



# Energy to reduce poverty: the urgency for G8 action on climate justice

Stop Climate Injustice

**PRACTICAL ACTION**

Technology challenging poverty





The G8 stands at a crossroads; if it makes the right choices it can invest in energy options that reduce poverty without contributing to climate change. At a time when climate change is becoming central to international energy policy, it is counter-intuitive for the G8 and World Bank to be promoting a development path that will lock developing countries into fossil fuel dependency. Similarly, at a time when poverty reduction has become a global concern, it is difficult to understand why tried and tested renewable technologies that can be used in remote rural communities to lift people out of poverty are not receiving the political and financial support they deserve.

This report outlines Practical Action's experience demonstrating that small-scale renewable

energy can provide clean, appropriate and affordable energy in the world's poorest and most remote communities, helping lift people out of poverty and improving lives. It explains how such technologies can help developing countries to 'leapfrog' the fossil fuel dependent path.

The report makes the case that the G8 must start delivering such 'win-win' solutions rather than peddling fossil fuel dependency. Practical Action calls on the G8, led by the UK government, to work with the World Bank to ensure that energy policy is specifically designed and reformed to meet the needs of poor people without compromising global climate change objectives.

## Contents

<b>Energy for development</b>	<b>3</b>
<b>Mixed messages</b>	<b>4</b>
<b>Energy for poverty reduction</b>	<b>4</b>
<b>Pro-poor, clean energy – the path to a low carbon future</b>	<b>5</b>
<b>Decentralised energy solutions</b>	<b>6</b>
<b>Delivering the solutions the World Bank's 'leadership role'</b>	<b>7</b>
<b>The shadow in the light of the candle</b>	<b>8</b>
<b>Conclusions &amp; policy recommendations</b>	<b>8</b>
<b>References</b>	<b>10</b>



Heads of State of the Group of Eight (G8 – the UK, USA, Germany, France, Russia, Japan, Canada and Italy) gather in Germany for their annual meeting in June 2007. As some of the world's most powerful countries, the G8 sets the international agenda. It has raised the profile of two of the world's most pressing issues – tackling global climate change and reducing poverty, especially in Africa. Both are high on the international agenda and both have become standing items at the G8.

However, while the G8 have positioned themselves as the champions of climate change and poverty reduction, Practical Action believes the reality is very different. Not only have the G8 been decidedly inconsistent in their climate change commitments (see box on p.4), they have also overseen large increases in World Bank funding for fossil fuels rather than focussing investment on renewable technologies, which are widely regarded as the future of low carbon development (see p.7).

This increased support for fossil fuels could threaten international commitments to keep the increase in global temperatures below a 2°C threshold, which is widely accepted as necessary to stop the worst effects of climate change. It will also threaten future attempts to cut global carbon dioxide (CO<sub>2</sub>) emissions by 25% below current levels by 2050, called for by the Stern Review.<sup>1</sup> It is hard to see how the expansion of fossil fuel use

overseen by the G8 could lead to the global energy sector, currently about 80% fossil fuels,<sup>2</sup> being as much as 75% decarbonised by 2050.<sup>3</sup> And it is even harder to see that this is consistent with emissions peaking in the next 10-20 years and then falling by 3% per year.<sup>4</sup>

But the expansion of fossil fuels not only affects international climate change commitments. It could jeopardise the future delivery of the Millennium Development Goals which pledge to lift out of poverty the 2.7 billion people currently living on less than \$2 a day. There are two reasons for this. Firstly, poor people are the most vulnerable to climate change, with droughts, floods and severe weather events affecting them first and worst. Secondly, poor people do not have access to energy and without access to energy it is not possible to escape poverty.<sup>5</sup> While it is anticipated that developing countries might need to increase their energy use by as much as five times in order to grow and develop,<sup>6</sup> the expansion of fossil fuel extraction and use will not necessarily help the poorest and 'hardest to reach'.

Practical Action believes that the delivery of the Millennium Development Goals cannot be achieved until energy access is extended to poor communities. Our experience shows that this can be done without exacerbating climate change. However, to do so will require targeted programmes which are currently not being developed because precious resources are being used to subsidise the fossil fuel industry. We believe that the G8 is at a crossroads. It has a choice – either business as usual or the redoubling of efforts to ensure that developing countries have access to the technology, finance and technical know-how to follow a development path which promotes low carbon energy solutions.

### Energy for development

There are currently massive inequalities in global energy access. According to the World Energy Council (WEC), the 20% of the world's population who live in industrialised countries, slightly more than one billion people, consume nearly 60% of the world's energy supply. Meanwhile, about 27% of the world's population has no access to electricity – in Africa, only 15% of the population has electricity<sup>14</sup> and in South Asia, only 40% have electricity.<sup>15</sup> Four out of five people in rural areas live without electricity.<sup>16</sup>

Practical Action believes that addressing these inequalities is critical and we fully support the call by developing countries that they have a right to expand their energy use for development, even if this means increasing their emissions in the

### G8 mixed messages

At the G8 in Gleneagles in 2005 climate change was made a priority. The resulting communiqué acknowledged the critical link between providing energy access to the poor and meeting the Millennium Development Goals. It also committed the G8 governments to "substantial reductions in greenhouse gas emissions" and "the promotion of low-emitting energy systems." They also accept that "the world's developed economies have a responsibility to act".<sup>7</sup>

In contrast however, when Russia assumed the G8 Presidency in 2006, the final communiqué commits the G8 to "expand the hydrocarbon proven reserves in a way that would outpace their depletion" and encourages the "construction and development of hydrocarbon-processing facilities".<sup>8</sup> Although the communiqué does go on to reaffirm the G8's support for action on climate change, the overriding focus is clear – it is business as usual for energy policy.

A similar inconsistency can be seen in UK government policy. The UK recognises that "climate change poses the most serious long term threat to development and the Millennium

medium term. In addition, the bulk of historical carbon emissions, the main cause of unavoidable climate change, have been produced since the industrial revolution by developed nations. As such, Practical Action believes that the rich countries of the world have a moral responsibility to shoulder the burden of cutting emissions, thereby allowing developing countries the opportunity to develop.

However, Practical Action is seriously concerned that developing countries might follow a development path which is dependent on the burning of fossil fuels. Trends in funding show that between 1994 and 2001, 90% of public and private capital flows to new power plants in developing countries went to large scale coal and natural gas projects.<sup>17</sup> According to the Stern Review, the choice of development path that developing countries use over the next 10-20 years is critical in order to "avoid the risks of locking into a high-carbon infrastructure".<sup>18</sup> The G8, World Bank and other international institutions must make sure that developing countries do not follow the "carbon-intensive development path... of their developed country counterparts".<sup>19</sup> Locking developing countries into fossil fuel dependency is counter-intuitive in an era of climate change. The development, therefore, of low carbon energy technologies, especially renewable energy

Development Goals".<sup>9</sup> The Department for International Development (DFID), however, continues to argue that oil extraction can have positive economic development impacts, and in a recent letter to a British NGO states that "oil, gas and mineral resources can and should make a major contribution to poverty reduction and sustained economic growth".<sup>10</sup> Though the World Bank has been unable to put forward a single example of an oil project that had alleviated poverty,<sup>11</sup> when they reviewed their policy on 'extractive industries' (such as oil and gas), DFID was one of the voices opposing the phase-out of investment in oil.<sup>12</sup>

Practical Action believes that this lack of leadership from the G8 is disappointing. As the Stern Review remarks, "The shift to a low carbon global economy will take place against the background of an abundant supply of fossil fuels".<sup>13</sup> We would urge the G8 to resist this temptation and call on them to reconsider their position supporting the continued exploration and extraction of fossil fuels. Practical Action calls on the G8 to phase out support for fossil fuels and transfer funding towards renewable technologies.

technologies such as wind and hydro, must be a core component of developing country energy strategies. This approach could not only help developing countries avoid 'lock-in' but could even encourage them to do the converse – to 'leap frog' heavy fossil fuel dependency altogether.

### Energy for poverty reduction

However, 'energy for development' does not necessarily equate to 'energy for poverty reduction'. Despite the projected increases in energy demand in developing countries, the World Energy Outlook estimates that by 2030, roughly 1.4 billion people will still not have access to electricity and over 2.6 billion people will continue to rely on biomass for cooking and heating.<sup>20</sup>

One of the principal reasons for this is that most investment into energy infrastructure will be focussed on 'centralised' grid-based systems. Practical Action's experience and a growing body of evidence, show that this 'centralised' model tends not to reach poor men and women.<sup>21</sup> Grid-based systems are well suited to serving either industrial areas or urban customers who can pay. Extending access to this grid infrastructure to either rural areas or to the urban poor is neither profitable nor a priority for the energy industry.



Yet, as the World Bank acknowledges, meeting the Millennium Development Goals requires getting the poor access to modern energy services.<sup>22</sup> After all, many basic human needs, such as cooking, lighting, and heating, depend on energy, as do many basic services, such as water treatment, telecommunications, schools, and health centres. Practical Action believes that poor people's lack of energy is a major obstacle which impacts on life expectancy, infant mortality, literacy, prosperity and other key human development indicators.

The World Health Organization estimates that more than three billion people still use wood, dung, coal and other traditional biomass fuels inside their homes to meet cooking and heating needs. The resulting indoor air pollution is responsible for 1.5 million deaths per year – mostly of children and mothers. In Africa, almost 80% of the population still use wood fuel and charcoal as the main supply of energy. Even when modern energy services are extended to meet the needs of the poor, the use of biomass in developing countries will continue. But Practical Action can show that simple solutions can save lives, reduce pollution and help make biomass stocks sustainable.

While Practical Action supports the extension of electricity grids, we also believe this must be complemented by targeted pro-poor energy policies which address both affordable access to electricity services and sustainable biomass fuels. Extending the electricity grid, per se, is not enough. The G8, World Bank and national governments must ensure that energy policy is specifically designed to meet the needs of poor people without compromising global climate change objectives.

### Pro-poor, clean energy – the path to a low carbon future

Pro-poor energy policy in the era of climate change does not have to be 'business as usual'. Our experience shows that energy systems can be tailored to meet the needs of 'hard-to-reach' communities not otherwise served by centralised grid based electricity systems and that this can be done without 'locking' them into a high-carbon future. Pro-poor energy policy should be founded in two key policy areas – firstly, the rapid expansion of decentralised energy systems, and secondly, the appropriate and sustainable use of biomass fuels.

Decentralised energy systems can provide a win-win solution, giving poor people access to energy in a way which doesn't contribute to climate change. Decentralised systems are usually stand alone and off-grid and can include community-scale electricity distribution or local heat networks.

## Decentralised energy solutions

### Case study 1: Tuungu Kabiri Community Micro-Hydro Project, Kenya

"I use electricity for charging batteries, cell phones and for doing women's hair at the salon and barber shop. I used to do a lot of work in the house and work on the land. Now, because of the electricity, I can have an income from doing people's hair. My children can go to school, it has made such a difference to my family; I can take care of them now. People used to have to travel 7km to charge batteries or have their hair done. Now people can do all that here in the village. There is a real community here now. Electricity is such a good thing!"

**Ester Nkonge – the local hairdresser**

This micro-hydro electricity project developed with Practical Action on the slopes of Mount Kenya generates 14 kW of power. The electricity is used by 200 households (about 1,000 people) in the local community and is entirely maintained by the community. The scheme provides electricity 24 hours a day and has enabled people to start small businesses such as hairdressing, woodworking, metal welding, battery charging and even a small hotel. Many more people benefit as they come from outside the community to use the facilities – and watch football on the television!

This scheme demonstrates both the benefits that access to modern energy can bring to poor communities, and the economic empowerment that comes from a small decentralised scheme, controlled and maintained by local people.

For more case studies and further information visit [www.practicalaction.org](http://www.practicalaction.org)

Most decentralised energy systems consist of three key elements – local power generation, local energy sources and limited transmission.

Practical Action's experience (see box above) shows that these systems are particularly appropriate for meeting the energy needs of poor people, especially those in rural locations. This is because decentralised systems are well suited to using renewable technologies such as wind, solar, and hydro, which can be deployed at small scale, often located within or near local communities. Once established they do not have any fuel costs, running off freely available natural resources, nor do they generate carbon emissions.

Practical Action's projects demonstrate that the burning of biomass fuels can be done in an efficient

### Case study 2: Renewable Energy Village, Nepal

"I used to have to use kerosene lamps for light. It's so much easier with electricity, I can tell you. For a start, when we had no money in the past we couldn't buy kerosene fuel so we just didn't see anything in the evenings – we lived in darkness. Now cooking is not so dangerous – I don't burn myself and also my children read in the evenings. We have a bit of extra money because we don't have to spend it on the kerosene. I use that extra to buy things for my children's schooling."

**Sujana Pandey – local mother with four children in school**

Extending access to electricity in the mountainous, rural regions of Nepal is particularly challenging to conventional grid-based systems. In Nepal only 27% of rural inhabitants have access to electricity. Practical Action has helped the community in Bhulmichowk, Gorkha develop a small scale decentralised energy system which combines wind and solar renewable technologies. The system feeds five houses, each with two energy efficient light bulbs, as well as one street lamp.

The people in the community now use the renewable electricity to light their homes instead of using kerosene lamps. The light is much better quality than the kerosene lamps, so the children can read and study in the evening and it's much safer to cook the evening meal because women can actually see what they're doing. As well as providing electricity, the project has also saved each family time and money. It used to cost about 250 rupees a month to buy kerosene fuel to use in lamps and this was bought in the local market, a long way down the valley. The time which was used to go and buy kerosene can now be better spent on the land growing crops, which also helps them make a better living.

and cleaner way. They show that low cost, appropriate solutions can substantially change people's quality of life even if they do not have access to electricity.

For example, in Bangladesh, Practical Action is running training courses to show people how to build improved energy efficient stoves. These stoves consume less than half the fuel of a traditional open fire, helping to preserve precious reserves of biomass. In Kenya, Practical Action has worked with Maasai women to reduce extreme indoor air pollution where average smoke levels were recorded at over 100 times the accepted international level. Practical Action helped the women develop a simple smoke hood, which can reduce smoke levels in the houses by up to 90%, saving lives and reducing pollution.

Practical Action believes that these energy solutions – decentralised energy systems and sustainable biomass fuels – can be easily replicated across the developing world. They are solutions which meet the needs of poor men and women, extending access to energy in a way which complements the drive for a low carbon future. We believe that the G8 and World Bank must seek to scale-up these types of solutions if we are to meet the twin challenges of climate change and the Millennium Development Goals.

### Delivering the solutions – the World Bank’s ‘leadership role’

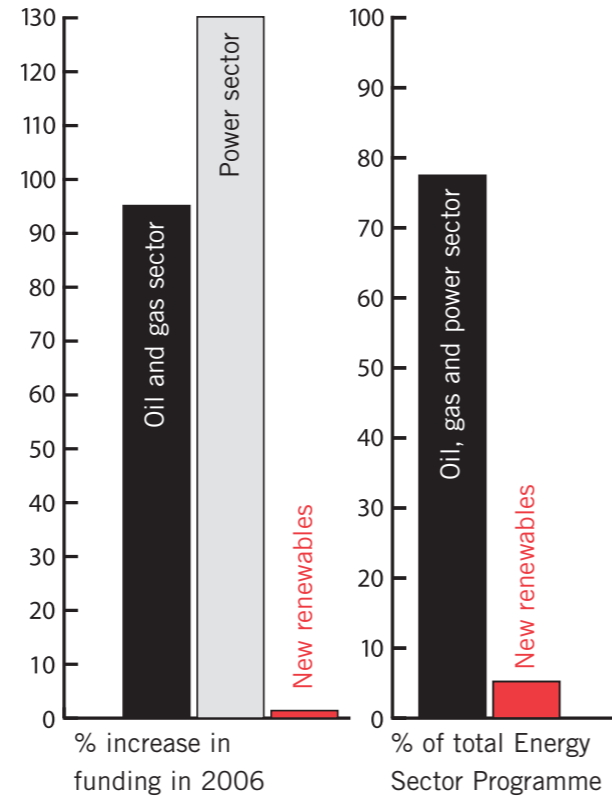
Practical Action has shown that delivering low carbon, pro-poor energy solutions which extend access to energy is possible. Delivering solutions at a scale and speed which will contribute to both climate change and poverty reduction objectives will require a substantial shift in current G8 and World Bank policy and practice. The G8 have essentially passed the responsibility onto the ‘leadership role’ of the World Bank, mandating it at the G8 Summit at Gleneagles to create “a new framework for clean energy and development, including investment and financing”.<sup>23</sup>

The World Bank’s stated aim is to reduce global poverty and improve standards of living in developing countries and the G8 governments exert a huge influence over its operations. Between them, the G8 account for 48% of the voting rights in World Bank meetings and five of the G8 Governments (USA, UK, Japan, Germany and France) have standing (rather than elected) Executive Directors.<sup>24</sup> Such is the role of the World Bank that the UK Government gives it 6% of its annual aid budget in order to deliver multilateral programmes.

The World Bank does indeed have a major role to play in delivering energy solutions to developing countries and, in their own words, is “one of the largest financiers of Renewable Energy and Energy Efficiency in developing countries”.<sup>25</sup> It has also been quick to boast that it has exceeded its own targets for increasing total spending on ‘new renewables’ (such as wind, solar, geothermal, biomass and small-scale hydropower) and energy efficiency.<sup>26</sup> However, when compared to the World Bank’s other energy investments, the total amounts are still small, as a more careful examination of the data reveals.

In 2006, the World Bank substantially increased the size of its Energy Sector Programme, raising its commitments from US\$2.8 billion to US\$4.4 billion.<sup>27</sup> The oil and gas sector received a massive 93% increase in funding, while the power sector,

which improves energy transmission, distribution and generation (usually for large scale, fossil fuel on-grid projects) increased by 130%. In comparison investment into ‘new renewables’ increased by only 1.4%.<sup>28</sup> While oil, gas and power sector commitments account for 77% of the total Energy Sector programme, ‘new renewables’ account for only 5%.



Practical Action does not believe that this prioritisation of fossil fuels over renewables represents ‘leadership’. In fact, it rather represents business as usual for the World Bank because it follows previous trends – for example, between 1992 and 2005 it committed over US\$28 billion to fossil fuel projects, 17 times more than its financing for renewable energy and energy efficiency in the same period.<sup>29</sup>

Ironically, with the money which it has invested into renewables, the World Bank has achieved some award-winning results. In 2006, a project run by Grameen Bank and Rahimafrooz Batteries Limited (RBL) in Bangladesh won the prestigious Ashden Award for its decentralised rural electrification programme. The project has installed 90,000 solar home systems into rural homes across Bangladesh, which the judges noted was “the world’s most successful solar power programme bringing electric light and power to rural people.” In addition, the World Bank’s recent publication, ‘Improving Lives’ is littered with similar pioneering case studies.

## The shadow in the light of the candle

The World Bank’s ‘Clean Energy Investment Framework’ sets out a major plan to build 20GW of new power generation capacity in sub-Saharan Africa in order to expand grid-based electrification programmes. They propose a number of “large regional hydro generation plants”, in Mali (Manantali), DRC (Inga), Mozambique (Cahora Bassa), Zambia (Lower Kafue) and Ethiopia (Tekeze and Gleigle).

Large scale hydropower (defined as anything above 100MW) appears at first sight to be a renewable and a low carbon source of energy. However, greenhouse gases are emitted by vegetation submerged by dams and because of the environmental and social consequences associated with large scale dam building it is often regarded as problematic.<sup>30</sup> While Practical Action is sympathetic to many of these wider issues, our principal

concern regarding large scale hydropower is that it often fails poor communities, especially those which are energy poor. As with many large scale schemes, electricity which is generated from them often feeds distant populations, by-passing the very people that need it most.

For example, in Nepal the majority of power is provided through medium and large scale hydropower, which provides up to 600MW from 20 dams across the country. Power transmission lines from the Marsyangali power station, Nepal’s second largest dam, pass over rural villages which have no access to electricity. Nepali people call this “battimuni andhyaro” – or, the shadow in the light of the candle

Hydropower does have a future but, as Practical Action’s case study on page 6 demonstrates, a focus on local and community owned micro-hydro schemes is more likely to lead to energy access for poor people.

Unfortunately, these types of projects remain the exception rather than the norm, but it begs the question – what could the World Bank achieve if it switched its funding from fossil fuels to decentralised energy systems? Practical Action believe that if the World Bank is really to show leadership it must significantly scale up its support for renewables, the future of a low carbon world, and phase out its support for fossil fuels.

### Conclusions & policy recommendations

Practical Action believes that developing countries have a right to grow and develop, even if this means increasing their carbon emissions in the medium term. Industrialised countries have the primary responsibility to achieve global greenhouse gas emission reductions. However, locking developing countries into fossil fuel dependency at a time when international climate change objectives are becoming central to energy policy is counter-intuitive. The development path – fossil fuel dependency or low carbon technologies – developing countries choose in the next 10-20 years is critical to global efforts to tackle climate change and to reduce poverty.

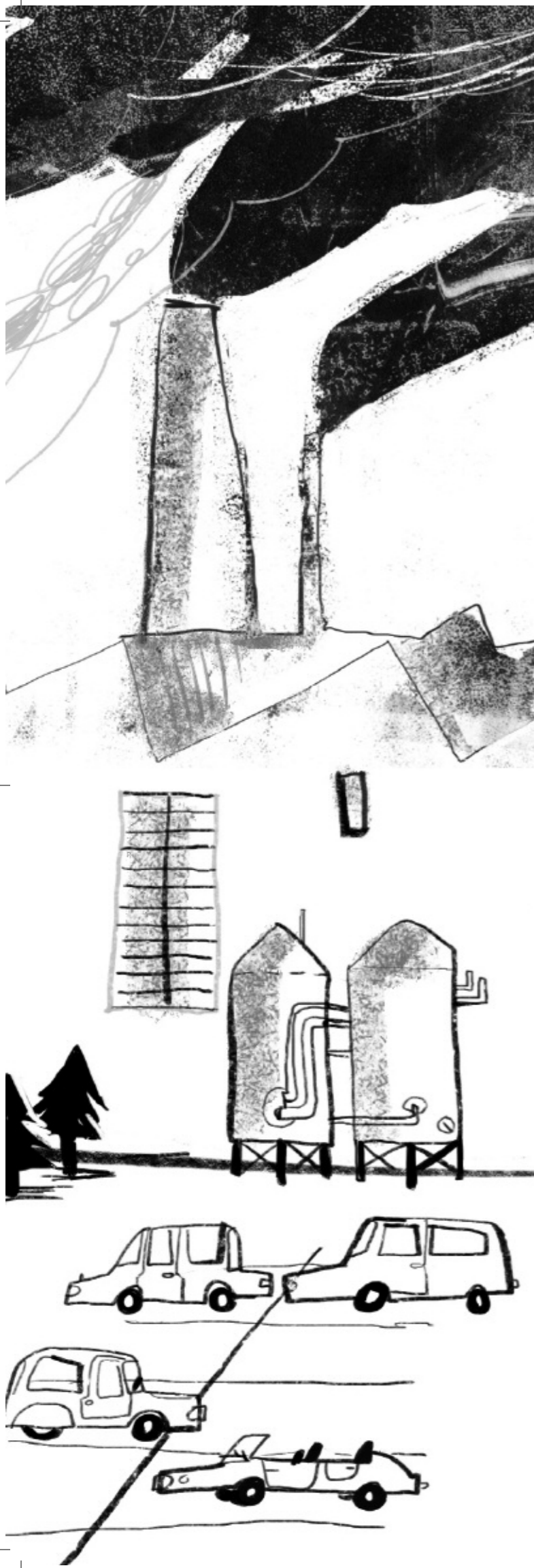
Practical Action’s experience shows that developing countries can adopt energy technologies which deliver on both climate change and poverty reduction objectives. Our projects show that decentralised energy systems which use local

renewable energy sources such as wind, solar, and micro-hydro can extend access to modern energy services to poor communities as well as putting them on a low carbon development path. In addition, decentralised energy systems are ideally suited to meeting the needs of the ‘hard-to-reach’ communities in both rural and urban areas, which are otherwise neglected by centralised grid-based systems.

Our projects also demonstrate that for the 2.6 billion people who will still be relying on biomass fuels in 2030, there are simple, cheap and appropriate solutions which can improve standards of living and save lives.

However, delivering these solutions at a scale and pace consistent with the increasingly urgent timescale to meet the Millennium Development Goals is a massive task and one which will require a significant shift in G8 and World Bank policy.

Disappointingly, and despite the rhetoric, both the G8 and World Bank have failed to meet this challenge. G8 communiqués give out mixed messages and seem to support the increased exploration and extraction of fossil fuels. Similarly, the World Bank, despite its apparent pro-poor credentials, has opted for a business as usual approach to energy policy, granting massive funding increases to the oil, gas and power sectors while only granting nominal increases to renewable technologies.



Practical Action believes that the G8 and World Bank are at a crossroads. They must redress this imbalance and redouble their efforts to deliver on their promises. We recommend that they –

- **End the use of aid money to support new large-scale fossil fuel projects**
  
- **Significantly ‘scale-up’ levels of investment into renewable technologies, especially wind, solar, and micro-hydro**
  
- **Deliver large scale rural electrification programmes based on decentralised systems**
  
- **Deliver programmes which give poor men and women access to efficient stoves and sustainably-sourced biomass fuels**
  
- **Adopt far-reaching international targets for greenhouse gas emission reductions**

1 Stern, N (2006) ‘Stern Review – The Economics of Climate Change’, Executive Summary, p.11 [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

2 IEA (2007) ‘Renewables in Global Energy Supply – An IEA Factsheet’ January 2007

3 Stern, N (2006) ‘Stern Review – The Economics of Climate Change’, Executive Summary, p.13 [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

4 Stern, N (2006) ‘Stern Review – The Economics of Climate Change’, Executive Summary, p.11 [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

5 The World Bank in fact admits this to be the case: “Accelerating access to affordable, modern energy for the poorest is critical to meeting the Millennium Development Goals (MDGs)” in World Bank (2006) ‘An Investment Framework for Clean Energy and Development: A Progress Report’, background paper for World Bank Development Committee Meeting, September 2006, p.5

6 IPCC (2001) estimate in World Bank (2006) ‘An Investment Framework for Clean Energy and Development: A Progress Report’, Background paper for World Bank Development Committee Meeting, September 2006, box 2, p.17

7 G8 Gleneagles (2005) ‘Climate Change, Clean Energy and Sustainable Development’ Final Communiqué, [www.g8.gov.uk/](http://www.g8.gov.uk/)

8 G8 St Petersburg (2006) ‘Global Energy Security’, Final Communiqué paragraphs 8-9

9 DFID (2006) ‘Eliminating World Poverty: Making Governance Work for the Poor – A White Paper on International Development’, TSO, p.91

10 Letter from Hilary Benn to People & Planet, May 2006 in ‘Fuelling the Future: Why DFID should ditch dirty development and lead the way to low carbon future’, People & Planet, October 2006, p.17

11 Kretzmann S and Nooruddin I (2006) ‘Drilling Into Debt: an investigation into the relationship between debt and oil’, Oil Change International, IPPR, Jubilee USA, p.13 <http://priceofoil.org/thepriceofoil/debtpoverty/>

12 Muttitt G and Stockman L (2005) ‘Pumping Poverty: Britain’s Department for International Development and the oil industry’, Platform Research, Friends of the Earth EWNL and Plan B, p.16 <http://planb.org/resources/pumpingpoverty/download>

13 Stern, N (2006) ‘Stern Review – The Economics of Climate Change’, Executive Summary, p.14 [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

14 PSIRU (2007) ‘Electrifying Africa: Power through the public sector’, Public Services International Research Unit, January 2007

15 Practical Action, ‘Turning off the lights – GATS and the threat to community electricity in Sri Lanka’, ITDG South Asia briefing

16 Practical Action, ‘Turning off the lights – GATS and the threat to community electricity in Sri Lanka’, ITDG South Asia briefing

17 NEF (2004) ‘Up in Smoke?’, New Economics Foundation, p.13-14

18 Stern, N (2006) ‘Stern Review – The Economics of Climate Change’, Executive Summary, p.19 [www.hm-treasury.gov.uk/independent\\_reviews/stern\\_review\\_economics\\_climate\\_change/sternreview\\_index.cfm](http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm)

19 World Bank (2006) ‘An Investment Framework for Clean Energy and Development: A Progress Report’, Background paper for World Bank Development Committee Meeting, September 2006, p.16

20 World Bank (2006) ‘An Investment Framework for Clean Energy and Development: A Progress Report’, Background paper for World Bank Development Committee Meeting, September 2006, p.42

21 For example, The World Bank admits that high capital costs are often the “chief disincentive to supplying grid electricity to rural areas”

22 World Bank (2006) ‘An Investment Framework for Clean Energy and Development: A Progress Report’, background paper for World Bank Development Committee Meeting’, September 2006, p.5

23 G8 Gleneagles (2005) ‘Climate Change, Clean Energy and Sustainable Development’ Final Communiqué, paragraph 11(b), [www.g8.gov.uk/](http://www.g8.gov.uk/)

24 US holds 13.39%, UK 5.06%, Japan 10.36%, Germany 6.64%, France 4.17% , Canada 4.25%, Italy 3.47% & Russia 0.28%. Source: World Bank Annual Report 2006 Online

The UK contributed £272.2 million to the World Bank in 2005/06, approximately 6% of DFID’s total aid budget of £4,413 million

25 ‘Renewable Energy & Energy Efficiency – Portfolio at a Glance’, World Bank website.

26 ‘Renewable Energy & Energy Efficiency – Issues Brief’, World Bank website <http://tinyurl.com/29dq2>

27 World Bank (2006) ‘An Investment Framework for Clean Energy and Development: A Progress Report’, Background paper for World Bank Development Committee Meeting, September 2006, p.42

28 Spending on ‘new renewables’ increased from US\$218 million to US\$221 million in 2005/06. Spending on energy efficiency increased from US\$243 million to US\$447 million. In World Bank (2006) ‘Improving Lives: World Bank Group Progress on Renewable Energy and Energy Efficiency in Fiscal Year 2006’, December 2006 Annex 2

29 SEEN (2005) ‘Key Facts on the G8, World Bank and Climate Change, Sustainable Energy and Economy Network’, Institute for Policy Studies. [www.seen.org/pages/keyfacts.html](http://www.seen.org/pages/keyfacts.html)

30 See World Commission for Dams [www.dams.org/](http://www.dams.org/)



Designed by: Ideas. This is printed on recycled paper.

**For further information please visit [www.stopclimateinjustice.org](http://www.stopclimateinjustice.org) or email [campaigns@practicalaction.org.uk](mailto:campaigns@practicalaction.org.uk)**

Whilst stories are true names have been changed to protect the identity of individuals.

Practical Action is an international development agency working with poor communities to help them choose and use technology to improve their lives today and for generations to come.

Practical Action, The Schumacher Centre for Technology and Development, Bourton on Dunsmore, Rugby, Warwickshire CV23 9QZ, United Kingdom  
T +44 (0)1926 634400 | F +44 (0)1926 634401 | E [practicalaction@practicalaction.org.uk](mailto:practicalaction@practicalaction.org.uk) | W [www.practicalaction.org](http://www.practicalaction.org)

Practical Action is the working name of Intermediate Technology Development Group Ltd. Registered Charity No 247257