



# Powering our common home

Setting out the path  
to a just energy system



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## Acronyms

<b>CCC</b>	UK Committee on Climate Change
<b>CCS</b>	Carbon capture and storage
<b>COP</b>	Conference of the Parties to the United Nations Framework Convention
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>GDP</b>	Gross domestic product
<b>GHG</b>	Greenhouse gas
<b>G7</b>	Group of Seven countries
<b>G20</b>	Group of Twenty countries
<b>IEA</b>	International Energy Agency
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>LDC</b>	Least Developed Country
<b>MtCO<sub>2</sub></b>	Metric tons of carbon dioxide equivalent
<b>PV</b>	Photovoltaic
<b>SCCS</b>	Stop Climate Chaos Scotland
<b>SDG</b>	Sustainable Development Goal
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>USD</b>	United States Dollar

# Powering our common home

## Setting out the path to a just energy system



### Suffering the impacts of an unfair energy system

*Like millions of other small scale farmers, David Muniyideyi from Zambia (pictured with his family) is struggling to cope with climate change. Highly polluting fossil fuels are a major cause of global warming, which is making it difficult for David to grow enough food to feed his family.*

*With the support of SCIAF and our partners in Zambia, David has changed the way he farms so that he is able to cope with unpredictable and severe weather, and can grow more food. He earns an income by selling his surplus produce from his farm and has even bought solar panels that generate clean electricity for his home.*

*But in order for others like David to survive and thrive, we need to tackle climate change. Our political leaders must urgently move from fossil fuels to clean alternatives, and make sure that all people have access to sustainable, safe energy.*

David Muniyideyi lives with his wife Mate Njewka and children Kanowa, Funo, Njekwa and Muniyideyi, in Zambia.

### SCIAF

The Scottish Catholic International Aid Fund (SCIAF) is the official overseas aid and development charity of the Catholic Church in Scotland. SCIAF runs projects in 15 countries in Africa, Latin America and Asia, helping thousands of people of all faiths and none to overcome hunger, poverty, war and natural disasters every year. In Scotland we campaign to tackle the root causes of global poverty. Our vision is a world in which all people, especially the poor and the oppressed, can live life to the full.

# Introduction: Why we need a new energy system

We all need heat, electricity and fuel in our daily lives. But often the types of energy we use cause harm to our planet and our fellow sisters and brothers.

The world is facing an ecological, humanitarian and moral crisis, as we approach the point of no return from irreversible global warming and climate chaos. Highly-polluting fossil fuels are a major driving force behind this.

Since the 1850s, global use of coal, oil and gas has dominated our energy supply, leading to the rapid growth of carbon dioxide (CO<sub>2</sub>) emissions.<sup>i</sup> The fossil fuels that power our industries, keep our homes warm, and propel our transport, are the main source of man-made carbon emissions in the world.

Historically, economic development has gone hand-in-hand with increasing energy use and growth of Greenhouse Gas (GHG) emissions.<sup>ii</sup> The global energy system faces two major challenges; how to meet the growing energy demand and how to ensure that we no longer rely on energy sources that harm the planet and all people, particularly the poor.

In 2015, countries from around the world committed to the Paris Agreement at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of Parties (COP21). The historic climate agreement requires countries to limit global temperature increase to 2°C above pre-industrialised levels and to strive to keep global warming below 1.5°C. The 1.5°C temperature limit has been identified by scientists as a tipping point for dangerous and irreversible climate change.

Time is running out for governments to meet the commitments they made in the Paris agreement, as global warming has already reached 1°C.<sup>iii</sup> However, there are reasons for hope if we act fast. Clean energy is being deployed around the world; renewable alternatives are gradually becoming cheaper than energy generated from fossil fuels, and clean energy is attracting growing levels of investment.<sup>iv</sup> With rapid action to limit our use of fossil fuels and to speed up the move to clean energy, protecting our common home is still possible.

The Catholic Church has taken a leading role in the fight for climate justice since the 1990s, when Pope John Paul II warned us of global ecological crises brought about by fossil fuels and deforestation.<sup>v</sup> In 2014, Pope Francis published his ecological encyclical, *Laudato Si'*, calling on Catholics and all humanity to urgently protect our common home from climate chaos. The global Catholic community has joined the campaign for climate justice in great numbers. The Pope's climate call has been taken on by Catholics in Scotland too. In 2016, over 6,000 SCIAF supporters wrote to the Scottish Government, demanding it takes urgent action to halt dangerous climate change. Catholic congregations across Scotland are also making changes in their own lives in order to cut their carbon footprints.

The communities SCIAF works with in developing countries are already struggling to cope with the impact of climate change. This is why we urge the Scottish Government to recognise the need to move away from fossil fuels, and to lead the way to a clean energy future.

In this paper, we will outline the arguments for a transition to clean energy from a justice perspective. We will show why governments must increase their ambition in decarbonising our economies, and support developing countries' access to clean energy. The paper will conclude with a clear set of actions political leaders in Scotland need to take to create a cleaner, safer and more just world.

If we act urgently to limit our use of fossil fuels, there's still time to protect our common home.

# An unjust energy system



Farmer Titus Kalembe works with SCIAF in Zambia, teaching farming methods that help his community adapt to climate change.

## Changing the future for farmers in Zambia

Small scale farmers produce up to 80% of the food consumed in many parts of the developing world.<sup>vi</sup> It is these farmers who are suffering the worst impacts of climate change. SCIAF's Zambian partners are calling for governments across the globe to do their utmost to reverse the climate crisis.

*"I have seen a great change [in the weather] in my lifetime. We can have too much rain which brings floods and at other times there's no rain and we get droughts. If this type of weather continues it will be a major challenge for us. People won't*

*have enough food. If this climate worsens, it will be the end of family life and maybe death.*

*"To the person who says there is no climate change I would say, indeed there is...It is here! To world leaders, I would say, if there is a way of stopping this thing so it can go back to the way it used to be, please do what you can. They should plan not only for the present but for the future."*

- Titus Kalembe from Nagasuka, Zambia

# Church teaching on energy and climate

The Bible tells us that energy, in its many forms, is a gift from God. The Creator, through his infinite love, causes the sun to rise on all; the evil and the good, wherever they live.<sup>vii</sup> Thus, everyone is called to act in the same spirit and to work to ensure the universal destination of energy, granting light for those who are in the dark, heat for those who are cold, and providing the necessary energy to prepare food for those who are hungry.<sup>viii</sup>

During his papacy Pope Benedict XVI made it clear that it was the moral duty of nations to act in solidarity with the poorest in order to mitigate climate change. He said that “in view of the threatening [climate] catastrophe, there is the recognition everywhere that we must make moral decisions.”<sup>ix</sup>

To carry out this change in the energy system, Pope Benedict XVI told governments that they should implement policies in favour of human development, stability, peace, climate and the environment. This, he said, will “require considerable and prolonged efforts”. He called on states to find the necessary funds to “effectively and efficiently secure peace, protect the environment and its resources<sup>x</sup>, and to ensure the change of the energy paradigm”.<sup>xi</sup>

In his encyclical letter *Laudato Si'*, Pope Francis also challenged our political leaders to work towards a fairer energy system. He tells us that the current system must be transformed if we are to protect the climate, a “common good, belonging to all and meant for all.”<sup>xii</sup> He describes how the problems of global warming and ecological destruction have been aggravated by a model of development built on the intensive use of fossil fuels, which is at the heart of the worldwide energy system.<sup>xiii</sup> He highlights that “technology based on the use of highly polluting fossil fuels...needs to be progressively replaced without delay”.<sup>xiv</sup>

The harmful impact of the fossil fuel-based energy system on our planet is undeniable. CO<sub>2</sub> emissions from the burning of fossil fuels and industrial processes accounted for 78% of the total Greenhouse Gas emission increase from 1970 to 2010; these emissions have continued to rise since then.<sup>xv</sup> Fossil fuels remain the dominant source of

energy in the world<sup>xvi</sup>, and energy use currently accounts for more than two thirds of emissions.<sup>xvii</sup> 2015 was the hottest year since records began<sup>xviii</sup> and has been followed by a number of devastating natural disasters around the world. In 2016, countries across southern and eastern Africa struggled to cope with a severe drought and food crisis induced by an unusually strong El Niño. The human cost of these changes is enormous; the World Health Organisation (WHO) estimates that global warming will cause 250,000 additional deaths per annum between 2030 and 2050.<sup>xix</sup>

Pope Francis has highlighted that in order to halt dangerous climate change and environmental destruction, we must move to clean, low-carbon energy. Indeed, if governments take the commitments they made in Paris seriously and want to avoid catastrophic climate change, they need to leave the majority of remaining fossil fuel reserves in the ground.<sup>xx</sup>

According to the Carbon Tracker Initiative, we can only afford to burn one fifth of fossil fuel reserves if we are to keep global warming below 2°C, the maximum limit agreed to by nations in the Paris Climate Agreement.<sup>xxi</sup> Subsequent studies have also placed strict limits on the amount of oil, coal and gas the world's economies can exploit without putting the future of our planet at serious risk.<sup>xxii</sup>

An energy system based on fossil fuels is clearly incompatible with the global climate commitment world leaders have made.

## Pope Francis has called for fossil fuel technology to be replaced without delay.

# Failing our poorest brothers and sisters



People from the Boquerón community in Colombia protest against environmental damage caused by coal mining.

## Human rights and energy: coal mining in Colombia

Colombia is one of the world's largest coal exporters. The highly polluting fossil fuel is shipped to countries around the world, including the UK.

While the coal industry is a major driving force behind global warming, it also directly contributes to human rights violations and environmental destruction.

SCIAF's local partner Tierra Digna supports communities who have been harmed by coal mining in the department of Cesar – one of the centres of coal production in Colombia. There, mining developments have resulted in large-scale deforestation and environmental destruction. Air pollution has put people's health at risk, and has forced at least three communities in that region to move from their land.

For the people of Boquerón (pictured) the arrival of coal mining has been devastating; mining activities have polluted the village's water supply, and the

spread of toxic coal dust has made it hard for people to breathe. As a result, the whole community, which has traditionally relied on the local river for farming and fishing, has had to abandon their village.

Johana Rocha Gómez, a human rights lawyer and co-founder of Tierra Digna, said:

"Governments often justify an economy based on fossil fuel extraction by the tax and royalties they collect from industry. But the social and environmental cost of extraction can be extremely high for communities.

"The same communities that are likely to suffer the worst impacts of global warming are already being impoverished and displaced by the fossil fuel industry. Not only do we need an energy system that works with global climate goals, but we also need a system that respects human rights and supports the well-being of communities."

The global energy system is failing our poorest brothers and sisters in more ways than one. Currently, 1.1 billion people do not have access to electricity,<sup>xxiii</sup> with rural areas, sub-Saharan Africa and the Least Developed Countries (LDCs) affected the most.<sup>xxiv</sup> While some of the most vulnerable communities in the world are suffering from the impact of the current fossil fuel-based energy system, many of these communities don't have access to enough energy to meet their most basic needs.

The former UN Secretary General Ban Ki-moon described energy as "the golden thread that connects economic growth, social equity and environmental sustainability."<sup>xxv</sup> Sustainable energy is not only critical in achieving climate justice, but also in enabling communities in developing countries to thrive. For instance, without reliable energy supplies, health clinics and schools can't function properly. Access to clean water and sanitation is constrained without effective pumping capacity. Food security is adversely affected, as energy is required to produce and distribute food and water.<sup>xxvi</sup>

Developing countries and emerging economies are the primary source of the growing demand for energy. There are concerns that some countries will seek to meet this growing demand with highly polluting fossil fuels, such as coal.<sup>xxvii</sup> Given that developed countries like Scotland have contributed most to climate change through industrialisation, we have a special responsibility to address the problem and support access to modern, clean energy for our poorest brothers and sisters.<sup>xxviii</sup> Investing in clean alternatives has great potential to increase access to energy while contributing to climate mitigation targets.<sup>xxix</sup>

Clean alternatives are often better suited to developing countries' expanding energy needs than fossil fuels. Small scale farmers' energy needs are often served most cheaply by off-grid or mini-grid electricity connections powered by renewable technologies, including solar photovoltaics (PV), wind and mini-hydro.<sup>xxx</sup>

## Finance for a clean energy future

With demand for energy growing around the globe, policymakers are beginning to recognise that the energy system must serve the poorest and most vulnerable communities better. This aim was affirmed in the Sustainable Development Goals (SDGs), the internationally agreed set of goals to eradicate poverty. SDG7 calls on governments to ensure access to affordable, reliable, sustainable and modern energy for all.<sup>xxxi</sup> This aim has been adopted by 193 UN member states, including the UK.

Guaranteeing access to clean energy for all will require considerable efforts from governments both in the industrialised north and in developing countries. For example, the United Nations Environment Programme (UNEP) estimates that to meet increasing demand and support economic growth, the power sector in Africa needs to install an estimated 7,000 megawatts (MW) of new generation capacity every year. This would require an estimated USD 41 billion of funding per year, which represents 6.4 per cent of the Gross Domestic Product (GDP) of the whole region. UNEP tells us that a large financing gap continues to exist because the focus of much of the current spending is on maintenance and operation of the existing power infrastructure, with little remaining to fund long-term investments and to address the power supply gap.<sup>xxxii</sup>

## Energy that is free from human rights abuses

Investing in low-carbon energy is essential for sustainable development since growth based on further fossil fuel exploitation will prove costly for the world's poorest communities in the long-term. In addition to investing in energy that is low-carbon, sustainable and accessible, policy-makers should also consider the social, environmental and human rights implications of their chosen energy supply.



There are many examples of the devastating impact extractive projects can have in local communities; from large-scale oil spills that harm people's livelihoods and public health,<sup>xxxiii</sup> to deaths resulting from poor labour standards in coal mines.<sup>xxxiv</sup> The fossil fuel industry has frequently been accused of poor corporate practice and human rights abuses.

However, potential human rights impacts should also be considered when investing in renewable or other energy alternatives. For example, while the use of hydropower or biomass can amount to considerable carbon savings, large scale dams or agriculture projects implemented without proper consultation, regulation and consent may have severe implications for community and environmental rights.<sup>xxxv</sup> Clean energy therefore, is energy that is both low-carbon and has low environmental and social impacts.<sup>xxxvi</sup>

Clean energy  
is potentially  
cheaper and better  
suited to meet  
the needs of  
small-scale farmers.



# Tackling the climate crisis with clean energy

*“We have entered a new era of clean energy growth that can fuel a future of opportunity and greater prosperity for every person on the planet.”<sup>xxxvii</sup>*

- Ban Ki-moon, former UN Secretary General

## Carbon capture and storage: A risky solution to a real crisis

Some governments are considering carbon capture and storage (CCS) technology as a route to decarbonise the energy sector and heavily polluting industries. CCS is used to capture and store carbon released in electricity generation and industrial processes in order to prevent it from entering the atmosphere. While CCS could ease the transition from fossil fuels to clean energy, the technology has proved expensive and difficult to develop, and so far, has only been used successfully in a small number of projects.<sup>xxxviii</sup>

The potential of CCS to contribute to climate change mitigation has been questioned widely; if the development of CCS technology fails to proceed fast enough, governments could fall

significantly short of their pledges to reduce carbon emissions. Furthermore, some concerns have been raised over potential environmental and public health impacts of CCS including potentially fatal leaks of CO<sub>2</sub>.<sup>xxxix</sup>

Research and development for climate change mitigation technologies, like CCS, is an important investment. However, governments must not let this detract from policies that we know will deliver urgent and major emission cuts. The consequences of dangerous climate change are so certain, so imminent and so catastrophic, that we cannot gamble on technology that might not become available.

## Carbon footprint of electricity generation

No single set of figures is available on the carbon footprint of different energy sources. However, examining the lifecycle emissions of different electricity sources show us how significantly renewable energy sources can reduce carbon emissions.<sup>xl</sup> For instance, according to one estimate, electricity generated with coal produces nine times or more carbon than the same amount

of electricity produced by solar panels on rooftops. While electricity from natural gas emits less CO<sub>2</sub> than coal, it cannot compete with clean alternatives. According to some estimates, onshore wind generates only 8% of the carbon emissions released through gas-powered generation.<sup>xli</sup>

The past few years have seen historic growth in renewable capacity around the world – the move to clean energy is already underway.<sup>xlii</sup> In many countries – large and small, rich and poor – clean energy is already being used on a large scale. In 2015, Scotland met over half of its electricity consumption from renewable energy<sup>xliii</sup> and in Denmark over 40% of domestic electricity was supplied by wind power alone.<sup>xliv</sup> In Germany more than 30% of electricity is generated from renewables, while in Nicaragua 36% of electricity comes from clean sources. China is rapidly expanding its use of renewable energy and is already the largest generator of electricity from clean sources.<sup>xlv</sup> Emerging economies, like India, are following suit.<sup>xlvi</sup>

The bad news is that although the move to clean alternatives has begun, it is not happening fast enough.<sup>xlvii</sup> According to the International Energy Agency (IEA), even though the use of low-carbon alternatives has increased, the share of fossil fuels within the world energy supply has remained

relatively unchanged in the past four decades; approximately 80% of global energy supply still comes from fossil fuels.<sup>xlviii</sup> Moreover, governments continue to invest heavily in the fossil fuel industry; it is estimated that G20 countries spend \$88 billion every year supporting exploration.<sup>xlix</sup>

A consensus is building among policymakers and international energy and climate authorities that governments must increase support for clean energy. While there is no one-size-fits-all strategy for expanding the development of clean energy systems, the Intergovernmental Panel on Climate Change (IPCC) stresses the importance of government policies in driving renewable energy use.<sup>1</sup> With the growing energy demand in developing nations and the impending climate crisis, it is clear that our governments must move beyond the old development model based on fossil fuels and make the change to clean energy their priority.



Clean energy sources are providing electricity to a growing number of people around the world.

# Living up to our promises: Energy in Scotland

## Energy justice at home

Not only is the fossil fuel energy system harming our poor brothers and sisters in developing countries, it is also failing communities here at home. In the North East of Scotland, families have relied on jobs and income from the oil and gas industry for decades. This industry has allowed many to flourish, but is no longer providing as many secure jobs for communities who have

come to depend on it. It is estimated that 120,000 people have been made redundant since 2014, when fluctuations in global oil prices drove the fossil fuel industry into a crisis.<sup>ii</sup> It is vital that a move to clean energy makes the best use of the skills and expertise of these workers and opens new opportunities for people employed in the sector in Scotland.

## Vulnerable nations are leading the way

While the negative impacts of the current global energy system fall largely on the global south, developing nations are demonstrating that it is possible to move to clean energy. In 2015 developing countries overtook developed countries in the volume of investment in renewable energy.<sup>iii</sup> At the UNFCCC meeting in Marrakech, Morocco, in 2016, 47 developing nations committed to generating 100% of energy from renewable sources.<sup>iiiii</sup> These countries, who are members of the Climate Vulnerable Forum (CVF), have decided to pioneer new ways to sustainable development rather than relying on short-sighted growth based on fossil fuel consumption.

In order to distribute the burden fairly, developed industrialised nations must accept more responsibility and urgently increase their use of clean energy. They must do so by dramatically reducing the carbon footprint of their own energy production and consumption, and by ensuring that poorer nations have the money and technical capacity to develop clean energy.

## Fossil fuels are running our economy

Currently, Scotland is relying heavily on highly polluting fossil fuels to keep our society and economy running.

Energy supply is the largest contributor to Scottish emissions, at nearly 30%, followed closely by transport at 28%.<sup>iv</sup> The Scottish Government has made major progress in clean electricity; fossil fuel powered electricity generation has decreased in recent years and well over half of the electricity used in Scotland is now generated from renewables.<sup>lv</sup> However, fossil fuels remain the dominant source of energy, with petroleum and gas accounting for nearly four-fifths of consumption. The move to clean energy has been too slow in areas such as transport and buildings.<sup>lvi</sup>

In addition to relying on oil and gas for domestic energy use, Scotland continues to produce very high levels of fossil fuels. Despite a downturn in oil prices since 2014, the North Sea still produces 1.5 million barrels of oil a day, and Oil & Gas UK predicts that production could reach two million barrels a day by 2017. Scotland is estimated to have the largest oil reserves in the EU, and is one of the largest oil producers in the region.<sup>lvii</sup>

The Scottish Government has recognised the need to reduce the amount of fossil fuels we consume. However, the Government is considering allowing new forms of unconventional gas extraction.

This decision would further add to Scotland's already high levels of fossil fuel production. Many governments are looking to natural gas as a 'transition fuel' that could help to reduce reliance on coal and oil. Although natural gas has a significantly lower carbon footprint than oil and coal as it is burned, studies have questioned whether replacing one fossil fuel with another would in practice lead to the substantial carbon reductions that are needed;<sup>lviii</sup> particular concerns have been raised around fugitive methane leaks from shale gas extraction.<sup>lix</sup> The UK Government has opted to exploit new unconventional gas reserves despite environmental and public health concerns. In the autumn of 2016, it gave the go ahead for hydraulic fracturing – a controversial form of shale gas extraction - in Lancashire.<sup>lx</sup>

SCIAF believes Scotland can choose a different path. Our country has great potential for clean energy; in fact, Scotland alone boasts 25% of Europe's wind resources.<sup>lxi</sup> With decisive policies and bold ambition, Scotland could lead the move from fossil fuels to a clean energy system.

“Sometimes the rain stops before the crops in the field have grown enough to survive. At times when we haven't been able to grow enough food, my children couldn't go to school.”

Mary Jackson, Chiholomba village, Malawi



Mary Jackson from Malawi needs rain to grow food for her children. But climate change is making the weather unpredictable. When rain falls, it's often too little too late.

# Our Government must act now

## Recommendations to the Scottish Government:

The continued role fossil fuels play in our economy is at odds with the urgent need to reduce emissions. However, with decisive policy-making and investment, a clean energy future is still within our grasp.

In recent years, Scotland has taken some important steps towards a low-carbon future, and is widely recognised as a champion of the climate justice agenda overseas. Scotland has made good progress in achieving its climate targets, with a particularly strong record in cutting emissions from electricity and waste and reducing our energy use faster than the rest of the UK. But the scale of the global energy challenge demands that we do more.

We acknowledge that the Scottish Government does not control all aspects of energy policy with some powers reserved to the UK Government. However, we believe that Scotland could use its powers to set a principled example and lead the way to a future of cleaner, fairer and more sustainable energy.

We call on our political leaders to consider the following proposals:

- 1. Phase out fossil fuels from Scotland's energy mix and push for rapid growth in our use of clean energy.** The Scottish Government should invest in clean energy that is both low carbon and low in its social and environmental cost, including (but not restricted to) solar, geothermal, tidal and wind energy sources. Clean alternatives should supply energy across all sectors, including heat, transport and electricity generation. In addition to increasing the supply of clean alternatives, the government should consider a range of policies to decarbonise our economy, including, for example, energy efficiency measures for Scottish homes and interventions that encourage active travel.

While the successful deployment of carbon capture and storage could help Scotland reach its climate targets, the Scottish Government should be wary of relying on this unproven technology in its climate mitigation strategy.

- 2. Prevent new fossil fuel projects.** SCIAF calls on the Scottish Government to put a permanent ban on further onshore oil, gas and coal exploration and extraction, including unconventional oil and gas (such as fracking). Instead, the Scottish Government should develop a strategy for moving to clean energy and an alternative development plan for the north east of Scotland. The strategy should take into account the views and needs of communities whose livelihoods rely on the fossil fuel industry.
- 3. Work across government to promote access to clean energy for people in developing countries.** The Scottish Government should ensure that decisions across all its departments are in line with the ambition set in Sustainable Development Goal 7 on affordable and clean energy. Specifically, the government should continue to ensure that no future development aid is spent on fossil fuel extraction or infrastructure projects, and that support for clean energy initiatives considers their long-term sustainability.

The Scottish Government should also make sure that trade and investment policies and strategies are contributing to the Sustainable Development Goals, ensuring that developing countries are able to enjoy access to adequate, clean energy in line with their development and environmental ambitions. Energy projects both at home and abroad must take into account the rights and needs of local communities.

## Working for an energy transition across government

The Scottish Government can support the transition to clean energy across all its departments. To do this, it should consider policies that encourage the development and use of clean energy, as well as policies that reduce consumption.

SCIAF works closely with Stop Climate Chaos Scotland (SCCS), a coalition of environmental and development organisations. The coalition has developed a set of practical proposals on how the Scottish Government could take steps towards an energy transition. These proposals include:

### **Decarbonise the transport sector**

Fossil fuels continue to power the majority of transport in Scotland. Cars, trains, buses, ships and planes contribute over 28% of Scottish GHG emissions.<sup>lxii</sup> The UK Committee on Climate Change (CCC) has highlighted that excluding aviation and shipping, Scottish transport emissions have stagnated since the 1990s.<sup>lxiii</sup>

By limiting the use of petrol cars and encouraging the sale of electric vehicles, the Scottish Government could significantly reduce the use of fossil fuels and cut emissions. A number of European countries have already taken steps to phase out fossil fuel vehicles, with Norway considering a target to reach zero fossil-fuel car sales by 2025.<sup>lxiv</sup>

The Scottish Government should also consider the environmental impact of air travel expansion as it decides on the future taxation of the industry.

### **Invest in active travel**

In addition to decarbonising transport, the Scottish Government could consider support for active travel such as walking and cycling. Increasing public spending on cycling infrastructure, and requiring local authorities to build at least one cross-city cycle route per city, would be positive steps forward.

### **Clean heat for Scottish homes**

In addition to reducing the amount of fossil fuels Scotland uses, the Government could reduce demand for fuel by making Scotland's homes more energy efficient. Burning fuel for domestic use, such as heating, accounts for 12.6% of Scottish GHG emissions.<sup>lxv</sup> These emissions could be reduced in a cost-effective way by ensuring all Scottish homes are insulated to the highest standard. For example, upgrading all homes to an Energy Performance Certificate C by 2025 could save an estimated 1 MtCO<sub>2</sub> a year by 2025.<sup>lxvi</sup>

Heat accounts for over half of Scottish emissions, but only 4% of our heat demand is met from clean energy sources. To further decarbonise our buildings, the Scottish Government could support rapid growth in district heating network.

### **Support clean energy growth**

Scotland has shown great leadership by increasing clean energy in our electricity supply. The Scottish Government could take the next step towards a low-carbon future by setting a clear plan on how to expand the use of clean energy across the heat and transport sectors in a sustainable manner.

The Scottish Government could also explore increasing support for the use of renewable energy systems for communities and individual homes. For example, it could introduce a planning requirement for installation of solar panels in new commercial and domestic buildings.

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- <sup>viii</sup> Mt 25, 31-46. Pontifical Council for Justice and Peace (2014) "Energy, Justice and Peace", Libreria Editrice Vaticana.
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▶ A barefoot solar engineer in the solar powered village of Tinginapu, in the Eastern Ghats of Orissa, India.

*“The environment is God’s gift to everyone, and in our use of it we have a responsibility towards the poor, towards future generations and towards humanity as a whole.”*

- Pope Benedict XVI, Caritas in Veritate

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