

ESSAY COLLECTION

# Fuelling the future

## Prosperity and security in the net zero age



**CONSERVATIVE  
ENVIRONMENT  
NETWORK**

# CONSERVATIVE ENVIRONMENT NETWORK

**CEN is the independent forum for conservatives in the UK and around the world who support net zero, nature restoration, and resource security.**

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# Contents

- 5** *William Hague*  
**Foreword**
- 
- 8** *Oleksii Goncharenko*  
**Clean energy for a free world**
- 
- 13** *Andrew McLachlan*  
**A conservative path to net zero**
- 
- 20** *Virginia Crosbie*  
**Securing a green legacy for the UK**
- 
- 27** *Dave Bryant*  
**A just transition to a brighter future**
- 
- 34** *Liam Kerr*  
**Investing in Scotland's future**
- 
- 40** *Damian Müller*  
**Empowering technological progress:  
Switzerland's path to net zero**
- 
- 46** *Gabriel Quadri*  
**The centre-right way is  
the greener way**
- 
- 52** *Thomas Heilmann*  
**Putting aside climate despondency**
- 
- 58** *Marco Antonio Sulantay*  
**A constitution for people,  
planet and prosperity**
- 
- 66** *Nikolai Astrup*  
**The future is electric**
- 







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*William Hague*

## Foreword

The science is clear: greenhouse gas emissions from human activity have driven climate change, and the threats posed by average temperature rises of even 1.5 degrees are severe and must be averted. To deny the need for action is to accept the most dire consequences for our planet.

But the fight against climate change is still not universally embraced by conservatives across the world. While many centre-right politicians are leading on tackling this threat, others doubt the seriousness of its consequences, and more are sceptical of the bold action required to stop

it. This is not only a politically untenable position but a rejection of one of the greatest economic opportunities of the 21st century.

Reducing emissions is no longer just about the environment but a route to economic growth, prosperity and resilience. Those on the centre-right who are vocal champions of the move away from fossil fuels and lead their nation's transition will reap the political reward and shape their country's future. Failing to act decisively would be a grave mistake. History will not reward dither or delay.

Coal fuelled the industrial revolution, bringing about unprecedented advances for human prosperity. The subsequent exploitation of oil and gas expanded access to energy and generated further wealth, including here in the UK. But the world has changed, and our future prosperity depends on using alternative sources of energy. Most major economies and many more large businesses have recognised this and begun the transition away from fossil fuels and towards net zero out of concern for their economic self-interest as well as for the sake of the environment.

The introduction of measures like the USA's Inflation Reduction Act and its massive support for clean technologies will accelerate the change and leave those nations which cling to fossil fuels trailing in their wake. China threatens to dominate global supply chains in industries like electric vehicles and solar power. And the invasion of Ukraine means that Europe has realised, belatedly, the dire consequences of its dependence on coal, oil and gas from Russia.

The future belongs to countries rich in solar, wind, and critical minerals that are the fastest to exploit their natural advantages. All countries must, sensibly but quickly, transition to cleaner forms of energy and leave the fossil fuel age behind us, delivering on our commitments to phase down unabated oil and gas, as agreed for coal at COP26. Securing this global agreement should be the call to action

for conservatives concerned about climate change and the malign influence of petrostates.

The core of our approach must remain a willingness to deal with the challenges of the day and to avoid a stubborn adherence to ideology at any cost. While reaching net zero will require a level of state intervention that some on the right will find uncomfortable, acting swiftly now will prevent the need for far greater intervention in the future if temperatures rise unchecked.

Applying the central principles of conservatism - free markets, free trade and individual responsibility - will be vital if we are to make a success of the switch to clean energy globally. For the sake of our own political survival and that of our way of life, we cannot vacate the battlefield of ideas to the left on this crucial issue. We have to win the argument for an energy transition that harnesses the capital and resources of private enterprise and grows our economy. The global effort to tackle climate change will not succeed without conservatives leading the way.

That is why I am delighted to welcome this collection of essays by centre-right legislators from around the world. They each put forward ambitious but practical solutions to drive forward the transition away from fossil fuels and show this is a change that we must embrace rather than fear.



Oleksii Goncharenko is a People's Deputy of Ukraine, representing European Solidarity

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*Oleksii Goncharenko*

## Clean energy for a free world

Over the past year, we have been saying that the war in Ukraine has shown who is who: this devastating situation has exposed lies, silence and selfish interests. People have now finally opened their eyes to what is happening in energy.

After 2014, when Russia violated international law, sanctions were imposed. But even in Europe, they did not want to give up the comfortable life they had acquired thanks to Russian coal, oil and gas.

After 2014, when Russia's war against Ukraine began, Putin was building Nord Stream 2, and Germany refused to stop construction against the wishes of many Eastern European states. Only a full-scale invasion on 24th February 2022 and the death of thousands of Ukrainians could stop the construction. As Putin kills Ukrainian women and children, Russian gas is contaminated with their blood. Buying fossil fuels is funding his war machine.

This war has shown that energy independence is a necessity; indeed, it is the national security of any country. And now green energy will play an important role.

When we talk about clean energy, we don't only mean energy with no carbon emissions. Clean energy is also energy from clean countries with a clean regime. Today, Russia is breaking all laws and regulations by using energy as a weapon. Who will be next?

The free world cannot be dependent on its enemies for its energy. Of course, you can cooperate with a country where the law reigns, where human rights are respected, and all norms are observed. But being dependent on countries ruled by a tyrant is always a bad idea. This is a trap. Are we ready to sacrifice freedom for energy dependence? I think not.

Dictatorships and authoritarian regimes do not think about the environment. Only democratic, free countries, where they respect the law and respect people, care about this issue.

Look at what the dictator Putin is doing now. He has started a war in a free country, seized Europe's largest nuclear power plant at Zaporizhzhya, and blackmailed the whole world with a nuclear disaster. In addition to having nuclear weapons and the ability to blackmail with nuclear missiles, he further seized energy facilities to use for his criminal purposes. Nuclear power plants should work for the benefit of people, help industry, help develop the country - but in

the hands of a tyrant they turn into a dirty tool of blackmail. In the hands of a tyrant, a necessary thing becomes a potential threat.

Or let's look at the Kakhovka hydroelectric power station. This is a water-powered generator that does not emit carbon into the atmosphere. But Putin captured it and blew it up, flooding the towns downstream. And once again such a necessary and useful source of energy turned into a real threat.

Let's go further. Putin is now ordering missiles to be fired at energy infrastructure. This is not just blackmail; it's terrorism. That is, he uses an attack on energy facilities as a tool of war against civilians.

Therefore, we can conclude that authoritarian, despotic, tyrannical regimes should not be able to establish control over energy supplies and pipelines. Otherwise, with the threat of blackmail, free countries will not be able to exist.

We must explain to all people in all countries that it is better to have one harsh winter than to be constantly blackmailed by a tyrant. Should we have anything in common with people who are willing to say they will send missiles if we give up gas? It looks more like madness than politics. This is definitely not democracy; this is terrorism. If we allow unfree countries to dictate their terms, the whole world will be engulfed in chaos.

Are climate issues important? Very. Is it necessary to engage in climate policy? Yes. But in order to engage, it is necessary to have a world order where countries with democratic regimes have the largest share in the global economy, have the most powerful militaries, and have the most powerful intellectual sphere. First must come the economy and military power, then the climate. And only in this order.

How many dictatorial, authoritarian, or undemocratic regimes are taking care of the climate? What serious climate protection programmes are there in Russia or China? Are they trying to extract

oil more ecologically in Iran? It sounds like a joke. Because we all know that these regimes are not interested in preserving the land, but in preserving their power. And when we say that we need a climate agenda, that our mission is to save the earth, it is true. But on this earth we live together. Ukraine, UK, Germany, China, or Russia, we are all on the same globe, where it is impossible to make the climatic conditions in Germany better than in China. If Germany stops CO2 emissions and China doesn't, this will not change anything.

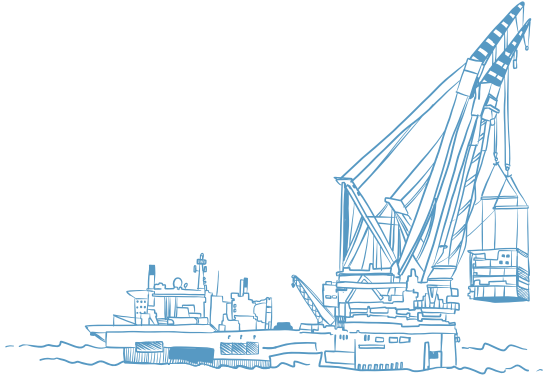
Ukraine will win this war, and then our country will have to rebuild. When wars end, nations must rebuild what worked before and reform what didn't. In Ukraine we will not only have to rebuild our infrastructure, our schools, hospitals and homes, but also the economic relationships that led us here. Just as our allies are doing now, we will have to rebuild our own energy system to be resilient and independent. This will mean building renewables and nuclear power back up and diversifying our energy sources so that a single attack cannot turn the lights off. These low carbon energy sources dispersed across the country will make it harder to attack our energy while bringing people cheaper and cleaner energy. We cannot allow our country to be run on energy that could again be manipulated by a hostile country.

We will also need to rebuild our economic system. As Russia's armies have retreated, they have burned fields and destroyed businesses in order to inflict as much destruction as possible. Many people have been displaced and rebuilding their livelihoods will be a huge challenge. We cannot do this on our own. Providing support for Ukraine to build, and to build back greener and more resilient, will send a clear message about the solidarity of nations within Europe and the path that Ukraine has chosen. It will also show a clear commitment to our shared values of freedom and democracy. A stronger Ukraine will lead to a stronger Europe and ultimately a stronger free world.

The fight for the climate is a fight for the world order. Whoever controls the world economically, politically, and militarily can impose their agenda on this world. And if it is us, the free world, then we can talk about the climate and we can really achieve change. If it is China or Russia, then I will disappoint you: neither the climate, nor human rights, nor freedom of speech, nor any of our important and very necessary issues will be dealt with, but the opposite will happen.

The fight for climate change begins with the fight for world order. Only then can we save the Earth. Only by being strong can we achieve change. There is no other way.





Andrew McLachlan is a Senator of Australia, representing the Liberal Party

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*Andrew McLachlan*

## A conservative path to net zero

Our journey as a people towards achieving a net zero carbon future means being prepared to overcome great challenges not only technological but also cultural.

As conservatives we need to remind ourselves that many of our conservative thinkers of the past were mindful of the need to have a respectful relationship with our environment. Concern for the environment should no longer be viewed as heresy and a restraint on growth.

With this in mind, we must endeavour to embark on the challenging task of transitioning our economy, while retaining the best of capitalism.

Our need for a roadmap that we can communicate to the electorate was made very clear following the result of the 2022 Australian federal election. Our campaign did not focus on our achievements in protecting the environment nor did it communicate any passion for the same. In certain inner-city seats, this was one of the issues that aggravated the electors.

To be fair the Liberal-National Government did move slowly in the right direction on climate change, but there is more work to do to convince electors we are committed. The commitment to a 2050 net zero target was a commendable stride toward climate action, aligning us with global partners.

Although this was an important step forward, we were not bold enough in advocating for our associated policy solutions nor defending our considerable achievements.

The commitment to the target was perceived by the electors as a reluctant and maybe even hesitant adoption of international norms. Consequently, they did not reward us for it at the polling booth. Despite our achievements in reducing emissions, pioneering residential rooftop solar installations, and advancing of recycling technologies, the electors sensed that our heart was not really into finding solutions to combat climate change.

By contrast Labor are far more comfortable speaking on environmental matters and establishing their credentials in the public discourse. Now that Labor have formed a government, they are seeking to achieve our targets by increased government intervention because of their distrust of the markets. Their initiatives have the

potential to have adverse effects on the economy and ultimately fail to achieve any real reductions in our nationwide emissions.

Conservatives in Australia find themselves at a pivotal juncture. Only a conservative viewpoint can ensure that the path chosen to achieve a net zero future is the correct one and doesn't burden future generations. We cannot leave the left of the political spectrum to impose their foolish approaches on our communities.

We risk remaining in opposition until our resolve to tackle the effects of climate change is perceived as real. We must develop policies that promote economic prosperity and employment opportunities in conjunction and because of environmental stewardship.

As the Opposition, we must offer a sensible and tangible alternative path for the Australian people. We should not seek to deny the prevailing reality or to argue against the pursuit of net zero. Instead, we must leverage our reputation for practicality and effective problem solving. We must inspire confidence that our emission reduction journey is not only realistic but does not impose an unfair burden on those struggling in our communities.

The Labor Government has announced a 43% emissions reduction target by 2030. This is greater than what Liberal-National Government took to the election.

Regrettably, the current Government lacks a credible roadmap capable of realising such a drastic reduction within seven years. The Labor Government's own statistics from last year's climate change statement highlight their impending failure to meet this target.

It is our responsibility to outline a distinct vision for a net zero Australia—one characterised by robust employment opportunities and strong economic growth.

The potential for decarbonisation is maximised when we harness market forces and incentivise businesses to develop low-carbon technologies. Our market has already embarked on this path, encouraged by opportunities locally and especially internationally. Investors have been buoyed by achievements such as record rooftop solar installations, support for clean energy start-ups and collaborative efforts with industry players to facilitate the gradual phase-out of coal-based energy.

This is not to suggest that there is no role for government other than certain policy setting and legislating the rules of the market. It is a long held conservative view that markets are not perfect and can fail. Government intervention will be needed to create and support nascent industries. Rather than debate whether climate change is real, conservatives should be debating the level of government intervention and the best way to cease the same. It is always easy to spend money. It is so much harder to stop spending it in a modern democracy dominated by social media.

Nowhere is the imperative for a roadmap so clear than in the Australian energy sector, which continues to account for a substantial portion of Australia's emissions.

While Australia was one of the world's foremost liquefied natural gas (LNG) exporters in 2021, the subsequent surge in gas costs due to global supply disruptions has underscored our vulnerability. A nation with abundant gas reserves found itself grappling with shortages and potentially leaving Australians unable to afford heating during winter months. This vulnerability, accentuated by the global nature of the gas market, demands a renewed emphasis on energy sovereignty.

Diversifying our energy portfolio and reducing dependence on gas and fossil fuels has now become an imperative. At the same time, we must be mindful that our LNG exports are assisting other countries

to reduce their emissions until new technologies become available to replace the need to exploit fossil fuels.

Reducing dependence fossil fuels requires efforts to minimise gas usage for heating, which triples during winter compared to summer. Not all initiatives need to be complex. For example, it is important to seek to improve home insulation and encourage the purchase of energy efficient appliances. Policy-setting to encourage price signals will optimise energy usage and discourage waste.

The reduced role of coal in the energy landscape mandates a pivot toward renewable energy, buttressed by proven technologies such as pumped hydro, geothermal and nuclear power. It was the former Coalition Government that created an environment which enabled investment in renewables to dramatically grow. This resulted in around \$35 billion in investment since 2017 with renewables accounting for 30% of our electricity production in 2021. Labor should seek to build on our favourable investment environment for clean energy by keeping and expanding our policy that committed \$20 billion to develop and deploy low emissions technologies.

Effectively managing the transition away from fossil fuels, which currently sustains over 110,000 jobs in Australia, is key. This workforce, often concentrated in regional areas, must be supported through reskilling and retraining programs ensuring that they are not abandoned through the transition. To be fair, the Labor Government has announced the establishment of the Net Zero Authority to focus on the challenge of ensuring the workers, industries and communities that have powered Australia for generations can seize the opportunities of Australia's net zero transformation. It remains to be seen if the allocation of funds to this new agency is spent effectively.

The development of large-scale green hydrogen production has the potential to revolutionise our industrial landscape, making energy-intensive sectors like steel and aluminium production far more

sustainable. This not only insulates our industries from the volatility of fossil fuel markets but aligns with our allies' net zero targets, which will inevitably reduce demand for traditional fossil fuel exports.

The former Coalition Government's National Hydrogen Strategy, anchored by the Hydrogen Industrial Hubs Program, illustrated its commitment to cultivating hydrogen production and its integration into industrial processes. The strategy's goal was to get the price of green hydrogen down to an economically viable level through technological advancements. This initiative had the potential to position Australia at the forefront of hydrogen technology, fostering a transition toward cleaner energy sources.

Australia also has the potential to harness its substantial uranium reserves to facilitate the use of small modular reactors and complement the ongoing deployment of renewable energy projects. Following the ongoing decommissioning of coal power stations, the prospects for integrating small modular reactors into our energy mix underpin, and enable us to accelerate, our net zero aspirations.

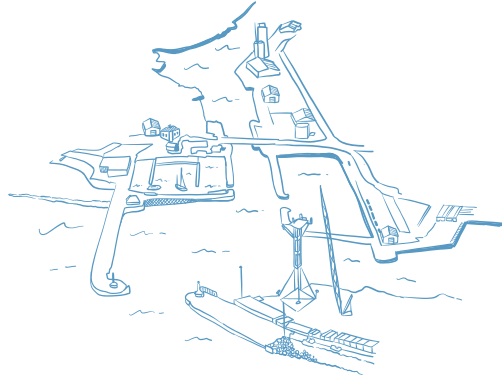
This strategic pivot not only aligns with a commitment to achieving net zero emissions but also offers a robust solution to bolstering energy security and diversifying risk in the evolving global energy landscape.

Relying on a sensible mix of nuclear, renewables and conventional energy forms will reduce our vulnerability to supply disruptions and price shocks, as well as geopolitical tensions that can impact the availability of fossil fuels. By combining our offshore wind potential, pumped hydro, hydrogen capabilities, scientific expertise, and mineral wealth, Australia can not only lead the world but assist our friends to meet their own targets.

Conservatives in Australia need to lift their eyes from petty debates about climate and manifest some aspiration for their country.

## FUELLING THE FUTURE

We are a trading nation and integrated in a global economy. At the same time pollution and disease does not respect borders. There is so much opportunity for Australia to be a truly decarbonised economy that supports just and thriving communities everywhere on our planet.



Virginia Crosbie is a Member of Parliament of the United Kingdom, representing the Conservative Party

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*Virginia Crosbie*

## Securing a green legacy for the UK

The global race to net zero is well and truly on. The UK faces a pressing need to make our energy supply affordable and secure again, and it is for this reason that we must hasten the transition to a low-carbon economy and energy system. The past year and a half have proven to us that fossil fuels offer volatility and insecurity while transitioning to clean energy will bring sustainability in every sense of the word. Oil, gas, and coal are on their way out, and low-carbon energy has well and truly arrived.



I am incredibly proud that it is a Conservative government which has taken up the mantle in tackling some of the greatest challenges we have faced in decades. In the four years since I was elected to represent my constituents on Ynys Môn - the island of Anglesey in Wales - it is the Conservatives that have demonstrated global leadership by rolling out vaccines to fight Covid-19, delivering on our legally enshrined 2050 net zero target, and by spearheading the response of the democratic world to Russian aggression in Ukraine. The latter two are intimately connected; without our hard work and investment in scaling up renewables, it would have been that much harder to wean our European neighbours off Russian gas.

As conservatives, we have a moral obligation not to squander our natural inheritance and to leave the world in a better state than we found it for future generations. Conservatism also means pragmatism - dealing with the world as it is, not as we want it to be. A pragmatic approach means facing up to the basic fact that the age of fossil fuel dominance is over, and we are entering a new era of low-carbon energy.

The weaponisation of oil and gas markets against democracies has certainly catalysed the transition away from fossil fuels. BP is projecting that global oil demand has already peaked and will soon start to decline, echoed by the International Energy Agency's assertions that natural gas is now following suit.<sup>1</sup> Although Europe is also diversifying its gas supply in favour of American, Qatari, and Australian liquefied natural gas, little doubt now remains as to which way the wind is blowing. Debates about future oil and gas licensing miss the key point: clean energy is now cheaper and more secure. As we scale up nuclear and renewables, oil and gas will inevitably decline.

However, we must remember that the original reason that the UK led the way on low carbon energy was to tackle climate change. It still looms large as a serious threat to our economy and security.

The Office for Budget Responsibility has stated that the cost of remaining reliant on gas and failing to reach net zero would hit taxpayer and government finances twice as hard as hitting net zero.<sup>2</sup>

It would be folly to risk betting the house on adaptation alone when we can make our strategy much more effective by pairing it with investment in cleaner and more efficient technologies to mitigate climate change. We should not downplay the role that fossil fuels have played as building blocks in the UK's history, but times have changed. Gas is no longer the economic mainstay it once was; if we do not now fully embrace the energy transition, we run the very real risk of being left in the dust by other advanced economies who do so. We should not risk gambling our future by continuing to depend so heavily on fossil fuels when we have such a natural advantage in generating low-carbon energy.

Wales, where my constituency of Anglesey lies, was once hailed as a coal superpower: it powered the Industrial Revolution and fuelled the Royal Navy. Coal has rightly nearly been phased out of our economy due to its especially negative impact on the climate. But we should now seize our opportunity to contribute to the UK's economic growth and security by providing clean, cheap, low-carbon energy.

On Ynys Môn - once called the 'Mother of Wales' and now known as 'Energy Island' - thanks to tireless campaigning by myself and my constituents, we have projects in the pipeline spanning tidal, solar, offshore wind, battery storage, and nuclear to boot. This is to say nothing of the Celtic Sea, down the coast from Anglesey, with its enormous potential to harness the power of Atlantic winds with floating offshore turbines. Whereas the North Sea is home of the world's largest offshore wind farms, hosting an abundance of vast caverns in which we can sequester carbon, and a prime destination for investment into clean hydrogen.

The government has a stellar record in promoting low-carbon energy through policy and fiscal support. The introduction of Contracts for Difference in 2014 has overseen a doubling of offshore wind capacity.<sup>3</sup> This scheme will save the taxpayer an estimated £10.5 billion by 2027.<sup>4</sup> The recent launch of Great British Nuclear and the additional £157 million<sup>5</sup> of funding was welcome news to all those who believe nuclear represents a fantastic opportunity for economic growth and energy security, not least myself and my constituents. Ynys Môn is home to the Wylfa nuclear power station, which is crying out to be repowered. The jobs and growth this would bring to Anglesey would ensure it is able to live up to its proud history of supplying low-carbon, reliable power to the UK.

The government must build on this strong record and put in place further policies to unleash private capital to drive the energy transition forward. The scale of the US Inflation Reduction Act and the EU's Net Zero Industries Act means that the UK cannot go toe-to-toe in a subsidy war. Instead, we should focus relentlessly on supply side reform to make the UK a more attractive place to invest, making the most of our abundant natural resources.

It would be remiss not to make the most of our brilliantly skilled workforce in the energy sector. In the UK, oil and gas firms have played host to a wealth of talented workers over the decades, and it is imperative that the transition does not pull the rug out from under their feet. But to tie their expertise to a declining sector would risk wasting this valuable human resource. Ninety percent<sup>6</sup> of those who work in the oil and gas sector are well-positioned to transfer their skills to industries such as offshore wind, meaning we can avoid reinventing the wheel when it comes to training and upskilling. Offshore wind represents a golden opportunity to do so. The UK has some of the windiest seas in Europe, making it a world-class location to deploy clean, homegrown, renewable power. A favoured sector for oil and gas professionals who leave their field, offshore wind now has

the potential to produce more energy than North Sea oil and gas for a fraction of the price.<sup>7</sup>

This is to say nothing of Anglesey's long-running advantage when it comes to the UK's nuclear skillset. At the Wylfa power station, workers built up a wealth of knowledge begging to be put to good use in the UK's nuclear renaissance. We must not waste the time and money that has been invested into developing these skills over decades by giving them an outlet with new nuclear at the former power station site.

At the start of 2023, the Prime Minister set out five objectives for the government: halve inflation, grow the economy, bring down debt, slash NHS waiting times, and tackle illegal migration in the English Channel. The government should view the need to transition away from oil and gas as an opportunity to achieve at least three, if not more, of these goals. Bringing cheaper sources of renewable energy online faster, moving away from the marginal gas pricing model in our electricity markets, and insulating homes will cut energy bills and reduce inflation.

To make attracting this investment as easy as possible, the Treasury should use tax incentives and fiscal policy to make low-carbon energy more lucrative for investors. The government's new full expensing policy, by which firms can deduct 100% of their investment costs from their corporation tax bill, will help make clean energy cheaper. But the tax break is set to end in three years' time, causing many companies to hesitate before investing. Planning and approval processes take several years, and making full expensing permanent would give businesses some long-term certainty and make the UK more welcoming to green investment.

Ofgem's current remit in the Electricity Act 1989 prevents investment in the grid ahead of demand in order to keep short-term costs down. But this risks an inefficient transition which would

result in higher bills in the medium to long term. The Department for Energy Security and Net Zero (DESNZ) has taken the welcome step to update Ofgem's statutory advice to allow more anticipatory investment and include net zero in its remit. Ofgem now needs to change its approach accordingly - this is particularly important for investment in transmission infrastructure to get power from the wind turbines to people's homes and businesses.

However, there are still other planning and regulatory barriers that stand in the way of upgrading our national grid and moving our energy system away from fossil fuels. The Energy System Operator (ESO) has brought forward sensible measures to reduce problems with the grid connection queue, which is seeing some of Anglesey's projects having to wait until the 2030s to connect.<sup>8</sup> However, there is only so much the ESO can do; DESNZ must produce a new planning policy statement and boost funding for the planning bodies that deal with requests. This will help us to both electrify faster and reduce our dependence on fossil fuels.

This period will go down as a turning point in the history of energy due to the Russian invasion of Ukraine, and the government should make sure it puts the UK firmly on track to regaining our energy sovereignty. Relying on dwindling reserves and increasing imports of oil and gas will fail to restore our energy security. This is a transition, and security will remain the priority to keep our homes, businesses, hospitals, and schools running. Only by transitioning to clean energy can we do so affordably and sustainably into the future.

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*Dave Bryant*

## A just transition to a brighter future

South Africa is currently in the midst of a crippling energy crisis. Our country, once seen as a model for the production and provision of energy in the developing world, has been subject to intermittent electricity blackouts for the past 14 years under the governing African National Congress (ANC). The severity of these blackouts has been increasing steadily, and 2022 has been the worst year so far with 2023 projected to be even worse.<sup>1</sup> The blackouts are the direct result of a lack of proactive maintenance from the national government and rampant

mismanagement of the main state owned energy provider, Eskom. This has been compounded by fraud, direct sabotage and ongoing budgetary constraints. Quite apart from the serious threat posed by climate change, our creaking energy system shows that there is no long term security from fossil fuels.

Over recent months, South Africa has seen protests against the government's poor handling of the crisis, with thousands of people taking to the streets to make their voices heard. Many predict that the manifold problems at Eskom simply cannot be fixed, and more and more South Africans who can afford to are starting to go "off the grid" by installing their own personal solar PV and inverter systems.

This escalating crisis is taking place at the same time that South Africa, in collaboration with the International Partners Group (IPG), comprising the United States and European countries, is aiming to implement the ambitious Just Energy Transition Plan (JETP).<sup>2</sup> The plan, agreed to at COP26 in Glasgow, aims to shift South Africa's energy production away from coal and towards renewable energy in a way that empowers more South Africans and does not lead to severe job losses. The plan is accompanied by an investment strategy, the Just Energy Transition Investment Plan.

The JETP aims to channel around US\$8.5 billion in grants and concessional finance over five years to accelerate the retirement of old coal plants, the deployment of renewable energy, repurposing of derelict mine sites, and increased support for green hydrogen and low-carbon transport technologies. The US\$8.5 billion is made up of a US\$329.7 million grant (3.9%), US\$5.325 billion concessional loan (63.0%), US\$1.5 billion commercial loan (17.7%) and US\$1.3 billion in guarantees (15.4%).<sup>3</sup> It remains to be seen, however, whether the ANC government will be able to make effective use of these funds, as the governing party has become notorious for its involvement in dodgy tenders and corrupt government spending.



South Africa is seen by many as a test case for the just transition, and it is clear that donor countries will be watching our progress closely to see whether we are able to roll out the JETP. This is not just about coal. Many countries rely much more extensively than South Africa does on oil and gas, but - if it is shown to work effectively - the JETP model could just as easily be used in the future to support the transition of economies away from other fossil fuels too.

It must be emphasised that the success of the plan rests on the ability to generate the requisite finances. This means that there are serious risks should wealthy donor countries renege on their financial commitments. The prevailing international challenges being exacerbated by the Russian invasion of Ukraine have already shown that some donor countries may be forced to scale back on commitments if they face another similar crisis or a further escalation.

It is estimated that prior to the invasion of Ukraine, European countries imported roughly 45% of their coal from Russia and now instead source mainly from Colombia, Australia, the United States and South Africa.<sup>4</sup> Coal imports from South Africa rose by eight times in the past two years alone. Though this makes sense in the short term, it should not be seen as a reason to slow our wider transition from coal. As the world moves away from coal powered energy, it will not make sense for South Africa to be investing in new coal plants as this would only lead to stranded assets later down the line.

South Africa is blessed with enormous renewable energy potential, particularly solar and wind. Our country's 24-hour global solar radiation average is 220 watts per square metre, more than double the average for countries in Europe.<sup>5</sup> Apart from the obvious benefits for domestic electricity generation, the opportunities for other low-carbon industries such as green hydrogen and green steel are immense. South Africa is in a unique position, possessing the scientific and technological knowhow, as well as the abundant renewable

resources, to turn the current energy crisis around. We will not achieve this simply by propping up old coal-based energy infrastructure. South Africa's national government must work flat out to leverage our own competitive advantages. In the coming years, international investors will be increasingly dissuaded from investing in fossil fuel-intensive industries and we must leapfrog our competitors to ensure that we are not left behind.

Currently, over 70% of South Africa's energy generation comes from coal and our mines produce an average of 224 million tons of it per year.<sup>6</sup> We are the fifth-largest coal producer in the world and many large towns have mushroomed around coal mines, where people rely directly and indirectly on the coal industry for their livelihoods. We must ensure that a transition towards renewables is focused on creating more job opportunities for all South Africans and that no-one is unfairly prejudiced during the transition. In other words, the lofty goals of the JETP must be balanced with the realities on the ground.

The decommissioning of coal plants can unfortunately lead to significant unemployment and it is estimated that the decommissioning of the Komati coal plant has already led to the loss of over 2000 jobs. This is very significant in a country like South Africa which already has an unemployment rate of close to 35%. Investing aggressively in new green technologies could assist in providing many more thousands of jobs that would augment our domestic capacity while simultaneously driving the green transition. The immediate challenge is that without reliable electricity generation economic growth will be further hampered and without this even more jobs will be lost. Central to effectively implementing the JETP will be convincing the public that the transition will create jobs and grow the economy and not the other way round.

Key to the success of the JETP is the need to open up opportunities for the private sector. The government should be doing everything it can to cut red tape and give the private sector the freedom it needs to build and develop these new industries and create much-needed jobs. The days of absolute government control over the energy market are long gone. We have to look at new and innovative ways to generate electricity and increase our existing limited grid capacity in areas of high potential renewables generation, such as the Northern Cape. At present, areas of the Northern Cape generate considerably more energy than they are able to feed into the grid.

The City of Cape Town, run by the Democratic Alliance (DA), was recently recognised by the Carbon Disclosure Project as one of only two cities in Africa that have shown climate leadership. This has been achieved largely by recognising and embracing the value of the private sector and investing and maintaining existing energy infrastructure. Cape Town generates additional energy from a large hydro-electric plant and this reduces the impact of blackouts on residents of the city. These initiatives (coupled with the crumbling municipal infrastructure in ANC-controlled parts of the country) have led to a marked rise in “semigration” by middle class South Africans from other cities to Cape Town.

Central to Cape Town’s focus for many years has been empowering independent power producers (IPPs) by pushing to allow them to generate electricity in order to help augment Cape Town’s energy resources. Pressure from the DA has also led directly to accelerated action from the national government to open up the space for IPPs. Cape Town recently announced a plan that will allow residents and business owners to sell excess renewable energy that they generate back to the municipality. This has the dual benefit of increasing energy capacity and helping to fund the installation of private renewable infrastructure.

The DA leadership in the City of Cape Town aims to completely protect the city from the threat of national energy collapse by drastically increasing private renewable generation.

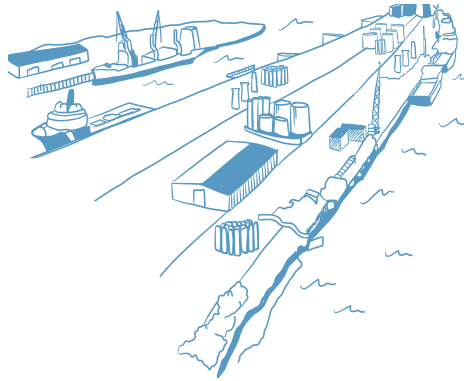
As the ANC continues to collapse in on itself and the country moves towards a likely coalition government in 2024, it is going to be essential that the focus on implementing the JETP is not lost. Along with this, the government must take urgent steps to empower, and possibly even compel, local municipalities to cut red tape as much as possible and allow the private sector to lead the way. The DA submitted the Integrated Electricity Management Operator (IEMO) bill or the Cheaper Energy Bill which set out further concrete steps towards a greener electricity future. This bill, which was deemed as “undesirable” by the Parliamentary energy committee in 2020, would have driven the cost of electricity down, introduced competition into the energy sector, and most importantly diversified the country’s energy sources to introduce more renewables. Along with allowing residents and businesses across the country to sell the electricity they generate back into the grid, we propose to offer a R75,000 tax rebate to cover the cost of installing solar systems in homes.<sup>7</sup> We would also ease requirements for generation below 100 megawatts in order to bring smaller IPPs online quicker.

Any attempt to convince South Africans of the need to urgently transition away from coal-based energy must clearly and emphatically demonstrate the opportunities for job creation. In South Africa, this should be combined with the simultaneous goal of ending blackouts by diversifying and increasing energy production. If this does not happen soon, we run the very real risk of being left behind and instead set on the path towards a failed state.

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*Liam Kerr*

## Investing in Scotland's future

Living in Aberdeen and representing the people of the North East Region in the Scottish Parliament provides a unique insight into the energy debate and its relation to climate change and the cost-of-living crisis. More so than any other part of the UK, the energy capital of Europe has deep-rooted links to the oil and gas industry.

Here, if you don't work in North Sea oil and gas, someone in your family or a close friend will. Oil and gas aren't just what keeps the lights on and the boiler running –

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they are what keeps tens of thousands of people employed and they underpin a significant proportion of the social and economic make-up of this area.

When the price of oil began to collapse in 2015, it was communities in and around Aberdeen which felt it like nowhere else. People suddenly lost what had been well-paid, specialist, and highly skilled jobs. Careers came grinding to a halt, and there was nothing obvious to transition to. Mortgages couldn't be paid, cars had to be sold, and people were forced to move away. In some cases, families fell apart and entire communities were put under immense strain.

The consequences went further. People didn't have the money to spend in shops, pubs and restaurants, so many of them closed too. It was a stark reminder about this industry's importance to the very fabric of this corner of the UK. Lessons should have been learned to ensure – once the recovery took place – that we would never be here again. So while people all across the UK are understandably worried about energy prices and the wellbeing of the planet, in this part of the world we see it particularly acutely.

Which leads us to the most pressing of questions: how does the UK transition to an energy generation and supply policy that reduces pollution and helps meet the wider aspiration of net zero emissions by 2050 and 2045 here in Scotland? And do so while ensuring security of supply for all homes and businesses, keeping prices down, and protecting the tens of thousands of jobs currently reliant on North Sea oil and gas?

The SNP-Green Scottish Government simply doesn't have the answers. They would look to close down the sector almost overnight and have failed to back the industry and new prospects.

As we've learned from Putin's invasion of Ukraine, when large chunks of the gas market suddenly become cut off, the supply

dwindles and the price rockets. By turning off our own taps, as the current Scottish Government wants to do, we'd simply become dependent on imports of oil and gas – because demand for energy is not going away. We'd be swapping North Sea oil for more fracked gas coming in from the US.

But we know imported gas generates a carbon footprint between two and three times bigger than if we used our own, so where is the environmental sense in that? Relying on foreign countries for gas is a mistake and, as recent events have shown us, receiving it from rogue and unpredictable states is both foolish and immoral.

Of course, the SNP wasn't always an enemy of the North Sea. Indeed, in the course of attempting to persuade the people of Scotland to vote for independence in 2014, the Yes campaign led by Alex Salmond and Nicola Sturgeon suggested an entire economic case could be built on the sector's back. We could be like the Saudi Arabia of the north, apparently.

For its part, the Better Together campaign welcomed the healthy contribution oil made to the economies of Scotland and the UK. But it also warned, repeatedly, that it was a volatile commodity, and that only the strength of the whole UK could adequately protect us from the shock any downturn in price brought. We only had to wait a few months after the resounding No vote in the referendum to see this prediction in action.

In Aberdeen, the impact of climate change can be seen too. In the recent winter storms which ripped through the UK, it was rural communities in Aberdeenshire who were among the worst hit, while flooding has repeatedly plagued many towns and villages in this area. It serves as a stark reminder about just how important a balance is to all of this. Climate change doesn't respect borders, after all. Rising global temperatures show us that some kind of urgent action is required. People don't want to lose their jobs because of sudden



government policy shifts, and they don't want to lose their roof amid gale-force winds.

Fortunately, as we transition towards net zero, Scotland's energy sector has a bright future. That transition can be a success if Holyrood and Westminster work together. Renewable sources are all well and good, but they're not the only solution. Onshore wind farms can make a valuable contribution to the grid, but many parts of the country feel like the impact they have on scenery, wildlife and tourism – not to mention general quality of day-to-day life – is too significant. We've also seen that, when the wind doesn't blow, they simply do not pack enough punch, which is why we urgently need to scale up energy storage solutions, UK-wide transmission networks, and technologies such as nuclear. Communities need to have more input into local energy infrastructure development, and should be rewarded with local price reductions.

Economically, while gas provided an abundance of jobs, prosperity and opportunities, the wind energy industry has yet to mature to the same extent. The developing revolution in offshore wind technology is encouraging, and it's welcome that both the Scottish and UK Governments are working together to make the technology work for everyone, alongside the UK's Contracts for Difference scheme which makes the whole thing possible (and which a separate Scotland couldn't even begin to replicate). We'll need more of that in future if Britain is to make the best of this, and seize the many opportunities that await.

It won't just be the government driving this diversification of energy supply either. Already, companies like BP and Shell have detailed their own investment plans to decarbonise and clean up the sector as they know there is a future in the North Sea. Indeed TotalEnergies and SSE backed Seagreen offshore wind farm.

Academics are getting involved too, and that's a welcome sign as we will need the success of industry and the brains of academia to have the most effective strategies in place. As is so often the case, one of the best things we politicians can do is to create the frameworks for investment, and then get out of their way.

It's essential that base supply is there to underpin our energy needs and so we cannot forget nuclear power. Nuclear, which once again, despite Britain, Germany and even Japan now backing it, and even the EU recently labelling it as "green", the SNP-Green coalition blindly refuses to consider. We have a proud history of nuclear in Scotland and this is something we should continue to lead in.

The current ideology of the Scottish Government is incompatible with a smooth transition. Energy companies and communities need certainty, which isn't provided by a government that seems to change its mind on the legitimacy of whole industries on apparently little evidence, or worse, will disregard evidence that disagrees with its ideology.

The Scottish Government's point blank refusal to develop small nuclear flies in the face of an excellent safety record and the recent endorsements from respected global leaders in the field. Olga Algayerova, executive secretary of the UN's Economic Commission for Europe said: "Nuclear power is an important source of low-carbon electricity and heat that can contribute to attaining carbon neutrality and hence help to mitigate climate change."

Various political parties need to drop their dogmatic opposition to the technology and get on with supporting the variety of ways it can help us keep the lights on and keep the emissions down. Open minds will be crucial in the years ahead, from finding imaginative ways to cut energy use (such as improved insulation of homes) to improving public transport infrastructure to encourage people to travel in greener ways without adding hassle and inconvenience to their day.

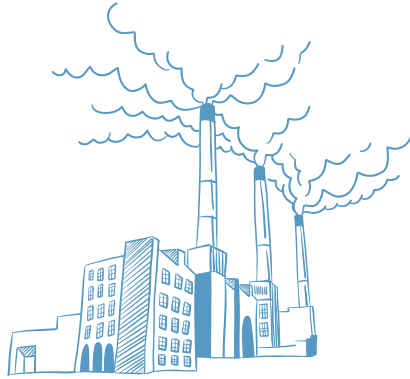
As part of the United Kingdom, Scotland is poised to lead on this with CCUS, floating offshore wind and hydrogen investment all coming from the UK Government.

But it's open minds in Scotland's corridors of power that are badly lacking. The SNP and the Greens haven't stopped to think about the impact branding oil and gas as "dirty" and "finished" has now and in the future. Instead we need to paint this as an opportunity for young people, whether it be through innovation in decommissioning, energy storage or in renewable generation.

A just transition cannot happen without these people getting on board and lending their minds to the fight. It used to be the case that generations of families would be employed in the oil industry. It was not unusual to find three generations of the same family working for the same company, all at different stages of their careers, bringing different ranges of expertise and experience with them.

Now, in part thanks to the gloomy trajectories laid out by the Scottish Government, parents are telling their children to pursue alternative careers. That will be as harmful to the cause of ensuring safe, sustainable supply and a responsible, sustainable shift away from fossil fuels as anything. Instead of demonising the workforce, education, infrastructure and community we have developed around the North Sea over the past 60 years, we should be utilising it for clean energy. Careers in renewables and 'green jobs' should be encouraged in the education system, alongside funding to support oil and gas workers seeking to retrain. This is the jobs-first approach to the energy transition that Scotland needs.

It is the best reminder yet that the expertise found within the energy sector may be one of the most valuable tools in our efforts to make the just transition work for everyone. It is vital that the Scottish government does not leave the North East behind.



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*Damian Müller*

## Empowering technological progress: Switzerland's path to net zero

Switzerland is in a comparatively comfortable situation regarding the energy transition. 61.5% of our electricity is produced from hydropower, 28.9% from nuclear power, 1.9% from fossil fuels and just under 7.7% from new renewables. But it is clear that the share of renewable energy sources must continue to increase as we transition away from oil and gas.

Fossil fuels will become less important in the future - also for Switzerland as a trading centre. Many players in the oil and gas industry operate their trading centres in Switzerland. The largest companies in our country are Trafigura, Vitol, Gunvor, and Mercuria. According to Bilanz, they occupy seven of the ten places in the top ten of the largest Swiss companies with their billion-dollar sales. Bloomberg reported the three largest Russian oil producers Rosneft, Lukoil, and Gazprom have already begun exploratory talks for moving trading activities in the Gulf region following the EU sanctions against Russia. Our country is likely to lose some of this business - but with it, probably also its reputation for putting business before morals.

Banks and financial institutions, for which Switzerland acts as a global hub, will be crucial for the global transition away from oil and gas towards renewable energy and other net zero industries. The sector is strongly self-regulating, with institutions constantly updating their investment strategies. The global economy is still largely fuelled by oil and gas for now, but a new net zero age is dawning: Switzerland's world-leading financial services will provide the necessary capital and expertise for investment in clean technologies and industries.

Within Switzerland itself, technological innovation opens up many opportunities for decarbonisation and electricity supply. We need to push ahead with the expansion of renewable energies - especially solar and wind power - as quickly as possible, in response to possible electricity shortages due to Russia's invasion of Ukraine. Our parliament is working on a law to speed up the lengthy approval procedures for such plants. Long-term financial incentives are needed for project developers to increase investment security. Competitive auctions for long-term power purchase agreements for solar and wind power, as successfully implemented in numerous European countries, are a step in the right direction.

Gas-fired combined-cycle power plants will only be an emergency instrument that can be switched on and off when there is a shortage of electricity at peak times. Meanwhile, although it is important that we keep an open mind on technology, I am personally unconvinced that new nuclear power plants - with the currently known technologies - are a solution either. They would arrive too late and be too expensive for the power shortage that is now looming. If the risks known today and the problem of final storage can be solved, and the high costs reduced, then new nuclear power plants could have a chance again. The existing Swiss nuclear power plants may be operated in Switzerland as long as they are safe, but they must not be replaced after they are shut down. In the meantime, we should greatly expand renewable energies to prevent an electricity shortfall.

Switzerland's current prosperity is not a product of chance, but a consequence of a far-sighted economic policy that promotes technological progress. One example is the massive expansion of the railroads in the 19th century and the completion of what was then the world's longest railroad tunnel through the Alps, the Gotthard Tunnel, in 1882. This technological transformation, supported by parliament and led by the liberal politician and industrialist Alfred Escher, led to a significant competitive advantage for the Swiss economy at the time. The cost of transporting goods fell as demand for Swiss engineering skills increased abroad, and many industrial companies settled in Switzerland. Due to the large amounts of credit needed, numerous banks also established themselves and laid the foundation for today's Swiss financial centre.

In the 20th century, Switzerland then made the next technological transformation with the construction of numerous dams and hydroelectric power plants to secure its electricity supply. Thanks to this strategy, Switzerland decoupled its electricity supply from coal within a few decades, which brought huge economic benefits.

The decarbonisation of the Swiss economy is the next technological transformation that can become another economic success story. In my view, the prerequisites are:

- **Market-based policies:** the electricity market must be fully opened up to competition so that consumers can choose their electricity provider and an electricity agreement must be concluded with the EU.
- **Security and sustainability:** Switzerland's energy supply security should be strengthened without increasing CO2 emissions. The goal is not complete self-sufficiency for Switzerland, but a clear definition of the necessary domestic electricity production capacities in the sense of a strategic reserve.
- **Insulation:** Switzerland's building stock is responsible for about 45% of final energy consumption. A higher renovation rate is needed. The tax deductibility of renovation costs must be increased. In parliament, we have passed resolutions to this effect.

To convince people of the need for these measures, they must be economically and socially acceptable. We have to inform and empower people to make sustainable decisions. As a liberal, I also advocate that everyone pays for what he or she consumes.

We should also deregulate: what we regulated for a decade ago may not be right today. Deregulation doesn't mean blindly trusting the market, believing that the strongest should prevail. Deregulation means starting where the burden of regulation is particularly great. It is also important that it should guide consumer demand.

I would like to do this with liberal approaches such as education, research, and innovation. State intervention is always only the second or even third best solution compared to sensible, self-responsible action. For a liberal party, incentive mechanisms are a core element of effective climate policy. We must not leave the field to the utopians.

Finally, we should only impose bans as a last resort. Of course, setting a good example is not enough in all cases. Sometimes internationally binding benchmarks are needed. This was the case, for example, with ozone-depleting chlorofluorocarbons. It was necessary to enforce an international ban on this climate-damaging gas. But it should not be the first lever to pull in every situation. Instead, we need to promote new technologies and innovations by creating the right framework conditions. We are at the forefront of research and developing: a great deal of work is being done at the Federal Institutes of Technology in Zurich and Lausanne. Innovation projects play an important role in driving technological progress.

We have to be pragmatic in all these steps. In June 2021, the Swiss electorate narrowly rejected the revision of the CO<sub>2</sub> Act, which says greenhouse gas emissions must be reduced to half of the 1990 level by 2030, at the ballot box, despite the fact that the law was very liberal and did not include any strict bans. But it would have made gasoline more expensive if the target values had not been achieved. A carbon tax on airline tickets was also planned. We would have channelled just under half of the additional revenue into the new climate fund so that targeted investments could be made, with the remaining portion would have been returned to citizens. In the follow-up surveys of voters, citizens' wallets were a key factor for rejection.

This autumn, the government sent its "Plan B" for the CO<sub>2</sub> law to parliament. The new law foregoes incentive taxes and instead introduces billions in subsidies for transport and buildings.



Subsidies are known to be much more popular than taxes and bans because it is often unclear who has to bear how much of the cost of a subsidy and when. To make the existing carbon tax on heating oil and gas, currently CHF 120 per ton of carbon, more attractive, one could pay the full amount back to households by means of a per capita amount. Many households that already live sustainably would then save more money.

Unfortunately, most people are not aware that a large part of the carbon tax is already being redistributed via a reduction in health insurance premiums, which calls into question the effectiveness of this instrument. In a survey conducted in late 2019, only 12% knew about it. Instead, we could consider reimbursing the carbon levy directly via a monthly bank transfer so that awareness increases to help people make more sustainable choices. A political instrument is only good if it is understood by those affected.

With the revision of the CO<sub>2</sub> Act, we in Switzerland are also taking an important step for the 2025-2030 period: key objectives are the halving of greenhouse gas emissions, a CO<sub>2</sub> guideline values for new cars, the promotion of e-charging infrastructure and an admixture quota for CO<sub>2</sub>-neutral kerosene in aviation.

For me, it's clear that we need to set the right priorities and work together above party lines. Particularly in environmental policy, it's not easy to always find a completely liberal position; compromise is sometimes needed. For me, it's about developing the best ideas in fair and civilised ways. I am confident that we will master the challenges for implementing effective climate policy together.



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*Gabriel Quadri*

## The centre-right way is the greener way

There are two requirements for a centre-right vision of the net zero transition. The first is liberal principles: the market economy, representative democracy, rule of law, limited but effective and efficient government, the quest for progress, equal opportunities for all, adequate provision of public goods, and respect for property rights, among others. The second is the specific goals and policies needed to keep the Earth, its geochemical process and its ecosystems within working and sustainable parameters or thresholds,

and to promote the energy transition, alongside competitiveness, security, and affordability of energy.

It is possible and necessary to find a path to net zero within these parameters. Under the Paris Agreement, each country finds the path for its own inventory of emissions with precise sectoral policies for decarbonisation. In most cases, countries' emissions principally come from electricity and heat generation, road transport, heavy industry, oil and gas, agriculture or deforestation, in line with the nation's stage of development, geography, demography, economic structure, and past technological and policy choices. In Mexico, transport is the biggest source of emissions, followed (in order of importance) by electricity generation, oil and gas industry, heavy industries (cement, steel, petrochemicals), deforestation, agriculture, and waste management.

Cutting our greenhouse gases will benefit everyone, but it will require some government coordination. This can be done within the boundaries of liberal principles, which advise respect for property rights, legal certainty and the rule of law, an anti-corruption atmosphere, democratic control, markets whenever possible and government intervention only as necessary. Democracy introduces limits to government activism and to climate and energy transition policies: it cannot move faster than public opinion allows, so governments must choose and implement policies and policy instruments that are broadly acceptable.

From a centre-right perspective, government interventions for energy transition should be respectful of democratic processes and institutions. We persuade rather than dictate, and prefer market instruments and incentives over regulation. Property rights must be respected and losses or economic impacts on vulnerable societal groups should be compensated.

Broad alliances between government, the private sector and non-governmental organisations are required, with consumption patterns reoriented through persuasion and education rather than imposition.

Government expenses that imperil fiscal balance must be avoided to not crowd out more efficient private investment. Research and technological development with joint ventures between the private sector, universities, and government are pivotal. Sensible, light-touch regulation may be necessary when there are no other efficient ways or means to achieve crucial climate and energy transition goals. Competitiveness, economic growth, and employment should remain a priority, alongside free trade in cleaner goods and services.

In every policy choice there are winners and losers; the latter would always try to exert a veto, unless an acceptable compensation is applied. Culture, institutions, preferences, consumption patterns, distributive effects, and political conditions determine at the end what is feasible. It is true that politicians tend not to risk the next election by going against them, but it is likewise true that politicians are able to broaden possibilities by means of leadership, education, persuasion, trust, and confidence building. It is a heuristic approach that must be followed in all democratic societies in regard to climate change and energy transition policies: society and political actors determine initial feasibility conditions, then, politicians can work over them to develop new policy opportunities.

In Mexico, a liberally-oriented government made profound constitutional, institutional and legal reforms to the energy sector between 2013 and 2014, aligned with these centre-right principles. The changes opened up our energy sector to competition and investment and established new markets in clean energy certificates. Energy sellers were obliged to buy electricity by means of auctions, in which clean energy was the winner with historically low prices (below 20 USD per megawatt hour).

Generators and distributors were opened up to private investment, and while the natural monopoly of the grid and market operators were kept in state hands, they are now watched by an independent energy regulatory body and are supposed to compete with private firms on a level playing field. No extra compensation for the poor was needed in these liberal reforms given that clean energy and auctions allowed for an explicit policy of lower prices. Low electricity consumption households have historically paid subsidised prices.

These changes eliminated monopolies and opened up the energy sector to competition and investment. They established a system of electric plants dispatch based on economic merit which favoured clean energy, introduced a market for Clean Energy Certificates, determined a gradual clean energy obligation for big energy users, and created specific goals for clean energy in the national electric system. They also kept the grid operator and market operator as a natural monopoly in the hands of the State, opened up to private firms electricity generation as well as distribution and commercialization, and consolidated an independent energy regulatory body, all while putting us on a path to meet our nationally determined contribution (NDC).

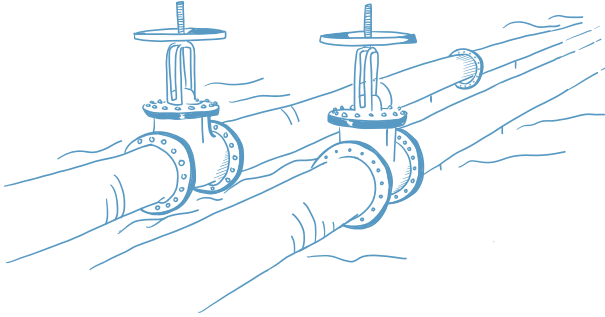
Sadly, Mexico is also a case of regression and institutional destruction under an illiberal and populist government that tried, with mixed success, to undo the liberal reforms and to re-establish monopolistic control of the energy sector starting in 2019. It arbitrarily changed dispatch rules to privilege fossil fuel government owned power plants, displacing clean energy privately owned plants. It cancelled electricity generation permits to private firms selling energy to private users and has denied new permits to private clean energy power plants. It harassed foreign private firms that had invested in combined cycle natural gas power plants supplying energy to the market. This was all done through Executive Orders, Energy Ministry directives and legal changes, working outside of the Constitution.

These legal changes have been challenged before the Supreme Court, which has dragged its feet and finally issued a confusing and ambivalent decision in order not to displease the President, who sent a constitutional bill to Congress to completely reverse the previous liberal energy reform. This bill was thankfully rejected by Congress in April 2022, with the votes of all opposition political parties. However, the President maintains his regressive policies, which have created a conflict with the United States under the rules of the North American Free Trade Agreement. Trade sanctions for Mexico loom over the horizon. Government decisions are aimed to hinder private investment and to block private clean energy generators, in spite of the law and the Constitution, and to privilege state-owned electric plants that run with fuel oil and coal, which are costlier to operate, emit greenhouse gases, and pollute the atmosphere with particulate matter, sulphur dioxide, and nitrogen oxides. This statist and monopolistic approach has considerable climate and environmental impacts.

Recently the Mexican government went further, extorting private firms in the energy sector (Iberdrola) to the point of forcing them to sell their assets to the state in a murky and potentially corrupt procedure. Moreover, the government, through the Energy Regulatory Commission, has changed the definition of clean energy to include natural gas combined cycle plants (transferred by Iberdrola), cheating on the Mexican legislation and the Paris Agreement in regards to clean energy generation goals. In 2022, for the first time in years, electricity generation with fossil fuels grew at the expense of renewables. It is clear that the energy transition in Mexico has all but aborted.

Liberal centre-right policies, instruments and institutions, clearly, are not irreversible, and have to be defended continuously, especially in Latin America, a region that has a strange penchant to bring to power from time to time destructive and regressive populist left-wing parties and politicians.

Hopefully, in Mexico, a forthcoming new liberal government in 2024 may revert to the liberal reforms of 2013 -2014, reinvigorating the energy market, private investment in clean energy, competition, and the energy transition. New and more ambitious clean energy requirements should be introduced, which will allow Mexico to put together a new and ambitious NDC truly aligned with the Paris Agreement goals.



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*Thomas Heilmann*

## Putting aside climate dependency

Can the centre-right deliver solutions to fight the climate crisis? The answer to this question will be decisive for the future. In Germany, the CDU and CSU's long-standing commitment to climate action will only become credible if we accept the magnitude of the task and offer a politically consistent response.

With war raging in Ukraine, the imperative to act has only strengthened. We must end our reliance on Russian gas and transition the German economy away from



fossil fuels altogether. This is no longer purely an environmental issue. For the sake of our security and the competitiveness of our industry, Germany must act. My party, now in opposition, must be at the forefront of the move to a prosperous and green future.

The CDU and CSU experienced a bitter election loss after longstanding Chancellor Angela Merkel stepped down in 2021. Many are complaining that we have failed to focus on our core values after 16 years in government and are suggesting we go back to old solutions. Why this is not a good route back to power can be found in a lesson from our past.

After losing the Bundestag election in 1969, we Christian Democrats experienced years of bitter opposition under the social-liberal coalition of SPD and FDP from 1969 to 1982. Major changes of that time, such as coming to terms with the legacy of National Socialism, stronger co-determination and, above all, “Ostpolitik” (the foreign policy of the social-liberal coalition of the FDR towards the Soviet Union, Poland, Czechoslovakia and East Germany), are today viewed as undisputed achievements. At that time, the majority of the CDU/CSU parliamentary group abstained from voting on the Eastern treaties in the Bundestag, symbolising an ambivalent attitude. Lip service could not conceal the lack of proper positioning at that time. The views within their parliamentary group were divided. This was one of the reasons why the CDU/CSU lost the Bundestag election 50 years ago and thus lost its position as the strongest parliamentary group for the first time in the history of the Federal Republic.

Today, climate change demands clarity in the same way. Those who spend their time questioning clean technologies or arguing that we must put the brakes on the transition in energy or transport are sending misleading signals. Anyone who wants to be in a pro-climate action party needs not only knowledge of the devastating human and financial consequences of global warming, but above all

an understanding of what a new world energy infrastructure could look like and what historic economic and ecological opportunities it holds. However, this potential can only be achieved with significant investment. Those who believe that nations can successfully tackle this task alone fail to recognise the magnitude of the assignment, the weaknesses of any state economy, and the power of competition.

This is where the task of the German centre-right lies with its tradition of overcoming economic challenges by free-market means. We want climate protection to become the driving force of prosperity. It does not help just to prophesy an impending apocalypse. We must act on common sense that it is better for everyone to leave the fossil fuel age now and build a new sustainable energy infrastructure.

This infrastructure takes advantage of what we have today. Through innovation and digital control, we are attracting new suppliers to produce or store electricity exactly when there is demand. In the much-cited dark periods where solar output is low, even base-load power plants offer too little energy, and if we built so many large plants that they could also cover peaks, the old centralised system, with its exorbitant costs, would remain.

Competition will bring us the necessary flexible solutions. We already know of six climate-neutral solutions, each of which can provide 10 to 30 percent of the respective electricity demand: geothermal energy, hydropower and bioenergy, price incentives for saving at the right time, swarm storage in private households, large-scale storage (with different technologies) and gas-fired power plants that work with hydrogen.

Mistakenly, it is always said that renewables have received particularly large subsidies. In fact, state subsidies for nuclear power and coal, i.e. for the old large-scale base-load systems, amount to three times as much in the history of the Federal Republic of Germany at well over 700 billion euros. This does not include the many billions

for final storage, the coal penny and the grid fees, nor the cost of the environmental damage they cause.

The new system will be cheaper, even if we have to invest a lot in the changeover first. It would also be surprising if, almost 150 years after the invention of our current energy system, we could not find something more efficient today. Our transport and communication networks no longer function as they did in the middle of the last century. The transition requires not only investment, but also cutting off the exploiting of old investments. Anyone sitting on an oil well naturally has a vested interest in still selling every litre. With depreciated plants, this always remains big business, whose profiteers openly obstruct climate protection.

Ten or twenty years ago, German business was also quite sceptical. That has changed fundamentally, and not only in Germany. Many companies are now pushing for the green transformation - and demanding clear rules. These include calculable and reliable pricing of climate and environmental damage into the fossil fuels, open competition and good investment conditions for the private sector. If, on the other hand, the current German government of Liberals, Greens and Social Democrats wants to have, for example, new hydrogen infrastructure built by the state, that is not a good idea. As much as the federal government rightly pushes the expansion of renewable energies, it is mistaken in its belief in state control.

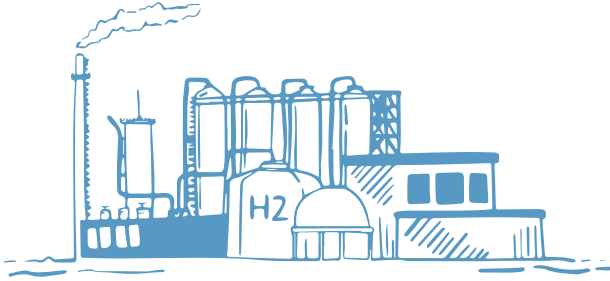
Better news comes from Europe. Here, in the EU, at the turn of the year, emissions trading was extended across Europe to transport and buildings - a fundamental decision that makes the old system more expensive and thus opens up the space for new things that are thus increasingly profitable. At the same time, the next step was developed, i.e. how to create a level playing field with non-European competitors via a carbon border adjustment mechanism. This means that other countries which are able to use fossil fuels to undercut

products like low-carbon steel will be imported with a carbon levy to prevent a flood of cheap material undermining growing low carbon industries in Europe. This is an effective market-based solution to internalising the externalities of increased carbon emissions. It means that producers are forced to take responsibility for the problems they cause, rather than simply leaving it to the rest of us.

This green new world promises previously unimaginable advantages. We have more resources at our disposal than we could ever consume. Renewable energy can be produced almost indefinitely. If we can produce an abundance of electricity, we can also pay much less for it. This has endless potential, in medical advancements, in automating labour and improving human prosperity. Not to mention the fact that with enough cheap energy we can pull carbon dioxide out of the atmosphere and bury it, and produce clean hydrogen to decarbonise industry. When we talk about renewables we often think about them in terms of reductions - reductions in emissions but also in reliability or flexibility. We should really be thinking about them in terms of gains. After all, when our electricity is largely home grown, we gain a level of security from hostile nations that we have always struggled to achieve with fossil fuels. We gain the ability to have an overabundance of energy under various conditions, when scarcity has historically limited human progress. We gain cleaner air, waterways free of pollution from coal mine runoff, and a cleaner world.

We are sitting on an abundance of information and ideas, enhanced by artificial intelligence that can synchronise demand and supply much better. The private sector - driven by human creativity and demanding customers - is moving along a path towards value-based and sustainable business. As Christian democrat and free-market parties, the CDU and CSU must vigorously promote this development. Only then will our climate protection be consistent and our commitment to the Paris climate goals meaningful.

After the Second World War, the CDU/CSU resisted all despondency. With confidence in the market economy, reconstruction was approached optimistically - despite 12 million refugees and devastating destruction. This is also the right attitude for the energy transition, which is nothing less than a total restructuring of our energy infrastructure and thus a new foundation of prosperity for us all.



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*Marco Antonio Sulantay*

## A constitution for people, planet and prosperity

We cannot ignore the need to combat climate change and transition sensibly away from damaging fossil fuels. The world's scientists agree that we must act, and we must do it now.<sup>1</sup> The questions now are how to manage this transition and what the world will look like once it is achieved. For Chile, this is an exciting rather than daunting prospect for several key reasons: our mineral wealth, our beautiful geography, and pioneering technological innovations.

We Chileans are currently redesigning our constitution, which requires considering fundamental questions about our country and what we want our future to be. We must seize the opportunity to make sure that our new constitution supports the free market and enables Chile to produce the materials that the whole world needs for the energy transition.

The current constitution privatised most public services and limited state spending. In 2020, it was decided by a referendum that the constitution should be refreshed.<sup>2</sup> However, the constitutional convention issued a draft constitution which sounded more like a list of demands than a framework for a modern democracy. It threatened much higher taxes for companies mining natural resources (including our biggest exports of copper and aluminium), which would have reduced investment.

No wonder this version was widely rejected by the Chilean people. Now a new convention will try again; hopefully this time, it can avoid swapping one extreme for another. If we get the constitution right, we can support the energy transition and protect our natural environment, while at the same time fostering innovation and encouraging investment in Chile. If not, we risk damaging the industries crucial for a green transition.

One of our most important industries is copper, Chile's largest export and a key conductor in the digital age.<sup>3</sup> Every year Chile smelts 1.4 million tonnes of copper anodes and processes approximately 40% of global copper concentrates.<sup>4</sup> This is set to rise, particularly due to demand for low carbon technologies - for example, the sector accounting for the largest increase in demand for copper is predicted to be electric vehicles (EVs), which use 3 to 5 times more copper than the typical non electric vehicle.<sup>5</sup>

In theory, Chile can meet much of this demand and our economy will benefit from the increased appetite for copper. But in practice,

2022 saw a slump in copper production, partially because fears around high taxes and political unrest curtailed investment.<sup>6</sup> There is a perception that Chile has ‘wasted’ the last three years, as foreign investors worried about what would come from the constitutional convention.<sup>7</sup> My hope is that the rejection of this draft constitution has reminded investors that the majority of people in Chile are sensible and that Chile remains a safe place to invest. I also hope that following this rejection, the high taxes proposed for copper will be revised.<sup>8</sup>

To scale up our copper production, we will need to modernise our production. There are seven copper smelters in Chile: five are publicly owned and two are privately owned. The publicly owned smelters in Chile are among the ten most expensive to run in the world, while the privately owned companies are amongst the most economically competitive in Latin America.<sup>9</sup> The current government of Chile would do well to take note of the fact that these privately owned smelters have managed to be more agile and more efficient than the state-run facilities.

Another mineral that will be critical to the energy transition is lithium, which is also used heavily in EV batteries. Once again, Chile is a key player in this market: estimates suggest that Chile has the second largest lithium reserves in the world, and it makes up one corner of the ‘lithium triangle’ (alongside Argentina and Bolivia), which contains half of the world’s lithium reserves.<sup>10</sup> The demand for lithium is only going to increase as the Inflation Reduction Act (IRA) subsidises EVs in the US, boosting the demand for these vehicles and therefore the lithium that is crucial for making them. Also, from 2024, this lithium will have to be sourced from either the US or its free trade agreement partners, or else it will be ineligible for subsidies.<sup>11</sup> This will make China less competitive and provide Chile, with our free



trade agreement with the USA, an opportunity to get ahead in the global market.

As with copper, high taxes and strict regulations are the main reasons lithium production has not increased as fast as demand. Regulatory processes could be streamlined to encourage investment, for example by no longer requiring lithium companies to seek a licence from the nuclear energy commission.<sup>12</sup> This issue has also plagued battery companies who want to work in Chile and need a large supply of lithium. If EV batteries end up being produced in China instead then they will still become ineligible for the IRA subsidies.<sup>13</sup> We need to simplify this process.

We also need to give investors confidence. Fundamentally, this means the government must be a reliable partner and not dramatically change the terms for companies that want to invest. I believe the President's recent decision to seize control of lithium projects is a mistake which will undermine investment and slow down production in this vital industry. We have already seen with the copper smelting sector how government control causes inefficiencies and stifles innovation. Without innovation we cannot hope to boost these key industries and decarbonise our transport.

Transport is responsible for 30.9% of Chile's greenhouse gas emissions, second only to the energy sector.<sup>14</sup> The uptake of electric vehicles will be key to decarbonisation. Our target is for 40% of private vehicles and 100% of publicly owned vehicles to be electric by 2050. Chile has already made a start with electrifying our public vehicles, particularly buses, and can now proudly boast the largest fleet of electric buses in the world outside of China.<sup>15</sup> Since 2020, we have 776 electric buses operating in Santiago and an open tender for over 2000 more. Until Chile is ready for a wholesale rollout of private electric vehicles, we should encourage the use of these electric buses

and continue to build on our strict emissions standards to create incentives for less polluting vehicles.

Understandably, outside of our major population centres, there is still a worry about electric vehicles given the famously beautiful but rugged landscapes that define our country, where it will be more difficult to install charging points. But given 40% of our population lives within the Santiago metropolitan area, that shouldn't stop us from starting this transition.

When people think of Chile, they often think of our breathtaking landscapes. Whether it's the long coastlines, the Andes mountain range, or the Atacama Desert: they are all celebrated for their beauty. However, they also present logistical challenges when it comes to providing a reliable electricity grid. We have a divided national grid with almost isolated subsystems due to our topography.<sup>16</sup> Little wonder then that Chile relies heavily on imported fossil fuels to supply us with electricity. This obviously presents its own challenge as we are at risk of external price shocks. Our electricity prices have never fully recovered from Argentina's restricting its exports of natural gas from 2004.<sup>17</sup>

I appreciate our high altitudes may make it difficult to build a robust electricity infrastructure but isn't it time to consider the opportunities our landscape also possesses? The Atacama Desert has the best solar power potential in the world, and we have the world's longest mountain range and a shoreline running in parallel, with the potential to host wind, hydropower and geothermal energy.<sup>18</sup> This could be scaled up dramatically to increase the proportion of electricity we get from domestic renewable sources from the 30% average that we have managed over the past decade and reduce our reliance on imported oil and gas.<sup>19</sup>

Of course, the most exciting aspect of the green transition being talked about with regards to Chile is the possibility of producing green hydrogen. Models have shown that the Atacama Desert can harness enough solar energy to produce a reliable and constant supply of electricity with solar PV and battery systems alone, so we could utilise the excess energy in sunny periods for the creation of green hydrogen. The Atacama Desert not only has the country's greatest solar potential but also the majority of its copper production. We could use hydrogen derived methane in producing copper. Studies have shown that methane could be used in the reducing process during the smelting of copper and that this could be more efficient than current smelting methods.<sup>20</sup>

Green hydrogen's potential goes far beyond these industrial uses. Chile's green hydrogen may hold one of the keys to energy storage and fixing the problem of the intermittency of renewable energy.<sup>21</sup> Or we might be able to provide the fuel for low carbon heavy industry or fight the current global fertiliser shortage.<sup>22</sup> At the moment, this development is still in its infancy, but Chile is one of the global frontrunners for producing this emission-free hydrogen. Our new constitution should consider this potential and help provide a good environment to invest in this potentially transformative energy. I fear that the left's current thinking will lead to quite the opposite.

Green hydrogen production will also need water. The draft text of the constitution that was rightly rejected would have introduced revocable permits and forbidden the trading of water.<sup>23</sup> This means that a misallocation of permits would not be able to be fixed by the market but would have to be changed laboriously by the state and, even then, only if the government agreed. Like with the proposed changes to copper and lithium, this would have undermined our competitiveness in these markets and spooked investors. We cannot let similar wording pass in the next draft presented to us.

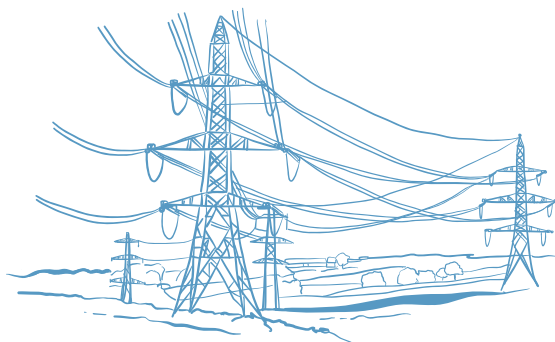
Chile is a country at a crossroads. We have a public which is deeply engaged with asking questions about what sort of country we are and where we should be going. One option is to place restrictions and high royalties on our key industries, stifling growth and efficiency, and falling behind other countries who are committed to a clean energy transition. The other is to embrace all the possibilities that clean energy, our mineral wealth and new technology can offer us. This would put us at the forefront of this new industrial revolution. I know which one I'd prefer and, judging by the last vote, so do the people of Chile.

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## The future is electric

The world is going through a vast transition. We must reduce emissions by more than half by 2030 and become zero-emission societies by 2050. Fossil fuels must be decarbonised or replaced by renewables. Green industry must grow. Old industry must decarbonize. Power is becoming the main input factor, and electrification is the key to success.

Russia's invasion of Ukraine has brought havoc to European energy markets. Right now, oil, gas and coal are back in fashion, and Norway's role as a leading provider of gas to Europe and the UK is more important than

ever. But with prices spiking, even in Norway, our dependency on fossil fuels must end.

Becoming independent of Russian imports of oil and gas means Europe's energy transition will need to accelerate, rather than slow down. After all, we are not vulnerable to Putin's energy war because we have built too many solar and wind farms in Europe, but because we have built too few.

There will be a need to sustain Norway's gas exports for quite some time. For that to happen, we need to continue exploration and production activities on the Norwegian continental shelf. However, all our petroleum activities must take into account that we are subject to the EU Emission Trading Scheme (ETS). The EU has recently passed new legislation, whereby emissions within the ETS will be reduced by 62% by 2030, and 100% by 2040, compared to 2005.<sup>1</sup>

That means that both the production and consumption of Norwegian oil and gas in Europe will be subject to strict emission regulations. Norway has had a CO<sub>2</sub>-levy on oil and gas activities since the early 1990s, and this will increase to approx £200 per tonnes CO<sub>2</sub> by 2030.<sup>2</sup> Our oil and gas companies therefore have a strong financial incentive to reduce emissions from production activities. Any prospect of continuing to develop our oil and gas resources will rest on our ability to cut emissions in line with our climate obligations. That is our licence to operate. Failing to put in place adequate measures to curb emissions would perversely be a blessing in disguise for the climate. One such measure is to electrify our offshore platforms – preferably with offshore wind. That is also sensible economics. Roughly speaking, 1 terawatt hour (TWh) of electricity offshore saves about 3 TWh of natural gas, depending on the efficiency of the turbines.

There are three great opportunities that arise from a clean and green offshore sector – and all are best pursued in collaboration and partnership with the UK. The first one is carbon capture, utilisation

and storage. The UK and Norway combined have the potential to store 150 billion tonnes of CO<sub>2</sub> in the North Sea. Norway has already captured almost a million tonnes of CO<sub>2</sub> every year for more than 25 years at the Sleipner oil field.<sup>3</sup> The first commercial contract for storing CO<sub>2</sub> has been signed, between the fertiliser giant Yara and Northern Lights, a government-backed storage company owned by several of the companies on the Norwegian Continental Shelf. The UK and Norway need to explore this potential together, in close partnership with industries and regulators in Europe. Norway has 8000 kilometres of pipelines along our shores. We now need to start serious work on efficient value chains for transporting CO<sub>2</sub> – either by pipelines or ships.

Natural gas and CO<sub>2</sub> storage is also a key to another big opportunity – the production of blue hydrogen. In many hard to abate sectors, hydrogen is going to be key. In 2050, it is expected that hydrogen can cover around 20 per cent of the world's decarbonisation needs and around 22 per cent of people's energy needs.<sup>4</sup> For such energy carriers to be real alternatives, they must be produced with very low or zero emissions, and they must be available, competitive and safe. Production from natural gas with CCS is one way of achieving that.

In the short term, renewable energy will likely go towards producing electricity in Europe, and the amount of excess electricity available to produce green hydrogen will likely be limited for quite some time. We therefore need to be agnostic about the colour of hydrogen – be it blue or green – and focus on emissions and commercially viable hydrogen supply chains. Green hydrogen is no longer the only and preferred option in Europe. Blue is on the agenda, and rightly so. Blue hydrogen will be a lot easier to produce at scale in the short and medium term, compared to green, although gas price hikes mean that we have to be mindful of its longer term cost competitiveness.



The third opportunity that arises from our present activities on the Norwegian Continental Shelf is floating offshore wind power. The UK has come a long way in bottom-fixed facilities. Together we can lead the technological journey towards cost-competitive floating wind power. We can build on our unique offshore competencies and technologies, we have excellent wind resources and we are in close proximity to a bigger market. The world's biggest offshore floating wind farm, Hywind Tampen, is now in operation in Norway.

That said, we need to move forward on common grid solutions. Right now, some blame our interconnectors for the high electricity prices in Norway. At the same time we aim to build 30 GW of offshore wind power. It is quite clear to me that we need to be connected to other markets to make that work. After all, 30 GW is almost as much as our present electricity capacity through hydropower.

It makes no sense that countries like Denmark, the Netherlands, Germany and Belgium – supported by the EU – are working together to build energy islands without including the two countries with the longest coastlines and the greatest potential for offshore wind in their plans. There needs to be a concerted effort among countries around the North Sea basin to develop grid and production solutions that work to the benefit of all.

Abundant and affordable power has been a competitive advantage and a boon for Norway for several decades, and power production must be increased significantly in the coming years to keep it so.

The Norwegian electricity supply is 100 per cent renewable and has been so for decades.<sup>5</sup> That is one of the reasons why we have the cleanest aluminium production in the world. Norway can produce eight aluminium cans with the same emissions that China uses to produce just one.

That said, electricity only accounts for half of Norway's energy use.<sup>6</sup> Decarbonising Norway will therefore require a shift from fossil fuels to renewable energy in all sectors, and a vast increase in our electricity production. We need to upgrade our hydropower plants, and build more solar and wind power onshore and offshore. And we need to impose more energy efficiency measures.

The major hurdle seems to be our permitting system. It simply takes too much time to get a permit. 2030 is today. 2050 is tomorrow. We need to start yesterday. Another hurdle is NIMBYism, especially relating to onshore wind farms. There is a real conflict of interest between preserving a pristine natural environment and building more renewable energy, and we need to take that issue very seriously. That said, Norway has a population of 5 million people and more square kilometres than Germany. Pending local approval, it should be possible to produce more power from turbines onshore.

In the transportation sector, we are leading the world. Eight out of 10 new cars sold are now fully electric.<sup>7</sup> Cities are swiftly introducing electric buses. We have more than 70 fully electric car ferries traversing our fjords. This development is largely due to the combination of heavy taxation on ICE vehicles, and tax exemption and other benefits for EVs. One of my neighbours is a climate change denier. He drives an electric car. When I asked him whether that was a paradox, he answered: "I may not believe in the science, but there is nothing wrong with my calculator."

That is an important point to note. If we are to succeed with the green transition, there needs to be profit in putting people and the planet first. That will start a snowball rolling that cannot be stopped. We saw the same during President Trump's tenure. Despite his best efforts to "make coal great again", Trump was himself trumped by market forces. Renewables became cheaper and easier to build, and cheap shale gas outcompeted coal. Market forces are a powerful tool.

If we use them right, they can accelerate the green transition. A linear development simply will not do. We need exponential curves on renewables, EVs, heat pumps and the like.

Another sector that needs decarbonising is the building sector. In Norway we agreed already in 2012 that fossil heating oil needed to be phased out. We agreed on an outright ban from 2020 and provided financial support to enable households to make the switch from fossil to biofuels, or to heat pumps. One of the reasons why this measure was accepted by the public without much debate was the time frame: eight years gave households predictability and time to make the switch.

More needs to be done to reduce emissions from building materials, construction activities and transport. Reusing building materials could be one of the answers. New buildings in Norway now have to be constructed in such a way that materials can be more easily reused if and when the building needs to be demolished.

Another big emitter is our industry. Most people are only now starting to realise how much electricity will be required just to green our existing industrial companies, let alone provide for new green industries like battery production and the like. Again, I believe an ample supply of electricity is the key.

After all, the future is electric.

## ENDNOTES

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