

At issue: The World Bank's new energy strategy

An overdue rethink

As the World Bank prepares to revise its energy strategy, Oliver Johnson of the Sussex Energy Group (Science and Technology Policy Research Unit, University of Sussex), reviews the Bank's chequered history in this sector. The conflicting agendas for energy are drawn out, and principles suggested to guide the Bank's support for low-carbon development.

For the past decade, energy sector lending in the World Bank has suffered an identity crisis. In light of limited private investment, low access to modern energy services and growing concern over climate change, the Bank has struggled to achieve a coherent approach. In an attempt to rectify this, over the next year the Bank will formulate a new energy strategy that aims to ensure its relevance as an energy lender.

In the early 1990s, the Bank's energy sector lending was made conditional on policy reforms in line with the organisation's preference for free-market approaches. Based upon the model implemented in England and Wales and in some parts of the United States and Latin America, reforms were geared towards restructuring and privatising state-owned electricity utilities in order to try to improve efficiency through competitive wholesale electricity markets. Despite the questionable applicability of this model in countries with different histories, private sector experience and institutional capacities, the dire need within developing countries for financial assistance to resuscitate their failing electricity sectors left them in no position to negotiate the terms and conditions of energy sector loans. As a result, Bank-sponsored reforms were attempted across the developing world throughout the 1990s.

By the turn of the century it was clear that, in most cases, the Bank's dogmatic approach to reform had failed to deliver expected improvements. Generic reforms and dependence on foreign consultants often led to limited local understanding of, and commitment to, reform. Implementation was further hindered by the decline of private sector investment in the wake of the 1997 East Asian financial crisis. The result was continued deterioration of already underperforming state-owned electricity companies and increasing distrust of reform. The impact of reform on poverty reduction also became a cause for concern. Even where private sector participation had occurred, expanding access to non-industrial consumers had been considered unprofitable. Stark figures for household access levels, such as 2 billion people worldwide without access to electricity, were difficult to ignore. In addition, the World Commission on Dams, established in 1997, continued to voice concern over loans for large hydropower projects to which reforms were often tied.

In an attempt to patch up the holes in its energy strategy, the Bank published a number of additional strategy papers and operational guidance notes. These encompassed the environment, infrastructure lending, the role of the public sector and the need to take local context into account. In response to growing concerns over climate change, donors such as the UK created two climate investment funds (CIFs) in 2008 to finance low-carbon technologies and new approaches to mitigating climate change. Despite the poor track record of the Bank in this area, the Bank was chosen to administer the funds. However, this piecemeal approach to energy sector lending has significantly hindered the effectiveness of the Bank. Without a coordinated energy strategy the Bank's lending has lacked focus, drifting from one issue to another. In light of this, the Bank has finally decided to resolve the issue by attempting to create a single

coherent energy strategy. Given the myriad pressures on the Bank from various stakeholders, if such an attempt at better coherence is to lead to greater relevance, the Bank must reconcile some very divergent agendas.

Balancing multiple agendas

The World Bank is first and foremost a lending institution - its customers are its borrowers and it must respond to client demand in order that its lending is relevant. However, the Bank is also accountable to its shareholders - member countries - who, in turn, are accountable to their tax-paying populations. This might seem like a 'simple' case of being pulled in two directions. But the complexity of networks connecting Bank member states to client countries via NGOs, civil society organisations, international consultants, international organisations and bilateral donor agencies further complicates the situation. On top of that, historical dependence on Bank funds, particularly in the energy sector, adds a power dimension to relations between the Bank and recipient countries.

Under these circumstances, designing a coherent and relevant energy strategy will be quite a challenge. Below, I sketch four key agendas the Bank needs to address (although there may be many more): the use of 'clean' energy; the desire for security of supply; the need for access expansion; and the requirement that projects be 'bankable'.

Clean energy

Activities to reduce the effects of climate change are split between mitigation of its impacts by reducing greenhouse gas emissions (particularly CO₂) and adapting to the impacts through, for instance, development of drought resistant crops. As far as energy is concerned, the issue is primarily mitigation through reduced CO₂ emissions from energy supply (although adaptation is also an issue for hydropower as rainfall patterns vary). Given the projections for a huge increase in global energy demand over the next 20 years to meet the needs of many developing countries, low-carbon development (development based on low CO₂ emitting energy supplies) is a crucial objective if climate change is to be mitigated.

Some of the Bank's member states are already advocating the mainstreaming of low-carbon development: DFID has recently called for 60 per cent of the Bank's energy portfolio to fund 'clean' energy technologies. The Bank's own climate funds, such as the Clean Technology Fund under the umbrella of the CIFs, are expressly designed to fund clean energy projects. While these are welcome developments, the definition of 'clean' is still highly ambiguous. Within the CIFs, 'clean' seems to imply 'cleanest available': if coal is locally abundant and technologies that reduce the environmental impact of coal-fired power stations are available, then it is considered to be a valid option. This could be a sensible solution in some contexts but, bearing in mind that energy infrastructure is a long-term investment that influences other energy

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technology decisions, there is a real danger of carbon 'lock-in'. This lock-in arises when development of infrastructures, managing organisations, institutions and cultural practices to support a technology perpetuates the use of that technology. Any lock-in to a fossil fuel trajectory is likely to significantly disadvantage developing countries in the long-term as it is reasonable to assume they will be required to make greater emissions cuts later on.

Supply security

Low-carbon development can clash with security of supply. The need for system rehabilitation, coupled with limited government financial and human capacity, means that low-carbon development is often of low national priority. With many developing countries facing power crises in recent times, security of supply and regional integration are arguably of more immediate importance to national economy and access expansion needs than low-carbon development. Of course, many of the recent power crises were the result of an over-reliance on one energy source - hydropower, for example, where prolonged droughts meant empty reservoirs and so dramatically reduced generating capacity. One obvious way forward is to develop diverse resources and implement them in different ways - some connected to the national grid, others in stand-alone installations or on mini-grids. While this does not automatically mean low-carbon development, diversity does imply more than fossil fuel-based generation; indeed, some low-carbon technologies may be more easily applied in off-grid (or mini-grid) contexts than carbon-intensive technologies.

Access expansion

In addition to maintaining security of supply to enhance industrial growth, there is the key developmental issue of access expansion. This is a major concern for the Bank, given its poverty reduction mandate. The Bank is funding a number of projects that involve creating rural electrification – or energy – agencies to facilitate access expansion, and ambitious grid extension projects are being written into power system master plans (PSMPs). But interestingly, PSMPs tend to emphasise use of large-scale generation projects to exploit hydro and thermal potential and regional integration of grid networks. Whilst a stable grid serving the entire population might be an attractive long-term goal, rarely has such distributional equity been achieved. More often than not, grid extension programmes have failed to reach the rural poor because they have not always proven to be the most cost-effective means of expanding access to rural areas, mainly due to low population density and greater technical losses as transmission networks increase. Off-grid low-carbon technologies can be particularly suitable for providing electricity services in rural areas because of their decentralised nature. It has been argued that decentralised systems can be locally designed to match the specific needs of different rural communities. They also have low operational costs and can help avoid the high costs associated with transmission and distribution grids. The possibility of adopting off-grid low-carbon technologies is particularly important in light of the limited success of conventional rural electrification programmes that have been designed to meet energy needs in developing countries.

'Bankable' projects

Finally, the mobilisation of private investment is still very important and Bank funding can play a key role in leveraging it. Private investors look to fund 'bankable' projects – projects with low risk and quick returns. The result is a bias toward established fossil fuel technologies. Given

this bias, when the Bank aims to leverage private sector investment its funds should be directed towards making low-carbon energy technologies commercially available and competitive.

It is important that the Bank sees beyond delivering new technology hardware. Energy efficiency projects offer a key opportunity to reduce CO₂ emissions within the existing system. Such projects are bankable, however Bank staff experience several disincentives to developing them. Efficiency projects do not create something new but reduce something already existing, but Bank staff are biased towards capital intensive show-pieces. In addition to this, Bank projects must also support the development of the appropriate institutional set-up to manage the market for these technologies. It is clear that many countries in which the Bank operates suffer from significant capacity constraints. Development models based upon importing large-scale, capital intensive technology requiring foreign expertise, such as fossil fuel plants, will be damaging to self-sustainability. In order for Bank projects or programmes to have a large scale and long-term impact they must be based upon

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local understanding of low-carbon technologies funded by the project or programme

Towards relevance and coherence

The issues highlighted above give some indication of the challenge facing the World Bank as it embarks on development of a new energy strategy. First and foremost, it is imperative that the Bank embraces a strategy that promotes low-carbon development. Lending which supports this should not just be at the forefront of the strategy, but mainstreamed throughout.

When considering the criteria for supporting energy projects, the concepts of directionality, diversity and distribution provide useful guidance. The Bank's energy strategy should acknowledge the potential lock-in effects of promoting any technology and include this consideration in what technologies it supports. If fossil fuel technologies are included, are they likely to lead to amplified impacts of climate change in the longer term? Diverse options can help improve energy security, avoid lock-in, and spread the risk of becoming dependent on a single energy resource.

Furthermore, the distributional aspects of the Bank's energy strategy may be better served by applying some of the low-carbon technologies than the established fossil fuel-based options. Different countries require different responses. And within each country, the distribution of benefits that are intended to flow from energy projects needs to be equitable. The Bank should focus its energy strategy on making low-carbon technology projects commercial and competitive through innovative financing and institutional development programmes in order to promote low-carbon development as a viable and attractive option.

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