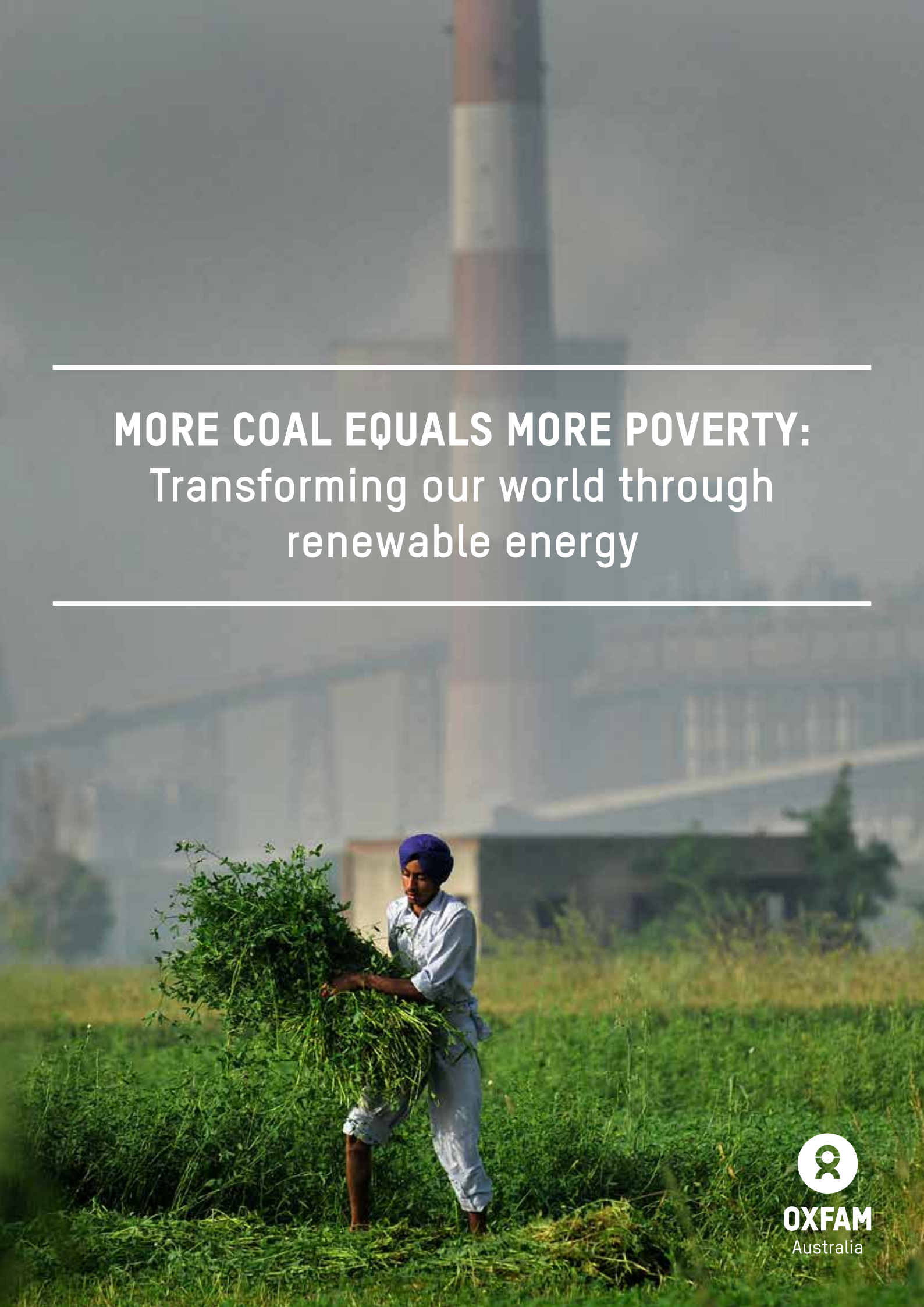
MORE COAL EQUALS MORE POVERTY:
Transforming our world through renewable energy



OXFAM
Australia

More coal equals more poverty: Transforming our world through renewable energy

Oxfam Australia
132 Leicester Street, Carlton, Victoria, 3053, Australia

Tel + 61 3 9289 | Fax +61 3 9347 1983
enquire@oxfam.org.au
www.oxfam.org.au

Acknowledgements: Oxfam Australia acknowledges the assistance of Amanda Banks, Kelly Dent, Rachel Ball, Ula Majewski and Cate Anderson in preparing this report.
Author: Simon Bradshaw, Climate Change Advocacy Lead, Oxfam Australia
Editor: Kerri-Anne Chinn
Designer: Stina Johansson
Cover photo: Chris Stowers/Panos

OXFAM RESEARCH REPORTS

Oxfam Research Reports are written in order to share research results, contribute to public debate and invite feedback on development and humanitarian policy and practice.

ABOUT OXFAM

One person in three in the world lives in poverty. Oxfam is determined to change that world by mobilising the power of people against poverty. Around the globe, Oxfam works to find practical, innovative ways for people to lift themselves out of poverty and thrive. We save lives and help rebuild livelihoods when crisis strikes. And we campaign so the voices of the poor influence the local and global decisions that affect them. In all we do, Oxfam works with partner organisations and alongside vulnerable women and men to end the injustices that cause poverty.

CONTENTS

In the north of Uganda, Viola and Iren are now able to study at home after dark. As in many parts of the world, solar lighting is at the centre of efforts to improve education.

Photo: Sven Torfinn/Oxfam Novib

EXECUTIVE SUMMARY

Tackling poverty and inequality means bringing an end to the fossil fuel era, beginning with no new coal and supporting renewable energy for all.

More coal will drive more people into poverty through the devastating consequences of climate change and the direct toll of coal mining and burning on local communities, including loss of land, pollution, and health impacts.

With the vast majority of energy-poor households in developing countries living beyond the reach of the electricity grid, coal is categorically unsuited to addressing the challenges of energy poverty. Renewables are the clear answer to bringing electricity to those who currently live without it, and are already bringing transformative benefits for communities around the world.

Recognition of coal's immense toll on vulnerable communities and why more coal will entrench poverty has been largely absent from the battle over climate and energy policy in Australia.

Also missing from the debate has been an acknowledgement of coal's inability to meet the energy needs of the world's poor, and an understanding of the scale and pace of action necessary from Australia to meet our obligations under the Paris Agreement and help limit warming to 1.5°C — a matter of survival for many vulnerable countries.

As an international development agency working in more than 90 countries, Oxfam has observed directly the impacts of coal and climate change on communities worldwide, as well as how renewable energy is changing lives, raising incomes, improving health and education, and powering inclusive development.

For millions of families, climate change is not a distant threat but a real and present danger — affecting their ability to grow and buy enough food to eat, fuelling extreme weather disasters in their regions, displacing people from their land and homes, and costing lives.

Throughout the world, with the cost of renewable energy in freefall, developing countries are implementing ambitious renewable energy strategies to meet the challenges of universal energy access, rising energy demand, long-term energy security, and the global climate crisis.

India is dramatically accelerating its renewable energy plans. It is likely to reach at least 275GW of renewable energy capacity within the next decade — more than five times the capacity of Australia's entire electricity system — and plans to end coal imports. China continues to dominate the global renewable energy market and has suspended more than 100 new coal plants. The world's most vulnerable countries, including our Pacific island neighbours, have made bold commitments to action on energy and climate change, including striving to achieve 100% renewable energy as soon as possible. It's time Australia followed their lead.

Against the backdrop of an imperilled Great Barrier Reef, extreme weather disasters, and food shortages in many countries, Australia's carbon pollution is continuing to climb — the tragic consequence of more than a decade of climate policy paralysis, short-term political opportunism, and the corrosive influence of the fossil fuel industry. And instead of eagerly supporting the renewable energy aspirations of developing countries, the government is looking to expand Australia's coal exports.

Australia's current stance is fundamentally at odds with the global shift to renewable energy and ignores our responsibility to help protect communities from the ravages of climate change, the opportunities for new jobs and prosperity through renewable energy, and the global goals of achieving universal energy access and ending poverty.

To play its part in ending global poverty and tackling climate change, Australia must develop a comprehensive, long-term plan of action for both transforming our own energy system and supporting developing countries to confront the climate crisis and build the clean economies of the future. This plan must include:

- **A commitment to no new coalmines or coalmine expansions in Australia, including saying no to Adani's Carmichael mega mine, coupled with increased support for renewable energy plans in developing countries.**
- **The complete phase-out of coal and other fossil fuels from Australia's energy system, including shifting to 100% renewable electricity by 2030. Australia must achieve zero emissions before 2040.**
- **Greater support to vulnerable countries with adapting to the escalating impacts of climate change.**

PART 1: COAL, CLIMATE CHANGE AND POVERTY

The true cost of burning more coal will be measured in humanitarian disasters, hunger, health impacts and the violation of rights. Burning coal remains the single biggest contributor to climate change. While climate change affects us all, it is poor populations in developing countries who are impacted hardest — the same communities who have contributed the least to global carbon pollution and have fewer resources with which to adapt.

The negative impacts of coal go beyond its contribution to climate change. Burning coal is also a deadly source of air pollution and responsible for hundreds of thousands of premature deaths. Often, coalmines themselves displace local communities from their land and homes and deplete or contaminate scarce water supplies.

Unfortunately, recognition of the immense toll of coal and climate change on communities worldwide has been largely absent from the current battle over climate and energy policy in Australia. In this section, we explore the true cost of coal on human lives across the world, with more coal equalling more poverty.

The human cost of climate change

For millions of families, climate change is not a distant threat but a very real and present danger — undermining livelihoods, fuelling extreme weather disasters, displacing people from their land and homes, and costing lives.

Across East Africa, communities are suffering from a catastrophic drought. Nearly 11 million people in Kenya, Ethiopia and Somalia are dangerously hungry. The worst drought-affected areas in Somalia are on the brink of famine. Conditions have been made worse by climate change, with failed rains occurring against a backdrop of higher temperatures and drier conditions.[1] In Columbia[2] and Peru,[3] devastating rains have caused havoc through flooding and landslides. In Bangladesh, sea-level rise, higher temperatures, swollen rivers and more intense cyclones are threatening homes, livelihoods and infrastructure and undermining hard-won development gains.[4]

Around the world, climate change is already affecting many communities' ability to grow and buy enough food to eat, with impacts set to worsen dramatically over coming decades. It is estimated that climate change could drive a further 122 million people into extreme poverty by 2030.[5] Climate change also exacerbates existing inequalities within communities, with its impacts felt disproportionately by women and children.

For Australians, the unprecedented damage to large sections of the Great Barrier Reef has brought home the stark realities of climate change. Worldwide, more than 500 million people depend on coral reefs for food, storm protection, income and other needs.[6] Damaging these critical ecosystems puts millions of people at risk, affecting the very conditions their communities depend on, leaving them vulnerable to hunger and homelessness.

Ayan with her son Mohammed outside their temporary home in Garadag, northern Somalia. Ayan and her family used to have 300 sheep and plenty of food and income. They lost almost all their sheep to the drought and decided to move to Garadag for help. Ayan's youngest son died shortly after they moved.

"I am alone here with one child at the moment, and am terrified by hunger and thirst … If the rains don't come, things will get much worse."

Photo: Petterik Wiggers/Oxfam

Pacific leaders have called climate change the greatest threat to the livelihoods, security and wellbeing of the people of the Pacific and one of the greatest challenges for the entire world.

In March 2015, Tropical Cyclone Pam, one of the strongest cyclones ever recorded in the South Pacific, brought devastation to Vanuatu and other Pacific nations. An estimated 188,000 people in Vanuatu — more than 70% of the population — were affected by the disaster. Tropical Cyclone Pam decimated food stocks, flattened homes, and destroyed or contaminated water supplies.[7] A year later, Fiji was hit by an even more powerful cyclone, with Tropical Cyclone Winston affecting more than half a million people in Fiji and losses amounting to one-fifth of the nation's GDP.[8] For comparison, if Australia were to experience losses worth one-fifth of its GDP, it would amount to around AUD $300 billion — a figure 33 times greater than the cost of all natural disasters in Australia in 2015.[9]

Cyclones may be a feature of life in many Pacific island countries. But climate change is seeing their destructive power rise, increasing the threats to life, homes, and livelihoods.[10]

While it is the sudden disasters like Tropical Cyclones Pam and Winston that make our headlines, Pacific Islanders face many other additional threats in a warming world. A high proportion of Pacific communities live in rural and remote areas. Relying on subsistence farming and fishing, they are strongly affected by shifting rainfall patterns, degradation of marine ecosystems, and other impacts of climate change. For low-lying populations, including the atoll countries of Kiribati, Tuvalu and the Marshall Islands, communities face the dire prospect of being displaced from their homes, as rising seas and storm surges contaminate water supplies, increase soil salinity and submerge land. With their culture, identity and history deeply tied to the land, the displacement of these communities has consequences far beyond the loss of food and water security and livelihoods.

Blacksands, near Port Vila, Vanuatu, March 2015. Cyclone Pam ravaged the island nation of Vanuatu, destroying homes and decimating food stocks and water supplies.

Photo: Philippe Metois/Oxfam

Tarawa, Kiribati. Tekiraraiti Takakia stands in front of a house destroyed during a king tide in 2015.

"Big waves flood our homes; destroy our houses. Our plants can't grow here anymore ... I like to live here, but there is no hope. Eventually we will have to leave this place, it's just a matter of time."

Photo: Vlad Sokhin/Panos/OxfamAUS

Australians are also paying a heavy price from the impacts of climate change. Climate change is resulting in heatwaves that are hotter, more frequent and longer-lasting[11] while also increasing the threat of bushfires.[12] What's more, our own security and prosperity is closely linked to the stability, security and prosperity of our region. The Asia-Pacific region is the most disaster-prone area of the world, and the risks are being further exacerbated by climate change. Faced with the likelihood of more frequent extreme weather disasters, Australia can be expected to be increasingly called upon to respond to disasters and meet the costs of recovery.[13]

Climate change also places severe and disproportionate burdens on Aboriginal and Torres Strait Islander Peoples, affecting health, livelihoods, culture, and connection to Country, and adding to the long history of injustices, discrimination and dispossession. We can see this occurring on Murray Island in the eastern Torres Strait, where climate change is already forcing islanders to relocate to higher ground.

Coal and air pollution — a public health disaster

Burning coal places a staggering burden on public health, worldwide. In China, particulate pollution from coal burning contributed to an estimated 366,000 premature deaths in 2013.[14] In 2011–2012, particulate pollution from Indian coal plants resulted in an estimated 80,000–115,000 premature deaths and more than 20 million asthma cases.[15] In Australia, coal-fired power stations remain the largest source of particulate pollution, which accounts for more than 3,000 premature deaths a year.[16]

The health impacts of coal are felt by all. But they are felt most severely by coal workers and communities living close to coalmines and coal-fired power plants. To make things worse, the people who are bearing the brunt of coalmining and coal-fired power often see no benefits from this proximity, only harm. For example, communities living across India's coal belt, where there is the highest concentration of coal-fired power plants, have among the lowest rates of access to electricity in the country.[17]

Land, rights, and protecting country

Beyond fuelling dangerous climate change and deadly air pollution, the coal industry has also forced communities from their homes, depleted scarce water resources, and violated the rights of Indigenous peoples across the world.

In 2015, Oxfam documented the experiences of people moved involuntarily from their land and homes by the Benga coalmine in Mozambique.[18] Despite a planned resettlement program, those who were displaced have been significantly disadvantaged, faced with the loss of livelihoods and economic opportunities, the fracturing of their community, and uncertainty about their future. Displaced from the fertile banks of the Revuboe River to remote and arid Mualadzi, families found themselves unable to grow enough food, living without enough water, and far from schools and employment opportunities.

The coal industry consumes and pollutes large quantities of fresh water, often competing for limited water resources with smallholder farmers. Roughly half of all coal plants in China and a quarter of those in India are located in areas where surface and groundwater are at risk of drying up, because water is being withdrawn faster than it can be replenished.[19]

In Limpopo, South Africa, local communities face forced land acquisitions, pollution of their water supply, and further human rights abuses from the proposed Boikarabelo coalmine.[20] The proposed mine is strongly opposed by local communities, particularly by women in these communities, as they are most affected by mining. When mining affects the ability to grow food and access clean water, these burdens are felt disproportionately by women, as they bear the main responsibility for these tasks. Furthermore, women often aren't involved in consultion or decision-making processes when companies negotiate access to land. Women mineworkers also face discrimination, poor working conditions and unequal pay. It is understood that Australia's Export Credit Agency (Efic) is considering funding the Boikarabelo mine. Supported by Action Aid, local communities are campaigning to ensure that Efic rules out any investment in the project.

In Australia, Indigenous rights are at the heart of the battle to stop Adani's proposed Carmichael mega mine in Queensland's Galilee Basin. The Wangan and Jagalingou People, the Traditional Owners of land at the proposed site, are fighting to protect their land and culture from the mine.[21]

PART 2: SCALING UP CLEAN ENERGY TO FIGHT POVERTY

Moving from fossil fuels to renewable energy is fundamental to ending poverty, including bringing electricity to more than a billion people who still live without it. More coal, on the other hand, will do little to increase access to electricity and only serve to entrench poverty.[22] Renewable energy offers the key not only to achieving universal energy access, but also to raising incomes and employment, reducing inequality, and powering inclusive social and economic development.

In stark contradiction to these realities, the Australian Government has continued to argue that expanding Australia's coal exports will help ease poverty in India and worldwide. Indeed, this has become a key defence of Adani's proposed Carmichael mega mine. In reality, the opposite is true — more coal equals more poverty. In this section, we explore the advantages of renewable energy both in achieving universal energy access and in meeting the larger energy needs of developing countries.

Access to clean water is a major struggle for coastal communities in Bangladesh. For Alaya Khatun, who lives in Sohalia village on the edge of the Sundarbans, the installation of a solar pump and filtering system has cut the time she spends collecting water each day from four hours to five minutes.

Photo: Tasha Black/Oxfam

Energy for all

More than a billion people worldwide lack access to electricity, the majority living in Sub-Saharan Africa and South Asia.[23]

Still more — roughly one in three people worldwide — lack clean and safe energy for cooking and heating.[24] Relying on open fires and simple stoves, more than 4 million people die prematurely from indoor air pollution.[25] Achieving universal access to affordable, reliable and clean energy is fundamental to ending global poverty.

With 84% of energy-poor households living in rural areas, many are far from the electricity grid.[26] Even for those living close to the grid, connection costs and mismanagement tend to prevent access.[27] As coal is only suitable for feeding power to large, centralised energy grids, it is doing little to increase access to electricity. Between 2010 and 2014, the percentage of Indian households lacking access to electricity fell by only 3%,[28] while India's coal-fired electricity generating capacity increased by 67% over the same period.[29]

In contrast, local renewable energy sources are providing many poor communities in developing countries with a quick and affordable means of accessing electricity — powering electric lights, mobile phones, irrigation pumps, refrigeration for storing food and vaccines, and bringing other life-changing benefits.[30] At the same time, cleaner fuels and more efficient stoves are reducing indoor air pollution and saving lives. As illustrated by the following examples, access to these modern energy solutions is bringing transformative advancements for health, education, safety, gender equality, livelihoods, and other development outcomes. Renewable energy also provides communities with greater self-sufficiency and energy security.[31]

In the Gakenke district of northern Rwanda, Christine Manirafasha (left) makes biogas from her pigs. The biogas has provided her family with clean cooking fuel, rather than burning firewood, and income to create a poultry business.

"I used to go to bed with red eyes from itching them as I had spent such a long time in the smoke. I don't have any health problems anymore."

Photo: Aurelie Marrier d'Unienvi/Oxfam

Shirley Laban, a prominent Pacific voice on climate change, stands in front of a solar installation in Efate, Vanuatu. Pacific island countries have set some of the most ambitious renewable energy targets in the world, with many well on their way to meeting them.

Photo: Arlene Bax/OxfamAUS

In the southern Vietnamese province of Ca Mau, Kum Van Nguyen (right) also uses his pigs to create biogas. This produces all the energy his family needs for cooking and they no longer have to collect and burn wood.

"The best thing about the pigs and the biogas is that it costs almost nothing to run and keeps the environment clean."

Photo: Tessa Bunney/Oxfam

Before the installation of solar lamps on the streets around her home in Port au Prince, Haiti, Adrienne feared walking alone at night and had twice been mugged.

"For me the [solar] panels have a really important impact ... I am safe, I feel much more comfortable."

Photo: Vincent Tremeau/Oxfam

A global energy transition

While the advantages of renewable energy in achieving basic energy access are clear, the current energy debate also rightly focuses on meeting the energy demands of rapidly expanding middle classes and industry.

In addition to the task of bringing electricity to 240 million people who still live without it, India also faces a major rise in energy demand through urbanisation, industrial development and demands for greater mobility. India plans to install a whopping 175GW[32] of renewable energy capacity by 2022, to help increase energy access, meet rising energy demands, and reduce reliance on imported coal.

India's Expert Group on 175GW by 2022 presents India's "vast and largely untapped" renewable energy potential as "one of India's major advantages today and going forward."[33] India could achieve nearly 900GW of solar and wind capacity by 2047 — more than six times the country's current peak demand.[34] A rapid transition to renewable energy will have major environmental, social and economic benefits for India, resulting in less pollution, more local employment opportunities and a dramatic reduction in India's coal import bill.[35] Indian Energy Minister Piyush Goyal has repeatedly affirmed India's desire to cease coal imports. In 2016, following record low solar prices, the Minister affirmed that in India "a new coal plant would give you costlier power than a solar plant."[36]

The plummeting cost of renewable energy, coupled with advancements in battery storage and other technologies, is placing the ambitious renewable energy aspirations of developing countries — including India and China — within reach and driving a revolution in the way the world produces energy.

The cost of solar photovoltaic (PV) systems has dropped by 80% since 2009.[37] In 2016, over the period of one year, the "levelised cost" of solar PV generation — which includes both the initial investment and ongoing operating costs — fell by 17%.[38] Meanwhile, the cost of coal-fired power has been rising,[39] even before we factor in coal's negative impacts on people and the planet. According to the World Economic Forum, solar and wind energy are now either the same price or cheaper than coal in more than 30 countries, with at least two-thirds of the world likely to reach that point "in the next couple of years."[40]

In 2016, we saw the world install another 138.5GW of new renewable energy capacity — roughly three times the entire generating capacity of Australia's energy system — and beating the 2015 record by 9%.[41] Globally, investment in new renewable energy capacity was roughly double that in fossil fuel generation.[42] The amount of new coal-fired power being built around the world fell by two thirds on the previous year, along with a record rate of retirement of existing coal-fired power plants.[43] China has suspended over 100 planned or partially constructed coal-fired power plants[44] and plans to invest more than AUD $493 billion in renewables through to 2020, creating 13 million new jobs in the process.[45] Already, renewables have surpassed coal to become the largest source of installed power capacity in the world.[46] A 2017 study, by renewable energy policy network REN21, showed an overwhelming majority of energy experts believe that a transition to 100% renewable energy on a global level is both feasible and realistic.[47]

India's latest National Energy Plan projects that not only will it achieve its 2022 target of 175GW of renewable energy capacity, but that it will reach 275GW of renewable energy capacity by 2027 and has no need to begin constructing new coal-fired power plants over the next decade.[48]

Revenue from the global renewable energy market already amounts to over half a trillion Australian dollars a year and is growing rapidly.[49] China is cementing its dominance of the global renewable energy market, investing heavily in renewables at home and around the world.[50] Australia, with excellent renewable energy resources and expertise, is exceptionally well placed to reap the economic benefits of this global energy transition. But is missing out on the global renewable energy boom by clinging to the technologies of the past.

PART 3: WHY LIMITING WARMING TO 1.5°C MEANS NO SPACE FOR NEW COAL

The Paris Agreement commits all countries to limiting warming to well below 2°C and pursuing efforts to limit to 1.5°C. While even 1.5°C cannot be regarded as a "safe" limit, achieving this goal will significantly reduce the impacts of climate change worldwide, and for many vulnerable countries is a matter of survival.

Alarmingly, our national debate over climate and energy policy has become dangerously divorced from an understanding of the scale and pace of action necessary to achieve the Paris goals.

Analysis of the available global "carbon budget" reveals a perilous shortfall between Australia's current commitments and what is required — both in terms of our domestic energy transition and support for climate action in developing countries.

Limiting warming to 1.5°C will require the very rapid decarbonisation of the global economy. Australia, as a wealthy developed country, must achieve zero emissions before 2040 and support the global energy transition. The science is clear — there is no space for new coal.

In 2015, after more than two decades of negotiations under the United Nations Framework Convention on Climate Change, the world reached a universal global agreement for ending global carbon pollution and addressing the impacts of climate change. At the heart of the Paris Agreement is a commitment to limiting warming to well below 2°C and pursuing efforts to limit to 1.5°C.[51]

For Australia to do its part towards limiting warming to 1.5°C, we must remain within our fair share of a global carbon budget — that is, the total amount of cumulative carbon dioxide and other greenhouse gas emissions that the world can afford to emit. An understanding of the available global carbon budget, and Australia's role in keeping within it, must be the foundation of our climate and energy policies. Yet this has been largely absent from recent political and public debate. Through its 2017 review of climate change policies, the Australian Government has the opportunity to establish a credible long-term emissions reduction goal, which will inform the scale of immediate action Australia must take.

Analysis of global carbon budgets prepared by the Intergovernmental Panel on Climate Change (IPCC) shows that achieving the 1.5°C goal will require the very rapid decarbonisation of the global economy. It would only take another four years of current global carbon pollution to exhaust a budget that provides a fair (66%) probability of limiting warming to 1.5°C.[51] In other words, global carbon pollution will need to begin declining very rapidly and reach zero in the coming decades.

For Australia, the implications are yet more significant, as a wealthy developed country with among the world's highest per capita carbon pollution and significant contributions to the world's cumulative emissions. The Paris Agreement rightly requires already developed countries to lead the transition away from fossil fuels, rapidly shifting their own economies to 100% renewable energy and supporting less developed countries in avoiding carbon pollution and achieving sustainable development.

Based even on a generous share of the available global carbon budget, Australia's domestic emissions will need to reach zero before 2040. This means substantially strengthening Australia's current goal for 2030, which is to reduce emissions by a mere 26–28% below 2005 levels.

Recognition of this incredibly constrained global carbon budget also has dramatic implications for the future of Australia's coal exports.

To remain within a global carbon budget that provides a 50% chance of limiting warming to 2°C, 80% of the world's known coal reserves — including over 90% of Australia's coal reserves — would need to remain unburned.[52] However, even this striking and frequently cited finding fails to capture the scale of the task we face. We must ensure a strong chance of limiting warming to 1.5°C, the limit rightly demanded by the world's most vulnerable communities. For that, the available carbon budget is considerably smaller and very nearly exhausted. The conclusion is inescapable — limiting warming to 1.5°C means no space for new coal. Opening up new coal reserves in Australia is simply incompatible with avoiding a future of far more dangerous climate change, and would risk increasing dangers and hardships for communities around the world.

The Australian Government must commit to no new coalmines or coalmine expansions in Australia, including saying no to Adani's proposed Carmichael mega mine. It's time to rapidly phase out coal from Australia's domestic energy supply and shift from exporting dirty coal to supporting developing countries in building the clean economies of the future.

CONCLUSION AND RECOMMENDATIONS

A future of zero poverty, resilient communities, and energy for all is possible, but by no means assured.

The choices Australia makes about its climate and energy policies, including how we engage with the rest of the world, profoundly affects the future prospects for Australians and for communities throughout our region and beyond.

Making smart choices begins by acknowledging the scale of the challenge that lies ahead, letting go of vested interests, embracing the solutions and opportunities for a brighter future, and acknowledging the convenient truth that what works for the planet also works for people.

While the Australian Government, captured by the fossil fuel industry, is clinging to the technologies of the past and an outdated paradigm of energy and development, the world has moved on.

In China, coal consumption and emissions from electricity have flat-lined.[53] The fact that emissions from electricity in China, a developing country, are declining as Australia's are rising[54] is both an extraordinary indictment on Australia and proof that decoupling development from carbon pollution is possible. India is forging ahead with an ever-more ambitious renewable energy agenda to meet its growing energy demand and bring electricity to those still living without it. The countries most vulnerable to climate change, including our Pacific island neighbours, are showing extraordinary leadership — committing to ambitious renewable energy targets while working to build the resilience of their communities and hold the rest of the world to account. In 2016, the Climate Vulnerable Forum — a group of nearly 50 countries acutely vulnerable to climate change, including Fiji, Kiribati, the Marshall Islands, Samoa, Tuvalu and Vanuatu — made a bold pledge to climate action, including striving to achieve 100% renewable energy as soon as possible and at the latest between 2030 and 2050. As the group proclaimed, "climate action does not limit development — it strengthens it."[55]

The rise of renewable, community-driven energy solutions is central to the pursuit of fairer economies, less inequality, and the shifting of power from big corporations and powerful elites to local communities. The potential for local income, employment and livelihood opportunities from community-owned renewable energy is in stark contrast to the possibility that money from Adani's proposed Carmichael mega mine would be shifted to tax havens.[56] While the coal industry represents the gross inequities of today's economic landscape — with benefits accruing to the few while the poor are left to bear the costs — renewable energy is set to power the fair economies of the future.

The same benefits hold true for other essential aspects of responding to climate change, beyond the transition to renewable energy. Reaching zero emissions and below will require changes in land management and the protection and restoration of our ecosystems. Greater Indigenous control of land leads to reduced carbon pollution, biodiversity protection, and new opportunities for income and employment. For example, traditional fire management in Australia's tropical savannahs can reduce greenhouse emissions and maintain soil carbon by reducing the incidence of large fires during the dry season.[57]

Unsurprisingly, multiple polls have shown the Australian Government's inaction on climate change to be out of step with the wishes of an overwhelming majority of Australians and the business community. A March 2017 poll by The Australian Institute showed very high public support for renewable energy, with 67% of respondents saying Australia was moving into renewable energy too slowly.[58] In that same month, 61% of respondents to a Fairfax/Ipsos poll said it was time for Australia to move away from coal.[59] According to The Climate Institute's most recent Climate of the Nation report, 65% of Australians want their country to be a world leader in finding solutions to climate change.[60] Industry groups, unions, investors and social service groups have all amped up their calls for action.[61]

Solar, wind and other renewable energies, coupled with investment in energy storage and smart grid technologies, offers the path to a low-cost, reliable and secure energy supply.[62] A rapid transition to 100% renewable energy is not only possible but the solution to the Australian Government's goals of energy affordability and security. By contrast, investing in new coal or gas-fired[63] power promises to push electricity prices up, while contributing to ever greater risks from climate change.

Looking beyond our shores, supporting developing countries with their renewable energy plans is a responsibility of Australia, as a wealthy developed country. This will also allow Australia to tap into the opportunities of the burgeoning global renewable energy market, ensuring our future prosperity in a world that has moved beyond coal.

A failure to break free from coal will harm our nation — leaving Australians with an expensive and unreliable energy system, stranded high-carbon assets, lost opportunities for new jobs and prosperity, and little to offer the rest of the world as it continues to transition away from fossil fuels. It will also leave Australians and communities around the world more exposed to the perils of climate change. Embracing renewable energy and smart climate solutions, both here and abroad, offers the promise of a brighter future for all. All actors must play their part, including government, industry and the financial sector.

It's time to make a choice.

2017 offers an important opportunity to begin the transformation of our climate and energy policies and redefine Australia's place in the world — through the Australian Government's ongoing review of its climate change policies, the Finkel Review into the Future Security of the National Energy Market, and a new comprehensive framework to guide Australia's international engagement over the next five to 10 years (the Foreign Policy Whitepaper).

Australia requires a long-term plan of action on climate change that brings together our domestic climate policy with Australian foreign policy and development assistance in a bold and comprehensive strategy for both Australia's energy future and our role in the world. The core elements of this vision should be as follows:

Clean exports, not coal

- Commit to no new coalmines or coalmine expansions in Australia, including saying no to Adani's proposed Carmichael mega mine. This means ruling out public funding for new coal infrastructure.
- Develop a plan and timeline for the closure of existing coalmines, including fair transitional arrangements for affected communities.
- Through increased bilateral and multilateral cooperation and international climate finance, expand the sharing of expertise and resources to support developing countries with their renewable energy plans.
- Help ensure that international climate and development funds, including the Asian Infrastructure Development Bank and Green Climate Fund, support only clean, pro-poor development solutions and align with the priorities of recipient countries.

A zero-carbon, 100% renewable Australia

- Develop a plan for the complete phase-out of coal and other fossil fuels from Australia's energy system, and a transition to 100% renewable electricity by 2030. This will require a mix of policy instruments and public investments, including providing strong price signals across the economy and supporting research and development. Australia's domestic emissions must reach zero before 2040.
- Ensure further abatement of carbon pollution through the protection and restoration of the Australian landscape and ecosystems.
- Maximise the opportunities for health, employment, equality, and Indigenous rights, including supporting community-owned and decentralised energy projects, ensuring Traditional Owners have the power to protect Country, and supporting Indigenous-led climate solutions.

Supporting vulnerable communities in adapting to climate change

- Increase Australia's contribution to international climate finance. Australia's total contribution of public and private funds, including support for renewable energy programs and climate change adaptation, should reach at least AUD $3.2bn per year by 2020. At least half this amount should support climate change adaptation.
- Develop and implement a comprehensive climate change strategy for Australia's aid program, focused in particular on building community resilience, addressing the needs and capacities of women and children, and aligning with the priorities of countries and communities in our region and beyond.

The advantages of renewable energy are no more apparent than in Pacific island countries. In the past, those with access to electricity have relied largely on expensive imported fuels. Local renewable energy is both freeing communities from fuel imports and increasing access to electricity among remote communities.

Helena shows off her solar system outside her home in Eton village, Efate, Vanuatu.

Photo: Arlene Bax/OxfamAUS

REFERENCES

[1] *A Climate in Crisis: How Climate Change is Making Drought and Humanitarian Disaster Worse in East Africa* (Oxfam, 2017) http://policy-practice.oxfam.org.uk/publications/a-climate-in-crisis-how-climate-change-is-making-drought-and-humanitarian-disas-620263

[2] *Millions of Columbians at Risk to Climate Change: Minister* (Reuters, 25 April 2017) http://www.reuters.com/article/us-colombia-environment-idUSKBN17R2FT

[3] *In Peru, Droughts Give Way to Floods as Climate Change Looms* (Reuters, 2 Feb 2017) http://www.reuters.com/article/us-peru-floods-idUSKBN15H2YR

[4] *The Unfolding Tragedy of Climate Change in Bangladesh* (Scientific American, 21 April 2017) https://blogs.scientificamerican.com/guest-blog/the-unfolding-tragedy-of-climate-change-in-bangladesh/

[5] *The State of Food and Agriculture: Climate Change, Agriculture and Food Security* (Food and Agriculture Organization of the United Nations, 2016) http://www.fao.org/3/a-i6030e.pdf

[6] *Status of Coral Reefs of the World* (Global Coral Reef Monitoring Network, 2004) https://www.iucn.org/sites/dev/files/import/downloads/cr_status_2004_vol1.pdf

[7] *Oxfam in Vanuatu: Cyclone Pam Response* (March 2016) https://www.oxfam.org.au/wp-content/uploads/2016/03/2016-IP-001-Cyclone-Pam-one-year-report_PUBLIC_FA2.pdf

[8] *Fiji Post-Disaster Needs Assessment: Tropical Cyclone Winston* (Government of Fiji, May 2016) http://reliefweb.int/report/fiji/fiji-post-disaster-needs-assessment-may-2016-tropical-cyclone-winston-february-20-2016

[9] In 2015, the economic cost of natural disasters in Australia was more than AUD $9 billion, or about 0.6% of GDP *Australia Business Roundtable for Disaster Resilience and Safer Communities* (2016) http://australianbusinessroundtable.com.au/assets/documents/Media%20releases/March%202%20-%20Natural%20disasters%20cost%20Australians%20$33bn%20a%20year%20by%202015.pdf

[10] *Climate Change and Tropical Cyclones* (Fact Sheet, Climate Council, 2017) https://www.climatecouncil.org.au/fact-sheet-tropical-cyclones-and-climate-change

[11] *Angry Summer 2016/17: Climate Change Super-Charging Extreme Weather* (Climate Council, 2017) https://www.climatecouncil.org.au/angry-summer-report

[12] *The Burning Issue: Climate Change and the Australian Bushfire Threat* (Climate Council, 2015) https://www.climatecouncil.org.au/burningissuereport2015

[13] *Disasters in Asia and the Pacific: 2015 Year in Review* (United Nations Economic and Social Commission for Asia and the Pacific, March 2016) http://www.unescap.org/resources/disasters-asia-and-pacific-2015-year-review

[14] *Burden of Disease Attributable to Coal-Burning and other Major Sources of Air Pollution in China* (Tsinghua University and the Health Effects Institute, 2016) https://www.healtheffects.org/system/files/GBDMAPS-ExecSummaryEnglishFinal.pdf

[15] *Coal Kills: An Assessment of Death and Disease caused by India's Dirtiest Energy Source* (Conservation Action Trust, UrbanEmissions.info and Greenpeace India, 2013) http://www.greenpeace.org/india/Global/india/report/Coal_Kills.pdf

[16] *National Pollutant Inventory Lifts the Lid of Australia's Toxic Burden* (Media Release, Environmental Justice Australia, 3 April 2017) https://envirojustice.org.au/media/national-pollutant-inventory-lifts-the-lid-on-australia%E2%80%99s-toxic-burden

[17] *Electricity for All in India: Why Coal is Not Always King* (Vasudha Foundation, 2014) http://www.vasudha-foundation.org/wp-content/uploads/Electricity-for-all-in-India-Why-Coal-is-not-always-king1.pdf

[18] *Mining, Resettlement and Lost Livelihoods: Listening to the Voices of Resettled Communities in Mualadzi, Mozambique* (Oxfam, 2015) https://www.oxfam.org.au/wp-content/uploads/2015/04/mining-resettlement-and-lost-livelihoods_eng_web.pdf

[19] *Beyond Coal: Scaling-Up Clean Energy to Fight Global Poverty* (Overseas Development Institute, CAFOD, Christian Aid, Oxfam, Vasudha Foundation, IESR, EEW, Tierra Digna, RAEL, Institute of Development Studies, Practical Action and Misereor, 2016) https://www.odi.org/sites/odi.org.uk/files/resource-documents/10964.pdf

[20] http://www.stopeficcoalmine.com

[21] http://wanganjagalingou.com.au/our-fight/

[22] *Beyond Coal: Scaling-Up Clean Energy to Fight Global Poverty* (Overseas Development Institute et al, 2016) https://www.odi.org/sites/odi.org.uk/files/resource-documents/10964.pdf

[23] *Global Tracking Framework: Progress Towards Sustainable Energy* (International Bank for Reconstruction and Development, The World Bank and the International Energy Agency, 2017) http://seforall.org/sites/default/files/GTF%20Executive%20Summary%202017.pdf

[24] Ibid.

[25] *Household Air Pollution and Health* (Factsheet, World Health Organization, 2015) http://www.who.int/mediacentre/factsheets/fs292/en/

[26] *Energy for All: Financing Access for the Poor* (International Energy Agency, 2011) https://www.iea.org/publications/freepublications/publication/weo2011_energy_for_all.pdf

[27] *Beyond Coal: Scaling-Up Clean Energy to Fight Global Poverty* (Overseas Development Institute et al, 2016) https://www.odi.org/sites/odi.org.uk/files/resource-documents/10964.pdf

[28] Based on World Bank Data and the Global Tracking Framework http://data.worldbank.org/indicator/EG.ELC.ACCS.ZS http://gtf.esmap.org/

[29] Based on monthly reports from the Government of India, Ministry of Power, Central Electricity Authority http://www.cea.nic.in/

[30] *Beyond Coal: Scaling-Up Clean Energy to Fight Global Poverty* (Overseas Development Institute et al, 2016) https://www.odi.org/sites/odi.org.uk/files/resource-documents/10964.pdf

[31] *Powering Up Against Poverty: Why Renewable Energy is the Future* (Oxfam Australia, 2015) https://www.oxfam.org.au/wp-content/uploads/2015/08/coal_report_lowres_web21.pdf

[32] India's target of 175GW of renewable energy by 2022 target does not include large-scale hydropower. Including large-scale hydropower would raise the target to 225GW.

[33] *Report of the Expert Group on 175GW RE by 2022* (2015) http://niti.gov.in/writereaddata/files/writereaddata/files/document_publication/report-175-GW-RE.pdf

[34] Ibid.

[35] Ibid.

[36] *Solar is Now Cheaper than Coal* (Climate Home, 4 April 2016) http://www.climatechangenews.com/2016/04/18/solar-is-now-cheaper-than-coal-says-india-energy-minister/

[37] *The Power to Change: Solar and Wind Cost Reduction Potential to 2025* (International Renewable Energy Agency, 2016) http://www.irena.org/DocumentDownloads/Publications/IRENA_Power_to_Change_2016.pdf

[38] *Global Trends in Renewable Energy Investment 2017* (Frankfurt School – UNEP Centre and Bloomberg New Energy Finance, 2017) http://fs-unep-centre.org/sites/default/files/publications/globaltrendsinrenewableenergyinvestment2017.pdf

[39] *Renewable Infrastructure Investment Handbook: A Guide for Institutional Investors* (World Economic Forum, 2016) http://www3.weforum.org/docs/WEF_Renewable_Infrastructure_Investment_Handbook.pdf

[40] Ibid.

[41] *Global Trends in Renewable Energy Investment 2017* (Frankfurt School – UNEP Centre and Bloomberg New Energy Finance, 2017) http://fs-unep-centre.org/sites/default/files/publications/globaltrendsinrenewableenergyinvestment2017.pdf

[42] Ibid.

[43] *Boom and Bust 2016: Tracking the Global Coal Plant Pipeline* (Coal Swarm, the Sierra Club and Greenpeace, 2016) http://sierraclub.org/sites/www.sierraclub.org/files/uploads-wysiwig/final%20boom%20and%20bust%202017%20(3-27-16).pdf

[44] *Mapped: The Coal Power Plants China Just Suspended* (Greenpeace Energy Desk, January 2017) http://energydesk.greenpeace.org/2017/01/18/china-climate-leader-coal-davos-xi-jinping/

[45] *China to Plow $361 Billion into Renewable Fuel by 2020* (Reuters, 5 January 2017) http://energydesk.greenpeace.org/2017/01/18/china-climate-leader-coal-davos-xi-jinping/

[46] *IEA Raises its Five-Year Renewable Growth Forecast as 2015 Marks Record Year* (International Energy Agency, 25 October 2016) https://www.iea.org/newsroom/news/2016/october/iea-raises-its-five-year-renewable-growth-forecast-as-2015-marks-record-year.html

[47] *Renewables Global Futures Report: Great Debates Towards 100% Renewable Energy* (REN21, 2017) http://www.ren21.net/wp-content/uploads/2017/03/GFR-Full-Report-2017.pdf

[48] *Draft National Energy Plan* (Government of India, Ministry of Power, December 2016) http://www.cea.nic.in/reports/committee/nep/nep_dec.pdf

[49] *Renewable Energy: Technologies and Global Markets* (Research and Markets, 2015) http://www.researchandmarkets.com/research/nx5352/renewable_energy

[50] *China's Global Renewable Energy Expansion: How the World's Second Biggest National Economy is Positioned to Lead the World in Clean-Power Investment* (Institute for Energy Economics and Financial Analysis, 2017) http://ieefa.org/wp-content/uploads/2017/01/Chinas-Global-Renewable-Energy-Expansion_January-2017.pdf

[51] *Analysis: Just Four Years Left of the 1.5C Carbon Budget* (Carbon Brief, April 2017) https://www.carbonbrief.org/analysis-four-years-left-one-point-five-carbon-budget

[52] *The Geographic Distribution of Fossil Fuels Unused When Limiting Global Warming to 2°C* (Christopher McGlade and Paul Ekins, Nature, January 2015) http://www.nature.com/nature/journal/v517/n7533/abs/nature14016.html

[53] *China's Decline in Coal Consumption Drives Global Slowdown in Emissions* (World Resources Institute, 17 January 2017) http://www.wri.org/blog/2017/01/china%E2%80%99s-decline-coal-consumption-drives-global-slowdown-emissions

[54] The latest *Quarterly Update of Australia's National Greenhouse Gas Inventory* (June 2016) showed that Australia's emissions had increased 0.8% on the previous year http://www.environment.gov.au/system/files/resources/48275b92-3f4b-44d0-aa4e-50ece408df86/files/nggi-quarterly-update-jun-2016.pdf

[55] *Most Vulnerable Commit to Stronger Climate Action at COP22* (Climate Vulnerable Forum, 18 November 2016) http://www.thecvf.org/climate-vulnerable-forum-commit-to-stronger-climate-action-at-cop22/

[56] *Adani's Planned Carmichael Coal Mine to Shift Millions to Cayman Islands Controlled Company* (Australian Broadcasting Corporation, 14 March 2017) http://www.abc.net.au/news/2017-03-14/adani-carmichael-coalmine-to-shift-millions-to-cayman-islands/8350704

[57] See, for example, the Kimberley Land Council's *Cultural Enterprise Hub* http://www.klc.org.au/land-sea/kimberley-land-council-cultural-enterprises

[58] *Polling Brief: Renewable Energy* (The Australia Institute, March 2017) http://www.tai.org.au/sites/defualt/files/Polling%20Brief%20-%20March%202017%20-%20Renewables_1.pdf

[59] *Poll Finds Coal-fired Power Not Popular with Voters* (Australian Financial Review, 27 March 2017) http://www.afr.com/news/poll-finds-coalfired-power-not-popular-with-voters-20170326-gv6zem

[60] Support for Action on Climate Change and Renewables Strongest Since 2008 (The Climate Institute, September 2016) http://www.climateinstitute.org.au/articles/media-releases/support-for-action-on-climate-change-and-renewables-strongest-since-2008.html/section/397

[61] See, for example, the *Australian Climate Roundtable* http://www.australianclimateroundtable.org.au/

[62] See, for example, the final report of the *Energy Network Transformation Roadmap* (Energy Networks Australia and CSIRO, April 2017) http://www.energynetworks.com.au/sites/default/files/entr_final_report_april_2017.pdf

[63] *Pollution and Price: The Cost of Investing in Gas* (Climate Council, 2017) https://www.climatecouncil.org.au/price-of-gas

NOTES


OXFAM
Australia
OXFAM.ORG.AU