practice of moving toward cleaner sources of energy.

Whatever the case, the importance of FFS reform is clear and unanimous: FFSs are socially regressive, failing as a social welfare policy tool and potentially preventing government funding of more sophisticated social security nets, including investment in health and education.

Furthermore, such subsidies lock us into a high-carbon future and their elimination could contribute to reducing carbon emissions, as stated in the Paris Agreement. Despite considerable efforts to reform FFSs, the absolute value of subsidies increased in

2017, both in subsidies captured within the economy and those yet unpriced, which brings massive broader costs to society (the externalities). It is therefore crucial that countries persist with efforts to phase out subsidies to fossil fuels and usher in more efficient social welfare and sustainable energy systems. To succeed in doing so, it will be imperative that they are supported in their endeavours by the international community.

This article is republished from GSI Subsidy Watch Blog, May 23rd 2019.

<https://www.iisd.org/gsi/subsidy-watch-blog/fossil-fuel-subsidies-and-reform-on-the-rise>



PART 2

TECHNOLOGICAL INNOVATION

THE END TO ALL OUR TROUBLES?

Does the ICT sector **hamper or help** of carbon emissions?

ICT energy consumption is increasing, but incrementally rather than exponentially

Emma Fryer, Associate Director for Data Centres at TechUK

The Information and Communications Technology (ICT) sector has grown rapidly over the last two decades and data flows are increasing exponentially, driven by policy agendas, the adoption of digital delivery channels by government and business, and consumer preferences. Way back in 2007, Gartner observed that ICT energy use was significant but under-reported, asserting that the sector's carbon footprint was similar to the airline industry. Although a flawed comparison, it stimulated a stream of articles and studies, many claiming that ICT energy use was exploding and would spiral out of control when the Internet of Things (IoT) becomes a reality and a new global middle class comes online.

The truth is more mundane. ICT energy consumption is increasing, but incrementally rather than exponentially. This is because the relationship between activity and energy use is more complex in ICT than in sectors like farming and manufacturing. However, the sector's share of electricity is non-trivial, which is challenging for governments because ICT pervades all fields of our economy (rather like eggs in a cake) so it is very hard to attribute consumption accurately or implement effective policy measures.

Even within the sector it's complicated: the proportion of energy used by devices, networks and data centres respectively is constantly changing. End user devices have proliferated –

there are now more mobile phones than people – and dependence on remote, centralised data processing and storage is increasing. On the other hand, on-premises IT is declining as applications are migrated or outsourced to cloud and third-party data centres. As a result, commercial data centre operations are expanding, with the most conspicuous growth in hyperscale cloud providers .

ICT's role in mitigating climate change is dual. Firstly, it can address sector emissions through energy efficiency and renewables uptake. Secondly, and more importantly, it has the potential to deliver emissions reductions across the wider economy.

In terms of efficiency, progress is good. Rapid technological evolution has improved processor efficiency by around seven orders of magnitude over the last three decades. Apply that to air travel and we would now get from London to New York in seconds, using less than a litre of kerosene. These improvements are augmented by developments like virtualisation, improved server tolerance to heat and humidity and innovative cooling technology. Trends like consolidation (moving servers from cupboards to purpose-built facilities) reduces energy consumption by around two-thirds.

The same is true of our communications networks: each evolution of mobile infrastructure delivers a step change, so 5G is massively more efficient than its predecessors. Energy dominates operational costs for network and data centre operators which strongly motivates good stewardship. Adherence to relevant

standards like ISO50001 is exceptionally high . British data centre sector also participates in a government scheme that incentivises energy saving investments and makes energy consumption transparent and accountable.

Renewable adoption is also good. The ICT sector now buys a higher proportion of certified renewable power than any other industry, generally through power purchasing agreements and is driving demand for investment in additional supply. Many ICT companies are also exploring both on-site and off-site renewable generation. Certain types of data centres are 'location agnostic' and can make use of existing, underused renewable power sources. As a result, large hyperscale operators, currently accounting for the majority of sector growth, are expanding operations in regions like Scandinavia.

Although ICT depends wholly on electricity, core digital infrastructure installations like data centres maintain emergency generating capacity in the form of diesel plant, plus short-term battery storage. They can therefore contribute to load-balancing, which is critical in handling intermittent renewables. Moreover, operators are actively driving R&D in battery technology to extend storage capacity and others are trialling fuel cells. Heat reuse is at an early stage in the UK due to lack of infrastructure but is well established in Scandinavia and being rolled out in the Netherlands.

But it is the net impact of ICT that is the most important. ICT is adopted in the private and public sectors because it improves

productivity and efficiency. This has been demonstrated in fleet logistics, computer-aided design, in-silico modelling, predictive maintenance and dematerialisation (where physical journeys and media are minimised or eradicated). Estimates suggest that the intelligent application of ICT can reduce global carbon emissions by around 20%.

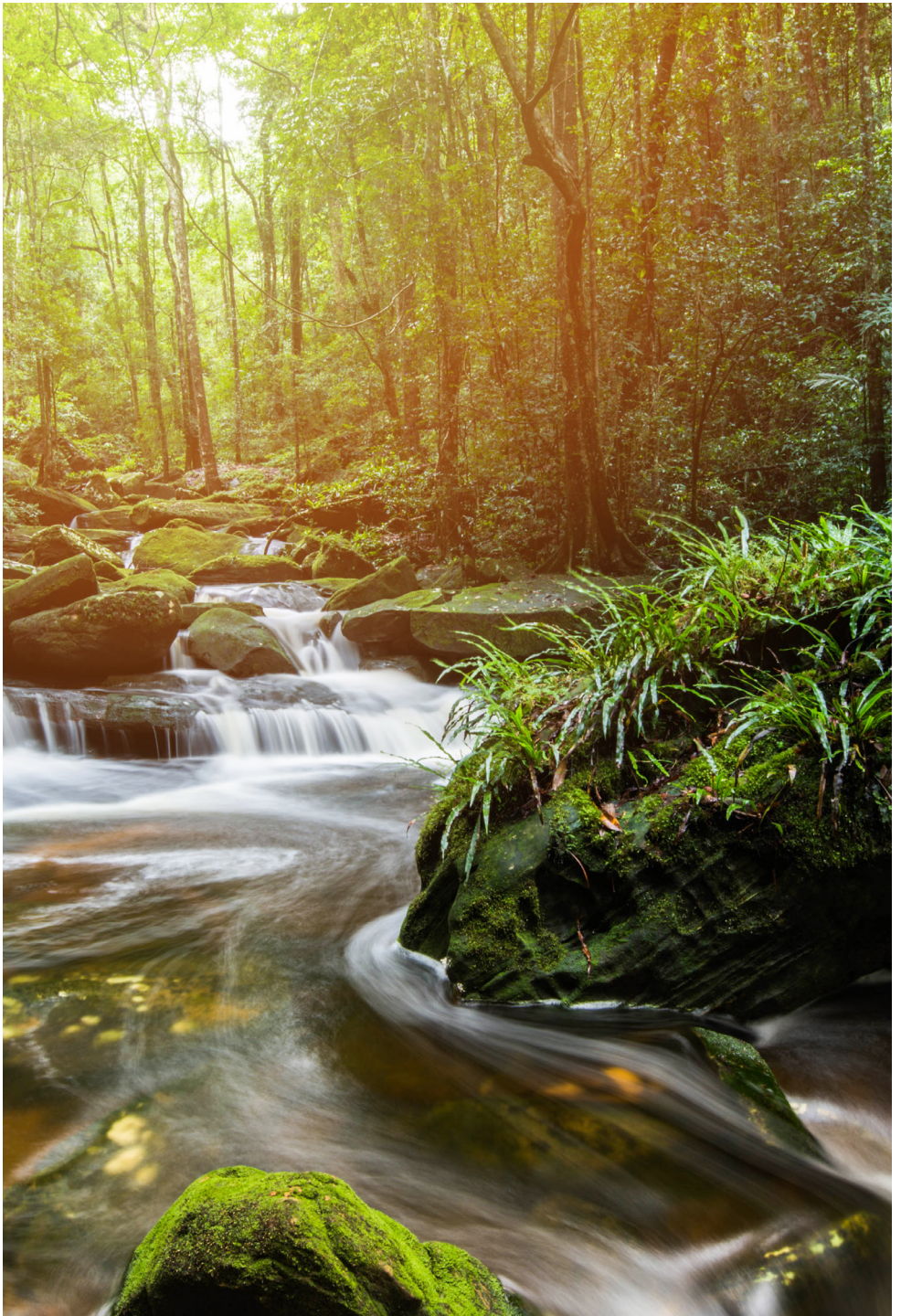
Let it not be forgotten that without ICT we could not monitor and model climate change or conduct a global conversation about it. Even those organisations most critical of ICT make extensive use of digital media to communicate their messages.

However, we can't assume that ICT automatically delivers emissions reductions. A market-based taxi system may reduce car numbers in American cities with limited public transport but in European cities the opposite may happen if cars displace public transport journeys. And there are other issues to consider. ICT is increasingly becoming a utility like electricity or water, and highly price-elastic. We flush our toilets and wash our cars with drinking-quality water because it is cheap. Likewise, the more efficient ICT is, the more we use it .

Moreover, the widely adopted freemium and advertorial business models are very effective in driving innovation, but do not give consumers any indication of the carbon impact of their digital activity. It's easy to be profligate with something that is cheap, or free. That said, the same price-elasticity acts as a controlling valve on energy consumption: if it does escalate, the market will apply financial signals. Imagine the

impact of even a small charge for each picture uploaded on Facebook.

In conclusion, the ICT sector is making a significant contribution to emissions reductions. Efficiency continues to improve at every level: component, device, infrastructure and even in terms of business models. Renewable adoption is high and ICT delivers economy-wide improvements in carbon productivity. Nevertheless we cannot be complacent and must maintain a watchful eye on business processes and trends. ICT does not automatically improve efficiency: digital technology must be deployed intelligently if we are to optimise its capabilities, so continuous scrutiny is essential. We also need to understand energy flows better within the sector, and we need to make consumption more transparent, especially for consumers.



Nature: the **forgotten solution** to climate change

Without large-scale investment in nature conservation and restoration, we will not achieve zero net emissions in Europe

Luc Bas, European Regional Director, IUCN

Chantal Van Ham, EU Programme Manager Nature Based Solutions, IUCN

Nature-based solutions, such as restoring and protecting wetlands and forests, can provide over one-third of the climate change mitigation needed by 2030. The current annual mitigation effect of EU forests via contributions to the forest sink, material substitution and energy substitution is estimated at 569 Mt CO₂/year, or 13% of total current EU emissions. With the right set of incentives in place at the EU level, as well as at the member state level, Europe has the potential to achieve an additional combined mitigation impact, through the implementation of sustainable management practices and the creation of forest resilience, of 441 Mt CO₂/year by 2050.

Conserving and restoring forest landscapes is not only a cost-effective way to mitigate climate change, it also provides many other benefits to society. Healthy forests filter sediment and pollutants from rainwater runoff, protecting the quality of rivers and lakes, including drinking water sources. Restoring forest ecosystems, with appropriate species and connectivity

between habitats, is critical for biodiversity – approximately 29% of assessed forest species are threatened with extinction, according to the International Union for Conservation of Nature's (IUCN) Red List of Threatened Species.

The Global Assessment Report on Biodiversity and Ecosystem Service, published in May 2019, states that nature across most of the globe has been significantly altered by multiple human drivers. The great majority of indicators point to a rapid decline of ecosystems and biodiversity worldwide. To illustrate the scope of these alterations, 75% of the planet's land surface has been significantly altered, 66% of the world's oceans are experiencing increasing cumulative impacts and over 85% of wetlands have been lost.

From 2010 to 2015, 32mn hectares of primary or recovering forest was lost across much of the highly biodiverse tropics. Finding innovative ways to manage and restore forests to absorb carbon dioxide – to name one of the wide range

of benefits gained from abundant forests – is crucial if we are to meet the goals of the Paris Agreement.

Forests are increasingly threatened by a variety of pressures, including deforestation, land-use change and invasive alien species. They are further endangered by severe droughts and wildfires that are made worse by climate change. Sweden, for example, experienced extreme forest fires in the summer of 2018.

Unfortunately, wetlands worldwide are also under threat. 35% of the world's wetlands have been lost since 1970 and their degradation continues. Wetlands act as important sources and purifiers of water. They also provide protection from floods, droughts and other natural disasters, provide food and livelihoods to millions of people, support rich biodiversity, and store more carbon than any other ecosystem. Yet, the value of wetlands remains largely unrecognised by policy- and decision-makers, according to the 2018 Global Wetland Outlook. (6) One of the recommendations from the UN's Intergovernmental Panel on Climate Change is to restore nature, which creates an efficient solution to take up atmospheric carbon by using vegetation, wetlands and soil.

How nature can make the difference

Terrestrial ecosystems store four times more carbon than the atmosphere. Thus, the policy decision should be very straightforward: invest in nature-based solutions. After all, clean energy and other climate technologies alone will not be sufficient to reduce greenhouse gas emissions

at the scale and speed set out in the Paris Climate Agreement. A nature-based approach would provide an important asset to keep temperatures from rising two degrees.

Along with existing efforts to improve the ecological impact of energy, industry and transport systems, we need to drastically change the way that we use land. Nature is not an alternative to decarbonising our energy systems. Rather, it is an essential part of our overall climate mitigation strategy that provides multiple adaptation benefits. We need to scale nature-based solutions up.

A new campaign, Nature4Climate, was launched at COP24 in Katowice last year. Its mission is to catalyse global enthusiasm for drawing down carbon by restoring ecosystems and to raise awareness for the single most undervalued and underfunded tool for climate mitigation.

If we get nature right, it will help provide decent work and prosperity for thousands of small- and large-scale communities around the world. As the World Wildlife Foundation's (WWF) Living Planet Index showed last year, nature is worth an estimated \$125tn. Compared to the \$80tn that made up the Gross World Product in 2017, it is clear that at a global scale, about half of the world's population relies on nature for their jobs and their livelihoods.

A systems approach that recognises the value of nature and integrates it across business sectors, as well as the development of business models that reduce pressure on natural

resources, will pave the way for sustainable transition. To turn these ideas into actions, there is a need for investment in maintaining, restoring and enhancing the functions of ecosystems around the world. We need to join forces and create new knowledge together across sectors and disciplines, breaking down siloes.

Investing in nature-based solutions for a sustainable future

Nature-based solutions can support transformational change in both urban and rural landscapes; and there are many powerful initiatives that lead the way. For example, the City of Paris established a climate bond to finance climate and energy projects. The total size of the bond is €300mn, with a run time that lasts until May 2031.

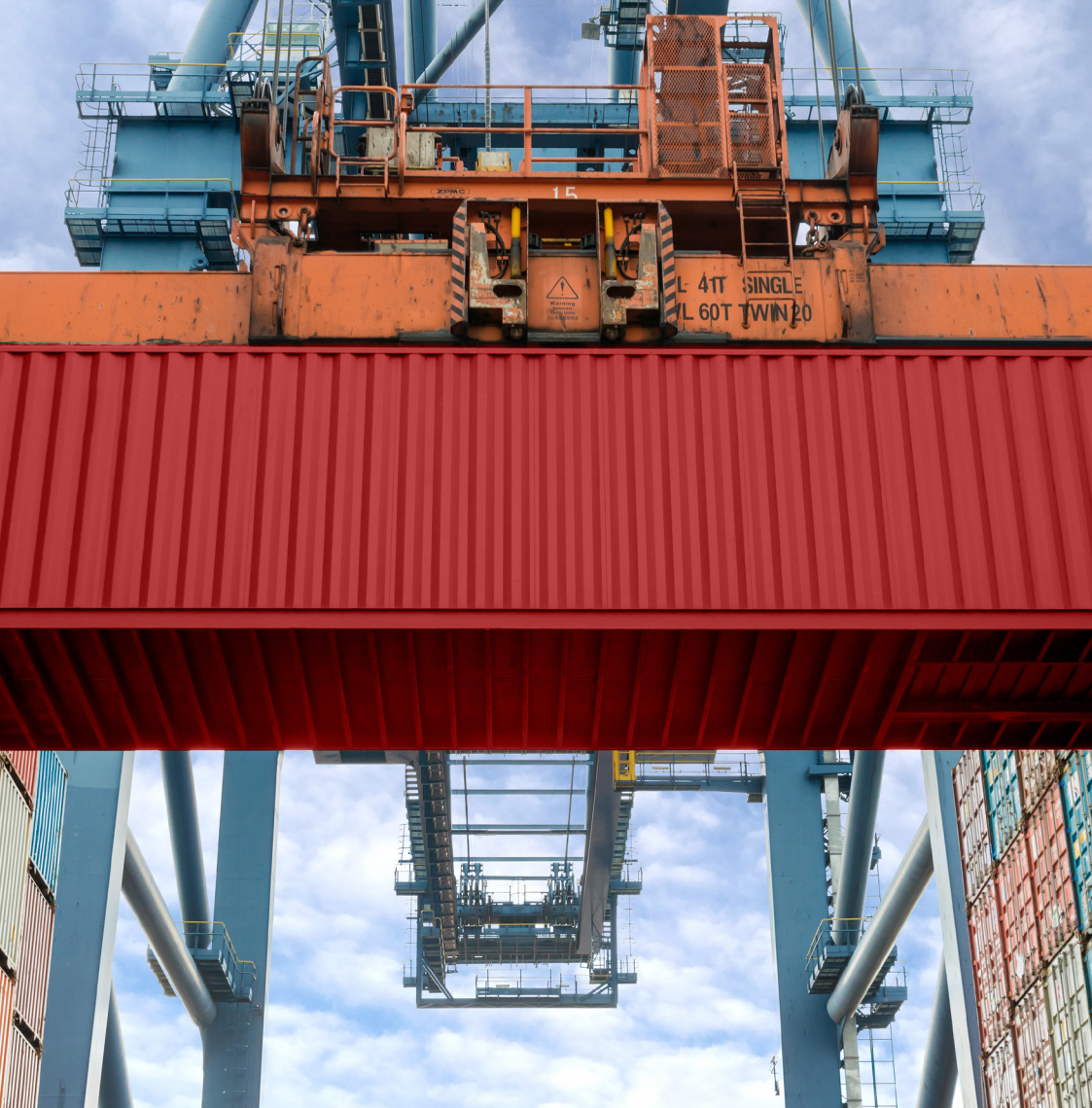
The bond aims to attract private investors who consider investing in Paris' sustainability to be a secondary advantage. In return for their contributions, they will receive a profit rate of 1.75% per year. 20% of the climate bond funds have been assigned to adaptation projects. Two projects with a climate adaptation objective have been included in the bond and are currently being implemented: planting 20,000 trees in the city and creating 30 hectares of new parks by 2020.

IUCN supports countries in implementing restoration programmes and landscape-level strategies, as part of the Bonn Challenge - a global effort to bring 150mn hectares of the world's deforested and degraded land into restoration by 2020, and 350mn hectares

by 2030. The Forest Landscape Restoration approach used to restore ecological integrity improves human well-being by increasing access to multifunctional landscapes. By 2020, it will create approximately \$84bn per year in net benefits, which could bring direct additional income opportunities, for rural communities. Additionally, achieving the 350mn hectare goal will generate an additional \$170bn per year in net benefits from watershed protection, improved crop yields and forest products. It could also sequester up to 1.7 gigatonnes of carbon dioxide annually.

In Europe, there is great potential for restoration of degraded land contributing to the Bonn Challenge. To date, only Scotland has committed a pledge. IUCN looks forward to working with the European Commission and EU member states to bring a considerable commitment to the table in 2020.

Nature-based solutions will feature prominently at the IUCN World Conservation Congress in June 2020, the largest and most inclusive nature conservation forum in the world. It sets priorities and drives conservation and sustainable development action. IUCN's network of more than 1,300 government, civil society and indigenous peoples' member organisations, as well as thousands of partners from around the world, will discuss and decide on actions that will inform humanity's relationship with its planet for decades to come. This ambition comes at a critical moment which calls for the formation of new alliances and partnerships that give nature the place it deserves in making the transition to a sustainable, zero carbon future.



PART 3

MARKET POWERS

THE SILVER BULLET?

Decoupling economic and energy growth in the EU: a red herring?

The prospects for decoupling economic growth and energy are ... limited, given that half of it is more virtual than real

Vincent Moreau, Scientist, Laboratory of Environmental and Urban Economics at the Ecole Polytechnique Fédérale de Lausanne

François Vuille, Director of the Energy at the Ecole Polytechnique Fédérale de Lausanne

A state of climate emergency has been declared at national and regional levels across the EU, signalling government intent to reduce carbon emissions, sooner rather than later. Achieving net zero emissions by 2050 is a significant challenge that will require bold structural changes to be made at the governmental level. At the individual level, a lifestyle compatible with 1.5 degrees of global warming will require reductions of up to 80% from current emissions per capita in the EU. This means fewer km travelled, denser living spaces and a dietary revolution.

At the European level, domestic emissions have declined over the past 15 years despite small

but continued growth in gross domestic product (GDP). A positive change in GDP (+1 % per year) with a negative change in emissions (– 2 % per year) points to the conclusion that the EU has decoupled emissions and economic output. The underlying causes of this decoupling must be understood to assess whether decarbonising economic activities in industry and services can be strengthened and sustained without the need to shift emissions abroad.

Energy consumption remains the largest contributor to carbon emissions due to the combustion of fossil fuels. Paradoxically, low-carbon energy production is relatively straightforward, given the alternatives that exist

for fossil fuels, such as wind, solar and biomass energy. Energy consumption, however, evolves under complex dynamics and its drivers must be evaluated and quantified carefully to better understand the real potential for decoupling. Fewer cars in our cities, for instance, can mean more planes in our skies or more products (goods and services) created as a result of energy intensive processes.

Firstly, economic growth has been highly correlated with energy use, meaning that all economic activities depend, to a great extent, on abundant energy sources. Secondly, considerable efficiency gains have been achieved since the 1970s, typically measured by declining energy intensity, as evidenced by the ratio of energy use over economic output. Thirdly, structural changes in the economy and service-oriented activities are examples of developments that have a significant impact on energy consumption. In particular, deindustrialisation and a growing share of services may lead to the substitution of imported products for domestic industrial activities.

Ultimately, these are three effects that have been generated over a period of time. As a result, they collectively provide a unique insight into the potential for decoupling energy, and therefore emissions, from economic growth in the long run.

In the EU, economic growth contributed to an average 2.2% increase in overall energy consumption per year from 1990 to 2000, and only 1.2% per year since 2000. Combining structural effects and measures taken to

improve energy efficiency resulted in an average decrease of 1.7% in energy consumption per year from 1990 to 2000 and a 1.6 % decrease per year thereafter, hence resulting in a small net negative rate in energy consumption since 2000. This shows that a change in economic growth has more of an impact on energy consumption than the implementation of efficiency measures. Moreover, this combined effect shows opposite dynamics between structure, such as deindustrialisation and energy efficiency.

Large structural changes occurred in the second half of the 1990s, when the EU15 experienced a phase of rapid deindustrialisation in conjunction with trade liberalisation. Of the various energy intensive activities in question, metal manufacturing outsources relatively well. Until the mid-2000s, these changes reduced energy consumption by almost 2% per year on average across all EU member states. In parallel, the energy embodied in imports, or the energy required in manufacturing imported products, peaked in 2008 when it comprised approximately 99% of the EU's primary energy consumption. In other words, economic activities abroad supply member states with an amount of energy equivalent to their own consumption, except when embodied in imports.

Changes in energy consumption are more significant across member states than they are at the EU level. This means trade in embodied energy is important among member states themselves. Indeed, deindustrialisation has been more prominent in northern Europe than

elsewhere, generating a simultaneous growth in services which has contributed to a small and lagged increase in energy consumption. At the same time, the greatest efficiency gains were achieved in eastern Europe when industrial activities underwent modernisation.

The relative homogeneity in energy consumption at the EU level reveals some disparities with consequences for any future potential efficiency gains. In southern Europe, a small rise in energy consumption from a larger share of services translates into higher energy intensity, unlike in the rest of Europe. The output of services generally exceeds that of industry – financial services as opposed to metal recycling for example – such that the energy intensity of services is generally lower than that of industry. The additional output, however, leads to more energy consumption.

This trend predicts more upcoming energy challenges and structural changes for the economy. In other words, the marginal energy savings from further deindustrialising economic activities in the EU will be increasingly thinner. Similarly, the low hanging fruits of energy efficiency, new motors and waste heat recovery, for example, have already been picked, making future savings less likely. This casts doubt on the potential of energy efficiency measures to deliver the deep energy and emissions cuts claimed by national and EU energy transition strategies. Also, once the potential for efficiency has been captured, any increase in economic activity will lead to an equivalent increase in energy consumption.

In conclusion, the cumulative reduction in energy consumption from a combination of outsourcing activities and efficiency gains since 1990 has been significant, resulting in approximately 40% less energy use, half of it due to deindustrialisation. The prospects for decoupling economic growth and energy are therefore limited, given that half of it is more virtual than real. Moreover, economic growth has almost entirely offset these savings by increasing energy consumption. Absolute reductions in energy use are unlikely to be achieved through energy efficiency measures alone, since they are capped by the laws of thermodynamics. Decoupling emissions, however, can rely on the decarbonisation of the energy system and carbon tariffs to reduce emissions embodied in trade. At the end of the day, the extent to which energy consumption can be reduced remains a critical question.



Carbon pricing: Changing financial flows for the energy transition

In the case of the EU alone, well managed policy interactions supported by the EU ETS could increase our 2030 reductions beyond a 50% reduction by 2030, as compared to the current 40% target

Suzana Carp, Head of EU Engagement at Sandbag

Climate change is a market failure that highlights the core flaw of economic theory. More specifically, it fails to appropriately price carbon at its true societal and environmental cost. The short-term profit/cost optimisation formulas still used in most investment plans seem irrational given that they continue to overlook the exponential growth of negative externalities.

The logic underpinning capital markets today is still one which prioritises self-preservation, as opposed to transformation. If we are to actually meet the Paris Agreement's ambitious goals, it is clear that we will need to rewrite the current economic model so that it supports a

swift, cost-effective energy transition. Carbon pricing is an essential tool to this end as it can speed up rapid emissions reductions, support innovation and enable sectoral and cross-sectorial transformation.

In fact, a combination of several forms of carbon pricing within the same jurisdiction, i.e. at both the regional and national levels, seems to work well and can be designed to support a wider portfolio of targeted transition policies. For example, the UK has been operating a national carbon price support system on the top of the EU-wide price set by the Emissions Trading System (EU ETS). This has allowed the country where the industrial revolution started to reduce

its coal-generated emissions by 80% emissions in just five years. It has also allowed them to undergo a whole coal-to-renewables transition in a little over a decade (without needing to rely on new gas).

While policy interactions do need to be managed to avoid offsetting each other, it is possible to accelerate emission cuts through enhanced interaction. Additionally, setting carbon pricing as the main catalyst generates revenues which can then be recycled. In the case of the EU alone, well managed policy interactions supported by the EU ETS could increase our 2030 reductions beyond a 50% reduction by 2030, as compared to the current 40% target.

In 2018 alone, we have concluded a revision of the EU ETS which has led to a rapid fourfold increase in the EU-wide carbon price in just one year. Sandbag was very active in trying to fix some of the core issues plaguing the scheme during the previous phases. The next phase now looks like new territory for carbon markets.

The price increase for allowances has had ripple-like beneficial effects in the direction of increasing revenue streams created specifically to support innovation and modernisation of the sectors covered. More specifically, with a fourfold increase per tonne of CO₂ equivalent emitted, we also have a quadrupling of the amount of money available for investment in industrial innovation or the modernisation of the wide range of energy system upgrades needed over the next 10 years. This was made possible through the creation of an Innovation

Fund and a new Modernisation Fund under the EU ETS. These funds are meant to support transformations that less well-off member states of the EU need.

In addition to this fund, a solidarity top-up was also introduced for these countries, as well as a Just Transition Fund intended to alleviate some of the social costs of these policy measures. However, the positive reception of this news is still lagging and there is a real risk that the importance of the funds made available for the next decade will be poorly managed in order to slow the transition, instead of accelerating it, despite having resources in place to cushion the impact.

Positive stories exist but the true cost of undoing more than four centuries worth of fossil fuel-powered growth is hardly something anyone can estimate. At the time of this contribution's publishing, we live in a world which has exceeded 415 Mpp CO₂ concentration in the atmosphere – the highest CO₂ concentration in the atmosphere in human history. (6) Given the scale, scope and exponential nature of this emergency, the number one priority has to be on the slowing down and, where possible, phasing out all together and swiftly transitioning from the largest emitting sources of CO₂.

Fossil fuels, industrial processes and exponentially rising aviation emissions are all concerns which need to be urgently prioritised. This is where carbon pricing can be a real game changer. Unfortunately, the political will to take swift action does not match the level of responsibility required. Each continues to be

protected either by the delaying of a scheme to address them or by free permits.

Carbon pricing is still perceived solely as a burden by some stakeholders. Heavy industry, to name but one, believes that such a price on emissions will expose them to trade competition from regions with lower carbon prices and might force them to relocate. At the same time, the funds mentioned previously are not available in other regions around the world and incentivises them to remain and take part in the transition inside the EU. Relocating is expensive in itself and does not remove the risk that carbon pricing schemes will emerge in their new locations within the next five years of the Paris Agreement timeline. We can expect this reality to come to fruition as the Agreement's Article 6 has paved the way for it.

The free allocation model used for industrial installations under the EU ETS created mixed incentives embedded in the scheme through the formula used to award the top 10% of performers and shield industry from the impact of the price. Sandbag supported a tiered approach, or a dynamic one, to free allocation, to better reflect the trade intensity of carbon intensity of products. However, the status quo of up to 100% allocations prevailed, despite the longer-term negative impact of this system. The tiered approach was endorsed by the European Parliament but, following heavy and concerted lobbying by heavy industries, the system went back to what it was during Phase III - one that does not incentivise innovation.

We also carried out a call for evidence accepting submissions from industrial actors covered by the carbon market only to find out that this incentive has also worked to deter ground-breaking solutions to come to the market in the EU. (8) This would have 'upset' the balance of allowances that the majority of installations were planning on receiving into their accounts. Product substitution was a disincentive, for example in the steel and cement sectors, and low-carbon solutions were placed at a competitive disadvantage.

In previous studies, it was discovered that some industries have been gaming the rules of the EU ETS to secure windfall profits. This continues to be a challenge for the EU ETS and will be so for the next decade. Incentives aimed at aiding industrial efforts to decarbonise in a cost-effective manner will have to come from outside of this mechanism through additional policies.

The type of lobbying which overlooks our current climate crisis is the key stumbling block in moving the conversation closer to a focus on the innovations that need our financial support. It also ultimately contributes to increasing the cost of the energy transition. We have yet to unleash the power of markets in supporting the transition but we still rely on the markets to lower the costs of low carbon technologies. Clearly, we can't solve a problem with the same mindset that created it and carbon pricing instruments will have to be used swiftly, creatively, in tandem and as effectively as possible.

Systemic transition through smart resource management

“Extraction and processing of natural resources causes 90% of global land-use related biodiversity loss and water stress, and more than 50% of global climate change impacts”

Janez Potocnik, Co-Chair of the International Resource Panel and Partner at SYSTEMIQ
Julia Okatz, Associate at SYSTEMIQ

Completing the ecological transition – and accelerating more ambitious action - is the only option for maintaining human wellbeing. Continuing with the historical model of consumption and production we currently live in would far overshoot the planet's capability to host humanity.

Without fundamental change, the costs of dealing with global heating, extreme weather events and the consequences of biodiversity loss will soon become very difficult to sustain. For example, according to the 'Co-designing the Assessment of Climate Change Costs' (COACCH) project, the costs of coastal flooding in Europe alone could rise to €631bn per year

by the 2080s and climate change could lead to a 20% mean food price rise, globally, by 2050.

Averting this damage needs to be seen as an investment in human wellbeing and the foundation of a stable future-proof economy. It is an investment – much rather than a cost – with much synergy potential for more just and happier societies. This undertaking can only be achieved through concerted and committed mid- and long-term measures.

Having said that, of course we can strive to minimise costs in this endeavour and make our investment strategies both more effective and cost-efficient. One possibility is to avoid

trade-offs between different ecological goals such as climate change and air pollution, or between ecological and social goals, like climate mitigation and quality employment.

The keyword has to be ‘systemic’. There must be a systematic transition that is less fixated on being ‘less bad’ and more focused on strategically investing in a new model of integrated prosperity. Such a model would need to effectively marshal natural, social and financial capital.

The next question often is – and should be: What does ‘systemic’ mean for decision-

makers in terms of planning, monitoring and investing? Additionally, can we make those parameters more concrete?

The International Resource Panel (IRP) suggests ‘sustainable resource management’ as the core of a systemic approach. Natural resource extraction, trading and use is a common denominator in 12 out of 17 SDGs. It is the key driver of the most pressing environmental impact challenges humanity is facing today, chief amongst them climate change, biodiversity loss and air pollution. Although many global governance and science bodies have been addressing the listed impacts for decades, their



underlying drivers and pressures have not yet been targeted systematically.

The Global Resource Outlook 2019, published by the IRP, reveals that the extraction and processing of natural resources causes 90% of global land-use related biodiversity loss and water stress, and more than 50% of global climate change impacts. About 20% of greenhouse gas (GHG) emissions are caused by the extraction and processing of metals and non-metallic minerals alone.

The use of resources globally has more than tripled in the last 50 years. Resource use per capita has almost doubled, showing that not only population growth but economic growth has been driving increased consumption. This trend became particularly pronounced as resource productivity started to decline around 2000 and has stagnated in recent years due to a structural production shift from more to less resource-efficient countries.

These findings tell us that shifting production and consumption of natural resources could be significantly impactful. It is currently an underrated instrument for the reduction of environmental risks.

This is apparent when one examines decarbonisation. We know that, to have a chance at limiting global heating to 1.5°C, our total CO₂ emissions need to reach net-zero by mid-century. The latest special report by the Intergovernmental Panel on Climate Change (IPCC) shows that industry is the largest emitter

of GHG and needs to reduce its emissions by 75-90% below 2010 levels by 2050.

Material production – specifically of steel, non-ferrous metals, chemicals, non-metallic minerals – plays a central role in this challenge. These processes are particularly energy and emissions intensive and tricky to decarbonise through solutions such as electrification, demand management, circularity and energy efficiency.

Additionally, supplying a rapidly growing total global electricity demand stirred on by population growth, income growth and enhanced electrification inherently demands more resources. Solar panels and wind parks will need significant amounts of metals and construction minerals and will require large areas of land and sea surface.

The production of materials for energy provision will likely produce CO₂ and particulate matter, affect biodiversity systems and increase competition for land use. Opinions diverge on the level of scarcity of some of the specific metals. Shifting to renewable energy technology is highly beneficial (traditional energy production has much larger externalities) and must be rapidly scaled, but this cannot be the only solution pursued.

Clearly, we need to urgently innovate on existing decarbonisation strategies that are more effective, affordable and produce synergies with other environmental and public health goals. These strategies must go beyond the usual focus on the supply side of the economy.

We need a systems-shift in production and consumption that reduces the need for energy-intensive production in the first place, while maintaining, or increasing, the quality of vital services, such as housing.

Materials management is a powerful – and potentially the key – tool in systemic decarbonisation efforts. This is because materials extraction and processing are particularly emissions-intense and produce additional challenges, such as air pollution.

For example, the Energy Transitions Commission calculated that decarbonising heavy industry and heavy-duty transport by mid-century can cost less than 0.5% of the global GDP. Demand management, meaning the smart intensification of use and looping of products and materials, plays a key role in this transition as it is capable of reducing 40% of emissions in these sectors and 45% of the costs.

The natural resource lens is not only a mitigation tool focused on becoming ‘less bad’ or ‘less costly’. It is a powerful approach to guiding systemic innovation for a new type of economic prosperity that overcomes our dependency on natural resource consumption – which is of particular importance for import-dependent regions like Europe.

Smart resource usage in decoupled business models is a huge untapped field for innovation. It can have positive effects on economic development and wellbeing. IRP modelling sees an increase of 8% over a historical

trends scenario in the global economy until 2060 through resource efficiency and climate-, land- and behaviour-related measures.

Fully embracing the decoupling transition by employing it as the general innovation principle across sectors could deliver far greater benefits. The circular economy is a powerful concept in this transition and needs to be regarded as a cross-sectoral instrument by EU decision-makers.

Decoupling prosperity from resource use and environmental impacts must become our economic paradigm. It is essential to secure a safe future for humans and should become an explicit ingredient in climate and industrial policies.



RECOMMENDATIONS

TOWARDS A RENEWED SOCIAL CONTRACT

ISSUE

The Yellow Vest and Extinction Rebellion movements have shown that the divide between policymakers and citizens is more pronounced than ever. Civil society is waking up to a future dominated by climate change and financial uncertainty. The ecological transition demands that countries shift away from fossil fuels – and do so fast. However, it will require additional effort to carry out this transition in a way that avoids leaving coal-dependent workers and regions behind.

Inequalities are rampant in the world of energy: although the poor contribute least to air pollution, they often live in the places that are most impacted by it. They also spend a larger proportion of their budget on energy, pushing them into energy poverty. The European Union faces the challenge of defusing a situation in which the purchasing power of citizens is pitted against corporate interests. To succeed, accountability and transparency will be of the essence. As such, transformation should be built around the European Commission's call for a 'just transition', through supporting those affected by changing energy policies.

ACTION

As demonstrated in coal and carbon intensive regions across Europe, reopening a dialogue with the citizens who feel left behind is the first step towards a just transition. Building on

what has already been achieved with regard to the establishment of regional dialogues in certain countries, EU member states should be inspired to follow suit. However, the voice of citizens is also missing from the European institutions themselves. Engaging in direct dialogue with citizens will help policymakers burst the 'Brussels Bubble' and see the direct impact of their work. Companies, too, need to take up a proactive role in their transition by finding ways to engage with unions and relocate workers to other aspects of their operations. The European Council and European Commission should adopt a social contract which identifies the roles and expectations of the public, private, civil society sectors and citizens – a social contract that addresses the issue of sustainability, target-setting, ambition and commitment to action. It is important to empower citizens as entrepreneurs to facilitate experimentation and innovation to unleash ideas that take a bottom-up approach to solution-making, thereby having an impact on both behaviour and consumption.

OPPORTUNITY

Given that the 2019 European elections had the highest voter turnout in 20 years, it is clear that European citizens still want to partake in the European Union. At the same time, they are demanding more direct dialogue with their European representatives. The new EU mandate presents a unique opportunity to establish a different relationship with its citizens while keeping a finger on the pulse of what goes on in citizens' lives. For that to happen, relations between the institutions and citizens need to

become more balanced: if citizens can engage more directly with policymakers, accountability and transparency will improve.

Having built upon dialogues recently initiated with civil society, including think tanks, the EU Council has an opportunity to take the lead on the ecological issues that are raised and bring them to the attention of national leaders to steer change. Young people – who will inevitably be most impacted by climate change – should become more involved in the decision-making process. We don't necessarily need more Working Groups on Youth – we need more Working Groups with youths.

ENVISION PROGRESS DIFFERENTLY: A NEW SYSTEM APPROACH

ISSUE

The urgency of the ecological situation requires collective action from all stakeholders. The European Parliament has the democratic authority to represent citizens and can thus legitimately defend and support their views. The path of change required cannot be relegated to 'next management's problem'. Timing is limited: the next 2 to 3 years will be crucial. Most of the investment and policy decisions that shape the next 11 years will be undertaken during this time period. Consequently, both the economy and society are in need of major transformation.

For a paradigm shift to take place, a number of developments are required: trade-offs should be focused on emission cuts, collective action should not be dismissed as 'problematic' and change should be actively enforced by key leaders in the field. The cost of climate change should not be considered an externality for individuals or politicians. Rather, the benefits of climate change reduction efforts should be more clearly articulated. It is crucial that Europe understands how our dependency on fossil fuels can tangentially increase our economic and environmental vulnerability. Europe must learn how to envision progress differently while simultaneously controlling risks.

ACTION

To create the future we want as Europeans, it will be necessary to foster innovation and scale investments in technologies centred around the energy transition. Disruptive technologies and broad digital platforms should serve as springboards for further development. Investment in top-down infrastructures such as smart grid, energy storage and telecom will be a prerequisite for success in the energy transition.

Envisioning progress differently will mean the participation of citizens as not only users, but as co-creators in the development of new energy models. Crowdfunding and impact investment should be incorporated into innovative financing techniques, thus enabling low-income households to benefit from energy savings, from which they are excluded today.

A strengthened approach to sustainability may be achieved through the creation of a

European label for sustainability – one that reflects the growing number of socially-minded and environmentally-driven companies that comply with science-based targets. These companies set the pace for others to follow and provide citizens with more room for making the right choices. An industrial strategy that encapsulates values relating to climate neutrality and the circular economy is urgently needed – a strategy in which investments are made, fiscal incentives developed, partnerships and alliances strengthened, standards for low-carbon products reviewed and industrial clusters reinforced.

OPPORTUNITY

A new political cycle is about to be triggered. The policy choices made by the new EU mandate will impact the next 10 years or more. As a result, MEPs must seize this opportunity to stimulate a constructive debate about a new vision for a net zero emissions economy in Europe, where prosperity and sustainability go hand in hand.

There is an opportunity to transform the way we measure progress, not only with GDP, but through looking at environmental sustainability, resource efficiency and social equity. The EU can create a systemic approach that recognises the value of protecting our natural environment and sees how preservation of the natural world can stimulate economic growth.

The European Parliament therefore has an opportunity to harness the emotions and commitments of stakeholders and citizens to deliver on a more sustainable Europe. Bold climate action can create significant economic

opportunities. There is huge potential for economic growth, the production of millions of jobs and the avoidance of thousands of premature deaths as a result of climate change.

WISER INVESTMENTS DRIVE REFORMS

ISSUE

Climate change is a market failure that gets to the core flaw of economic theory. More specifically, the failure to appropriately price externalities at their true societal and environmental costs represents a key issue. Short-term profit and cost optimisation aligned with a short-term political mandate implies that investments and policies are often perceived as irrational in light of the growth generated by negative externalities. The logic underpinning capital markets and transition policies today is still one that prioritises self-preservation over the ecological transformation.

While positive stories exist, the true cost of undoing centuries worth of fossil-powered growth is hardly something that anyone can accurately estimate. National central banks are calling for more mainstreamed climate change planning and greater collaboration within the financial sector. Unfortunately, the political will to take swift action towards an ecological transformation that benefits the economy, the natural environment and society does not match the level of responsibility required. Reforms for change and ways to unlock climate-proof investments continue to be overlooked.

ACTION

The new European Parliament has a responsibility to drive reforms to ensure that the strategic vision of the European Commission is aligned with today's climate and energy challenges. It must ensure that governments spend their revenues in a way that complements the European Commission's recommendations of the soon-to-be-presented final National Climate and Energy Plans, in addition to their commitment to uphold the terms of the Paris Agreement. Through availing of the guidelines on corporate climate-related information reporting, set out as part of the Sustainable Finance Action Plan, companies will be enabled to report more effectively on the impact that their activities have on the climate, thus steering investments in the right direction.

A number of positive developments have already been taken, such as the establishment of a classification system for environmentally-sustainable economic activities (taxonomy), which provides practical guidance on how best to support activities that contribute to achieving a climate neutral economy. There has also been the welcome publication of a report on the EU Green Bond Standard which recommends clear and comparable criteria for issuing green bonds and the release of a report on EU climate benchmarks and 'environmental, social and governance' (ESG) disclosures to enable investors to orient their choices of investments around the principle of climate consciousness.

Policymakers, industrial actors and investors are now equipped with the right tools to drive investments towards a low-carbon future. In continuing this trend, all subsidies and lending

given by the European Investment Bank (EIB) and other financial institutions to finance high carbon and fossil fuel projects should be reviewed for consistency with immediate action towards the 2050 goal. Furthermore, a tax on carbon intensive products at the EU level should be revisited to achieve a just transition in the aim to ensure that the re-distribution of revenues is fair across and within member states.

OPPORTUNITY

Europe is at the forefront of the battle for climate change, seeing itself as a leader in meeting the agreed upon emissions targets. Turning this ambition into reality is undeniably a daunting prospect, but it is one that provides an incredible opportunity for renewal and prosperity in the 21st century.

The European Parliament has the opportunity to push various reforms to accelerate the complete shift of investments towards sustainable finance and to co-design financial incentives for future investments to be climate-proofed. The EU has the possibility to drive an ecological transformation by reforming financial structures that can facilitate a just transition to climate neutrality. It should build on bold and joint initiatives from governments to rewrite the current economic model.

Europe also has the potential to unleash the power of markets in supporting the transition towards an ecological transformation. Markets have already helped to lower the costs of low-carbon technologies, and mechanisms such as public procurements and auctions for the deployment of renewables and green bonds.

Investments for the restoration of natural capital have proven successful in creating momentum for accelerating capital flows towards low-carbon projects. Fine-tuning these and providing the right incentives to investors can be beneficial to Europe's sustainable prosperity in the short to long-term.

The future EU budget for climate must also play a role in filling the investment gaps. EU leaders, ahead of the EU budget adoption, must therefore dedicate time to better coordinate their positions and drive the ecological transition.

MINIMISE RISK - FINETUNE TRANSITION PLANS

ISSUE

The ecological and financial costs of unabated climate change will be cataclysmic for the economy, the environment and society as a whole. The EU needs to pursue a just transition, whereby maintaining the purchasing power of citizens is on an equal footing with the ecological transition. Ambitious climate action can bring an enormous boost to the global economy between now and 2030. In contrast, hitting 3°C instead of 2°C would incur an extra global cost of 5-10% of GDP, not to mention 1.5°C.

Our societies are at a crossroads – either we continue investing in fossil fuels and risk losing trillions of euros in stranded assets by 2030, or we choose to transform our systems completely. As stakeholders are starting to ask for more sustainable products and with extreme weather events becoming ever more intense

and frequent, companies are starting to look into the financial risks of climate change and to diversify their investment strategies. However, contributing to de-risking the economy in the face of the ecological transition should become a common effort for everyone.

ACTION

Better understanding the financial impact of climate change and developing robust long-term plans to transition will be crucial for companies and governments that want to remain competitive in the 21st century. The European Parliament should implement a Standing Committee on the European Transition. An Energy Transition Support Service should also be created to support the development of national plans for member states and ensure that legislations and regulations are put in place and can help minimise risk.

Additionally, to encourage innovative experimentation, a sizeable budget from the future Horizon Europe should be allocated for the development of 'transition super labs', in which companies and entrepreneurs could play a key role with researchers, public administration and civil society actors to co-design systemic innovations for a fully carbon neutral Europe.

Finally, it will be crucial to develop a European carbon budget consistent with the science to achieve climate neutrality by 2050. Establishing an EU Intergovernmental Panel on Climate Change (EU IPCC) comprised of scientists regularly reporting to the Council of Ministers with uncontested hard data can be useful to drive EU policy towards this objective.

OPPORTUNITY

If the Paris Agreement is to be respected, every actor will have to play their part. The European Union has the opportunity to take the lead by making economic de-risking a priority in its 2050 Long-Term Strategy. It can also urge member states to fine-tune their National Energy and Climate Plans and incorporate diversification strategies as an integral part.

Leading by example also means that the European Central Bank and the European Investment bank will need to eliminate each and every link with fossil fuels, among which fossil fuel subsidies are the most notorious culprits. The next G7 taking place in France must see its leaders claiming to put an end to fossil fuel subsidies, putting an end to coal and enabling more risk-taking in the development of new breakthrough technologies.

Likewise, the private sector has a lot to gain – even financially – from better understanding the financial and non-financial risks of climate change. Taking the lead on fossil fuel divestment and adapting to climate change early on brings only benefits. Addressing the climate breakdown must be seen as an investment, not as a cost, offering great returns and allowing society to avoid dire consequences.

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