



A health clinic located near the World Bank-financed Bujagali Dam in Uganda relies on solar power since the dam's power serves the capital, Kampala

The World Bank and Dams

PART 4: BEHIND THE TIMES ON RENEWABLE ENERGY

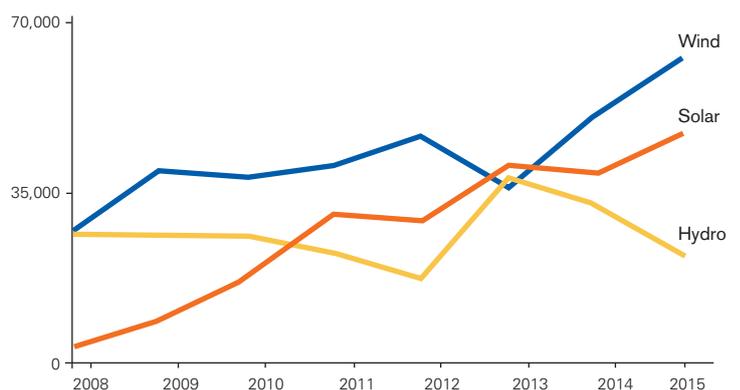
As wind and solar power have taken off globally, the World Bank is far behind the curve in its continued focus on large hydro. Given its poor track record and recent failures in the sector, it's time for the Bank to catch up with the world and embrace new renewables.

The latest energy studies show that investments and newly installed capacity for wind and solar are far outstripping other types of energy, including conventional sources like large hydro, which declined for the second year in a row. After experiencing a remarkable rise for several years running, new renewables in 2015 for the first time made up over half of all new power capacity added around the world.

The success of these technologies has been buoyed by their low cost and quick deployment time. They can also have a low social and environmental footprint, and are particularly effective at delivering energy access in places that currently lack it, such as South Asia and rural Africa.

Since 2013, installed solar and wind capacity has grown exponentially, while new hydro has dropped precipitously.

Annual Increases in Renewables Capacity (in MW)



Source: IRENA



World Bank: Business As Usual

Yet despite the great promise that these technologies hold to promote economic development and reduce poverty, the World Bank's lending for new renewables remains stubbornly low. Instead, the World Bank dedicates the bulk of its renewable energy portfolio to large hydro. This reflects an outdated model of development that ignores the Bank's hard-won lessons from financing large dams.

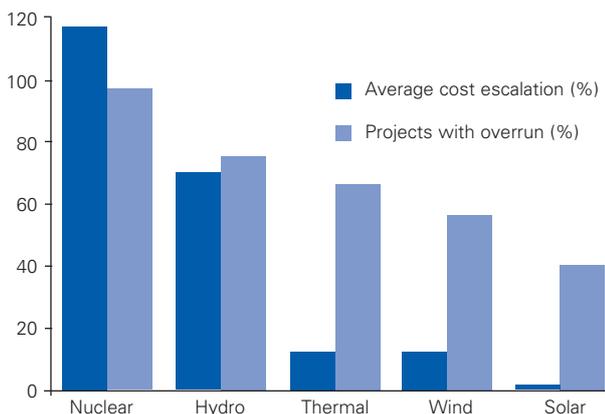
Since his election in 2012, World Bank President Jim Kim has trumpeted the Bank's return to large hydropower as a means of addressing energy poverty and climate change, including so-called "transformational" mega-dams. Kim himself championed the controversial Inga 3 Dam, the first phase of an extremely ambitious suite of dams envisioned on the Congo River. This marked a new chapter in the Bank's support for mega-dams after an extended hiatus from the sector. But the Bank had withdrawn from large hydro for good reason.

Large hydro is an outdated, risky technology that suffers cost and time overruns, a long deployment period and increasing vulnerability to climate change. Hydropower reservoirs in tropical regions are also major emitters of methane, an especially potent greenhouse gas. Of equal importance, large dams often have significant impacts on river ecosystems and local and indigenous communities. World Bank-financed dams routinely leave worse off the communities forced to make way for large reservoirs and those living downstream – a problem that continues unabated today.

Wind and Solar Power Ascendant

Meanwhile, wind and solar farms are competing with hydropower on price. They can be built much more quickly than large dams, and typically with much lower cost and time overruns.

Hydro projects are much more likely than solar and wind to suffer cost overruns



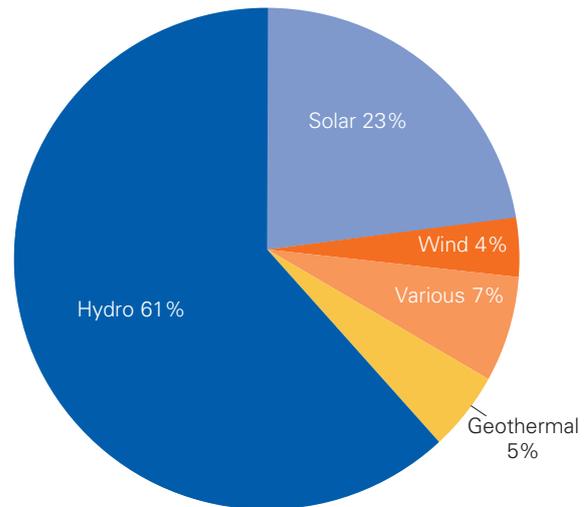
Source: 2014 Sovacool study on cost overruns in electricity infrastructure

Wind and solar power are also less exposed to climate risks than hydropower plants, which have seen numerous reservoirs lie empty during recent droughts. Finally, power system managers have found ways to absorb growing amounts of intermittent wind and solar power without building more large reservoirs. In recent years, countries including Denmark and Germany have pioneered strategies and planning tools to effectively manage the challenges of intermittency. In 2014, Germany had nearly 28 percent renewable energy generation in its grid. Denmark gets 39 percent of its energy from wind power alone.

Bank Lending Out Of Step

But rather than lead by example, the World Bank has fallen behind governments and markets, which have readily adopted solar and wind as the future of renewable energy generation. A review of World Bank lending since 2011 shows 61% of its lending for renewable energy supported large hydro over new renewables. Meanwhile, wind and solar account for just a quarter of the Bank's renewable energy lending.

World Bank Renewable Energy Lending, 2011-2016

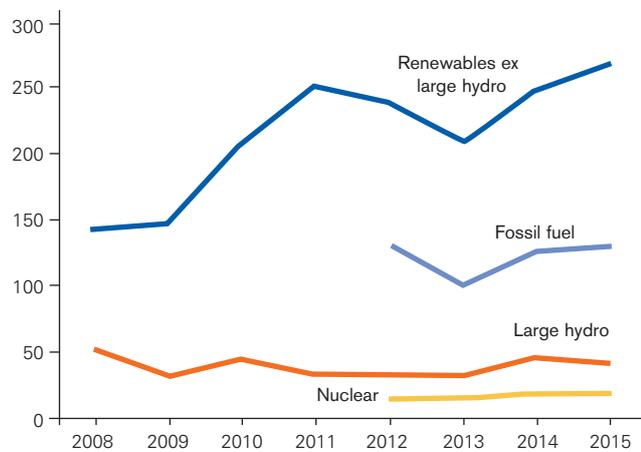


Source: World Bank lending data

This contrasts sharply with global trends that have seen significant new additions of solar and wind power. According to a new report by UNEP and Bloomberg New Energy Finance, the world added 64 GW of wind and 56 GW of solar power in 2015. In comparison, only 22 GW of large hydropower capacity was added during the same year – down from 38 GW in 2013 and 32 GW in 2014.

Investment in non-hydro renewables is trending up, while investment in large hydro is flatlining.

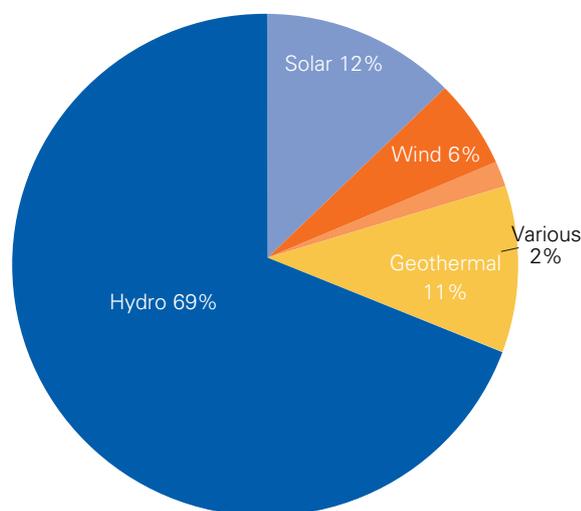
Annual Renewables Investment Worldwide (in USD millions)



Source: Bloomberg New Energy Finance

In sub-Saharan Africa, where energy access rates are the lowest, the World Bank is even farther behind the curve – nearly 70% of World Bank renewables lending is going towards hydropower, versus just 12% and 6% for solar and wind respectively.

World Bank Renewable Energy Lending to Africa, 2011-2016



Source: World Bank lending data

This despite the findings of the International Energy Agency (IEA), which estimates that to deliver energy access to the 1.3 billion globally who lack it – about half of whom are in Africa – over 60% will have to be met by renewable sources such as solar, wind, biomass and micro-hydro. Large hydro, however, requires a centralized grid, and is not well-suited to delivering energy access to those who lack it.

World Bank dams reducing poverty?

So who gets the power? The World Bank has focused on major energy consumers such as mining companies and heavy industry to off-take the power from its hydro investments even in countries where most people don't have access to electricity. In Cameroon, the Lom Pangar hydropower scheme is primarily designed to expand the operations of Rio Tinto, the world's second largest mining company, for energy-intensive aluminum smelting.

The Inga 3 Dam in the Democratic Republic of Congo is another such example, which envisions harnessing the Congo River's massive hydro potential for mining companies and export to urban centers in South Africa some 3000 kilometers away. The World Bank was instrumental in garnering support for the project, and President Kim invested significant political capital to get the project off the ground. But what Jim Kim once hailed as a flagship example of the transformative power of mega-dams has failed to take off. The World Bank has quietly suspended its involvement in the project after protracted, and perhaps predictable, disagreements with the Congolese government over political interference.

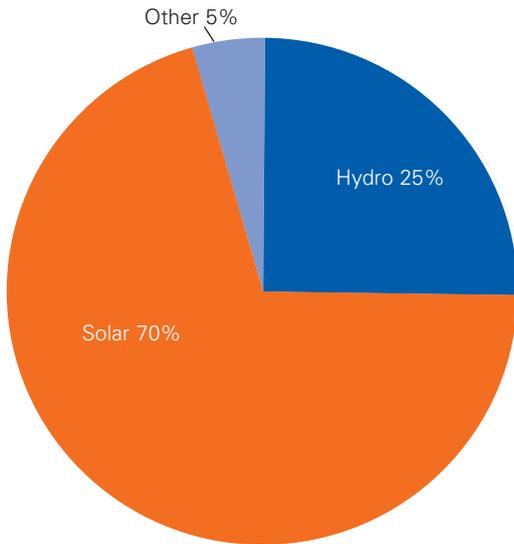
The Kandadji Dam in Niger is yet another high-profile failure. Kandadji is intended to generate a modest 130 MW to the power-starved country and facilitate irrigation, but it has been beset by delays and cost overruns that have threatened the project. Meanwhile, the Bank's rush to approve the loan has led to drastically underestimating the project's impacts. Now, the government is helpless to accommodate the 60,000 people who will be forced to make way for the dam's reservoir. As a result, the World Bank is considering walking away from the project.

The World Bank's current lending strategies are doing impoverished countries a disservice, particularly in Africa. They are foisting outdated and expensive hydropower projects on the continent most vulnerable to climate change-induced drought and floods. And they're doing it at a time when wind and solar have never been easier, faster or cheaper to deploy.

A New Trend on the Horizon?

Encouragingly, large hydro's share of the World Bank's renewable energy lending has dropped sharply over the last 2 years, surpassed for the first time by solar power due largely to \$500 million investments in rooftop solar in India and a first-of-its-kind concentrated solar plant in Morocco – a demonstration project with strong replicability. More recently, the Bank's support for hydro projects has shied away from big-ticket items in favor of the rehabilitation of existing sites.

World Bank Renewable Energy Lending, 2015-2016



Source: World Bank lending data

The Bank's recent troubles in the hydro sector – most notably Inga 3 and Kandadji – as well as the high-profile exposure of the Bank's failures in large resettlement schemes, may be important factors in this shift. It is still too early to say whether the Bank has learned its lessons and turned the page, particularly with IFC increasingly active in large hydro, but the World Bank is showing signs that it's finally playing catch-up.

Recommendations

THE WORLD BANK SHOULD:

- Dedicate 90 percent of its renewable energy lending to new renewables by 2020
- Double annual lending for new renewables from \$600 million per year to \$1.2 billion per year by 2020
- Recruit the personnel and expertise necessary, and align staff incentives, to accomplish these goals
- Assist countries to map their wind and solar energy potential and support their transition to climate-resilient and pro-poor energy solutions
- Only support hydro projects that are identified through rigorous energy sector planning wherein time and cost overruns are factored in
- Support large hydro as the last, and not first, option

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