

Energy in the Post-2015 Development Framework

Authors: Dr Sarah Wykes (CAFOD), Ben Garside (IIED) and Aaron Leopold (Practical Action)

Contributing authors: Karima Hirji, Dr Lucy Stevens (Practical Action)





Sinteyo Legei is part of a women's cooperative group in Leparua, Isiolo County, Kenya. CAFOD partner Caritas Isiolo has supplied the group with a greenhouse and a solar powered pump, as well as training in how to grow tomatoes. She says: "I am very hopeful for the future, despite all the challenges. I believe we'll be able to reduce hunger among the community, and the greenhouse allows us to do that. We are able to earn a living out of the greenhouse throughout the year, with or without rains." © CAFOD, May 2014.

Recommendations

1. Access to affordable and reliable energy services is crucial to the success of the post-2015 development framework. Shifting to more sustainable and efficient energy systems globally is also crucial for tackling climate change – the most serious threat to future poverty eradication.
2. The dual focus of the *Sustainable Energy for All* (SE4ALL) initiative – promoting universal energy access and a shift to low or zero carbon energy production globally – should be supported. SE4ALL could form the basis of a standalone energy goal. The broad development impacts of energy poverty also make integrating energy targets and indicators in other goal areas crucial.
3. Any energy goal requires a meaningful and holistic definition of 'access' that can capture development outcomes including gender equality. This requires a 'total energy access' approach, rather than one that merely measures grid connection. The package of energy and cooking services included in Tier three of the SE4ALL *Global Tracking Framework* should be the baseline for measuring access. Concrete targets and indicators are also needed to address the gendered aspects of energy poverty.
4. Increased financial, political and technical support for decentralised, low or zero carbon technologies is critical. Financing energy services for the poorest also requires a combination of innovative public-private partnerships, along with social enterprise initiatives and national government investment.
5. More finance and technological solutions alone will not guarantee success: a 'bottom up', participatory approach to designing and delivering services is also crucial. The post-2015 framework must also recognise the role played by the public sector and civil society in delivering energy to the poorest.
6. The current SE4ALL targets on renewables and efficiency must be increased to incentivise sufficient action by 2030 to prevent dangerous climate change. This requires greater investment plus removal of incentives for fossil fuel production and consumption, with adequate protection for poor and vulnerable groups. Poorer countries must also have the means of implementation to incentivise adoption of low or zero carbon energy systems.

Ending energy poverty requires a holistic approach to development

As the post-2015 discussion has recognised, reliable and affordable access to energy for lighting, heating, cooking, mechanical power, transport and telecommunications is fundamental to achieving poverty eradication and broader sustainable development.¹ Approximately one in five people in the world lack access to electricity (see Box 1). Access to low or zero carbon energy services also increases poor people's resilience to shocks caused by environmental degradation and climate change which, left unchecked, will make future poverty eradication impossible.

In summary, shifting to low or zero carbon energy is crucial to ending energy poverty, ensuring long-term energy security and avoiding dangerous climate change globally.

Progress in many development areas is intrinsically linked with access to energy.² Thus a comprehensive and integrated approach to energy under the post-2015 framework – rather than isolating it within an energy goal – would be the most effective. For instance, rather than having a water goal focusing on water services for schools and health facilities, and an energy goal that does not mention them, there should be targets across different goal areas to promote universal access to modern infrastructure services for schools, health facilities and households. This would incentivise actors in different sectors to work together, leading to coherent and comprehensive action, and cross-sectoral buy-in.³

Box 1: Energy poverty in numbers⁴

Worldwide:

- 2.8 billion people rely on inefficient and polluting cooking fuels and technologies.
- 1.2 billion – 1 in 5 – have no electricity access.
- 1 billion have intermittent access.

In least developed countries:

- 4 out of 5 people have no electricity connection in their home.
- 9 out of 10 people (73% of urban dwellers and 97% of rural dwellers) have no access to modern fuels for cooking.

Is progress stalling on access for the poorest?

- In low-income countries, access to non-solid cooking fuel rose only by 2% – from 7% to 9% – between 1990 and 2010.
- The International Energy Agency estimates that the number of people without access to electricity will fall marginally between now and 2030 – to 1 billion – with sub-Saharan Africa overtaking Asia as the region with the largest deficit. The total number of people without access to non-solid cooking fuels will remain largely unchanged.

However, if the post-2015 framework retains the sector-focused, standalone goal structure of current discussions, any energy goal should take as its starting point the three targets outlined in the *Sustainable Energy for All* (SE4ALL) initiative. SE4ALL's three objectives by 2030 are to: ensure universal access to modern energy services; double the global rate of improvement in energy efficiency; and double the share of renewable energy in the global energy mix. There is already momentum behind the initiative and the comprehensive

nature of its targets has the potential to achieve both climate protection and development impact.

However, to ensure sufficient and meaningful action on energy poverty and climate change by 2030, more ambitious targets and better indicators are needed. Additional targets and indicators to capture crosscutting development issues (so-called 'nexus issues') are also required. An energy goal should also include a target on removing incentives for fossil fuel production and consumption with adequate protection for poor and vulnerable groups.

Universal energy access: focus on development outcomes and tackle inequalities

The post-2015 process should move beyond access defined as basic household energy to a 'total energy access' approach where households, enterprises and communities have sufficient, reliable and affordable access to the full range of energy supplies and services required to eradicate poverty and support sustainable development.⁵ This requires indicators to measure the affordability, quality and reliability of energy services provided to end-users, rather than ones that merely capture energy supply through grid connection or megawatts of power generated.⁶

The SE4ALL *Global Tracking Framework's* 'tier three' indicators should be the minimum standard to qualify as having 'access to modern energy services'. Tier three comprises a low but adequate level of electricity available for eight hours a day, a package of energy services including lighting, phone charging, radio and television, an electric fan and food processing applications. For cooking, it would mean at least the use of a rice cooker and good quality solid fuel stove which meet a set of requirements for maintenance, convenience and appropriateness to end-user needs.⁷ Tier three thus has an outcome-based approach looking at quality of service. It also holistically addresses poor people's energy needs through a basic but respectable package of wider energy and cooking services. Further indicators are also needed to ensure progress in crosscutting development areas such as health, education, gender and so on.⁸ Access in rural areas should also be prioritised to address urban-rural disparities in provision of energy services.⁹

Women and girls are particularly vulnerable to health problems and early mortality related to dirty cooking and heating fuels, making up the majority of adult deaths from indoor air pollution.¹⁰ Investments in women's access to energy services for enterprise development can also play a crucial role in their economic empowerment. As women spend a high proportion of their earned income improving the health, education and wellbeing of their families, empowering women economically results in wider, inter-generational development benefits.

The post-2015 development agenda must therefore recognise and address the structural gender inequalities within energy-poor groups.¹¹ Concrete indicators to promote gender budgeting in energy planning; increased collection and analysis of disaggregated data on energy and gender; and inclusion of gender awareness in energy governance are all required to address the disproportionate impacts of energy poverty on women and girls.¹²

Greater investment in decentralised, innovative and 'bottom-up' approaches

Energy poverty and the range of crosscutting issues within the post-2015 development agenda cannot be meaningfully addressed without increased financial, political and technical support for decentralised (off-grid) energy provision. This is particularly the case with electricity. It is more feasible, sustainable and cost-effective to connect many rural populations – who form the vast majority of the energy poor – to off-grid energy sources than to grids. In such contexts, grid electricity can be slow to deploy, is prohibitively expensive and often unreliable, provides minimal long-term employment, and is mostly dependent on fossil fuels.¹³

According to the International Energy Agency (IEA), to reach the target of universal access by 2030, at least 55 per cent of new electricity generation will have to come from decentralised (mostly renewable) energy sources.¹⁴ Overall, between US\$65 and \$86 billion per year of additional investment are required to achieve the goal of universal energy access by 2030.¹⁵

Financing energy services for the poorest usually requires a combination of public-private partnerships, social enterprise initiatives and national government investment. Increasingly, social enterprises and small and medium enterprises are employing innovative finance mechanisms, including carbon finance (largely through the voluntary market), crowdfunding and investment from angel investors.¹⁶ The design of payment systems for affordability and to suit local end-users' preferences is also essential, including pay-as-you-go models and flexible payment schedules. Government incentives might include tax breaks, reduction of import duties, and public procurement programmes, while social protection schemes may serve an important purpose in meeting the needs of the very poorest.¹⁷

However, more finance and technological solutions alone will not guarantee success. Adopting a truly 'bottom up', participatory approach to designing and delivering services is crucial. It ensures that the real energy needs and wants of end-users are met and services are appropriate for varied socio-cultural contexts.¹⁸ The post-2015 development agenda must support the development of methodologies to enable poor men and women and civil society to engage as active participants in energy decision-making, and recognise that a 'one-size-fits-all' approach is extremely unlikely to result in effective scaling-up of services.

Supporting the shift to sustainable energy globally

The increase in energy supplies required to achieve universal access should not increase the threat from climate change.¹⁹ However, transforming energy systems within the lifespan of the post-2015 development framework is vital for combating climate change – the major threat to poverty reduction and sustainable development. In addition, dependence on fossil fuel imports for generating large-scale electricity makes poorer countries particularly vulnerable to fossil fuel price volatility.

'Leapfrogging' to low or zero carbon energy systems can thus result in 'win-win' situations for both poor people and the planet.²⁰ In terms of cooking services, for instance, increasing access to improved stoves and modern fuels can reduce the use of unsustainable biomass, and hence deforestation, as well as reducing black carbon emissions. At the same time decrease household costs and the drudgery of fuel collection.²¹

Ramping up investment in renewable energy and efficiency globally also makes economic sense: an increase in energy efficiency investments to US\$500 billion annually to 2030, for example, would likely return twice as much to investors through reduced energy bills. The potential for job creation from modern renewable energy is also large. Such sources provide only 10 per cent of total energy supply today but in 2013 approximately 6.5 million people were already employed in the renewable energy industry worldwide.²²

Action to cut emissions and support poor people to adapt to existing climate change impacts must be 'mainstreamed' throughout the post-2015 framework by making targets and indicators climate change-resilient. Under any energy goal, targets on renewables and efficiency must incentivise sufficient action to keep global warming in check by 2030 – that is, keeping well below the agreed 2°C warming limit.²³ This means increasing the current SE4ALL 2030 targets. Tripling the current annual global rate of improvement in energy intensity (energy/unit GDP) to at least 4.5 per cent is needed, along with tripling the share of renewables to at least 45 per cent of all primary energy use and energy infrastructure.²⁴ These targets must also integrate adequate social and environmental safeguards, ensuring the poorest have energy services appropriate for their needs.²⁵

Finally, the post-2015 framework should incentivise the shift to sustainable energy globally by supporting the removal of fiscal incentives for the production and consumption of fossil fuels, with adequate protection for poor and vulnerable groups, and transparent reporting of all fossil fuel subsidies. This must go hand-in-hand with means of implementation to ensure poorer countries have sufficient resources and technical support to incentivise adoption of low or zero carbon energy systems.



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- 1** See for instance the UN Open Working Group on the SDGs *Focus Areas Document* of 19 March 2014 (http://sustainabledevelopment.un.org/content/documents/3402Focus_areas_20140319.pdf) and the UNTST Issues Brief on Energy (http://sustainabledevelopment.un.org/content/documents/2077Energy_Brief_Final_16_Oct.pdf). The Technical Support Team (TST) is co-chaired by the Department of Economic and Social Affairs and the United Nations Development Programme. Contributors to this brief included: UNEP, UN-WOMEN, UNDP, ESCAP, World Bank, DESA, UN-Habitat, OHRLLS, UNIDO, FAO, CBD, IFAD, UNFF, WMO, WHO, ESCWA, UNESCO and UN-Energy.
- 2** As outlined in the Open Working Group Co-chairs *Focus Areas Document* (see previous note), these 'nexus' areas include: food security, education, health, water, gender equality, sustainable consumption and production, and climate change.
- 3** The benefits of such an approach are highlighted in a recent briefing by the Stockholm Environment Institute which argues that the current top-down approach to the SDGs is leading to long lists of proposed goals with redundant, and sometimes conflicting, targets. As with some donor initiatives, top-line goals handed down to ministries often create perverse incentives to pass responsibility to other actors rather than tackle complex policy issues. Weitz, N., Huber-Lee, A. Davis, M. and Hoff, H. 2014. *Cross-sectoral integration in the Sustainable Development Goals: a nexus approach*. Stockholm Environment Institute, Stockholm.
- 4** Best, S. 2013. *Shaping a global goal on energy access that leaves no one behind*. International Institute for Environment and Development, London. See <http://pubs.iied.org/17183IIED.html>.
- 5** See <http://practicalaction.org/totalenergyaccess>.
- 6** Energy services are the use you can make of an energy supply including lighting, cooking, water heating, space heating and cooling, and the use of information and communication technologies. Practical Action. 2010. *Poor People's Energy Outlook*. Practical Action, Rugby, UK. See www.practicalaction.org/ppeo2010.
- 7** See www.worldbank.org/en/topic/energy/publication/Global-Tracking-Framework-Report.
- 8** For instance, a target around reducing exposure to indoor air pollution as proposed under the 'health' focal area.
- 9** Best, S. 2013. *Shaping a global goal on energy access that leaves no one behind*. International Institute for Environment and Development, London. See <http://pubs.iied.org/17183IIED.html>.
- 10** In reference to the publication of the World Health Organisation (WHO) 2014 report of the Ambient Air Pollution (AAP) database, Dr Flavia Bustreo, WHO Assistant Director-General Family, Women and Children's Health stated, 'Poor women and children pay a heavy price from indoor air pollution since they spend more time at home breathing in smoke and soot from leaky coal and wood cook stoves.' IBN live. 8 May 2014. 7 million premature deaths linked to air pollution. See <http://ibnlive.in.com/news/7-million-premature-deaths-annually-linked-to-air-pollution/470413-17.html>.
- 11** See www.energia.org.
- 12** See also WHO press release 25 March 2014: www.who.int/mediacentre/news/releases/2014/air-pollution/en/.
- 13** International Energy Agency. 2011. Energy For All: Financing access for the poor. In: OECD/IEA. 2011. *World Energy Outlook 2011*. IEA, Paris.
- 14** Ibid, p.487. This is estimated to require investment of between US\$36-41 billion per year. Dentener, F., Gielen, D., Grubler, A., Jewell, J., Klimont, Z., Krey, V., McCollum, D., Pachauri, S., Rao, S., Riahi, K., van Ruijven, B., van Vuuren, D. P. and Wilson, C. 2012. Energy Pathways for Sustainable Development. In: GEA. 2012. *Global Energy Assessment: Toward a Sustainable Future*. Cambridge University Press, Cambridge, UK and New York, NY, USA and the International Institute for Applied Systems Analysis, Laxenburg, Austria 1203-1306
- 15** Pachauri, S., van Ruijven, B.J., Nagai, Y., Riahi, K., van Vuuren, D.P., Brew-Hammond, A. and Nakicenovic, N. (2013) Pathways to achieve universal household access to modern energy by 2030, in *Environmental Research Letters*, 8 (2013) (7pp). Available at: <http://iopscience.iop.org/1748-9326/8/2/024015/article>.
- 16** Other initiatives utilise a combination of public and private finance, and deploy a combination of start-up grants, risk guarantees, and capacity building to deliver the necessary support to enterprises.
- 17** Best, S., Rai, N. and Wilson, E.. Forthcoming. *Sharing the load: Public and private finance for pro-poor modern energy services*. International Institute for Environment and Development, London.
- 18** See for instance Catholic Agency for Overseas Development and International Institute of Environment and Development. 2013. *Designing energy services that work for people living in poverty*. CAFOD, London. See www.cafod.org.uk/Media/Files/Resources/Policy/Energy-models.
- 19** It is estimated that achieving universal access to energy by 2030 would only increase current global energy demand by an estimated 1% and CO2 emissions by 0.6%. International Energy Agency. 2011. Energy For All: Financing access for the poor. In: *World Energy Outlook 2011*. IEA, Paris.
- 20** See Christian Aid. 2011. *Low Carbon Africa: Leapfrogging to a green future*. Christian Aid, London.
- 21** See www.cleancookstoves.org/the-alliance.
- 22** International Renewable Energy Agency. 11 May 2014. Renewable energy provides 6.5 million jobs globally: Sector shows significant job growth over 2012, new IRENA review highlights. IRENA website. See www.irena.org/News/Description.aspx?NTyp e=A&mnu=cat&PriMenuID=16&CatID=84&News_ID=360.
- 23** According to the World Wide Fund for Nature (WWF), the post-2015 framework should have a target for 'Energy policy [to support] a scenario to meet the range of 655 to 815 GtCO₂eq between 2012 and 2050 in line with the global carbon budget to not exceed 1.5 degrees.' World Wide Fund for Nature. 2014. *Targeting a sustainable future: Input to the OWG SDG Priority Goals and Targets*, 29 January.
- 24** WWF states that to achieve a 100% renewable energy sector by 2050, 42% renewable energy is needed by 2030, with far more rapid renewable energy expansion from 2030 to 2050. Ibid.
- 25** If fossil fuel or hybrid alternatives are more efficient in terms of local availability and cost, pushing poor rural people to adopt renewable energy can lead to unsuitable energy access, in terms of long-term affordability and availability. However, if social and environmental goals are integrated from the outset, through the right policy incentives and legal frameworks, established rural energy sources (wood and charcoal) can become environmentally sustainable and renewable technologies can be made affordable, creating 'win-wins'. Best, S. 2013. *Shaping a global goal on energy access that leaves no one behind*. International Institute for Environment and Development, London. See <http://pubs.iied.org/17183IIED.html>. Also Bass, S., Raworth, K. and Wykes, S. 2014. *Securing social justice in the green economy*. Catholic Agency for Overseas Development and International Institute for Environment and Development, London.

For further information please contact:

Dr Sarah Wykes

Lead Analyst Climate and Energy
Catholic Agency for Overseas Development (CAFOD)
Email: swykes@cafod.org.uk

Ben Garside

Researcher, Sustainable Markets Group
International Institute for Environment and Development
(IIED)
Email: Ben.garside@iied.org

Aaron Leopold

Global Energy Advocate
Practical Action
Email: Aaron.Leopold@practicalaction.org.uk

Design: Alex Quero
Email: alex.quero@mac.com
www.alexquero.co.uk



www.cafod.org.uk

Romero House
55 Westminster Bridge Road
London, SE1 7JB, UK
Tel: +44 (0)20 7733 7900

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