

Banking Beyond Coal: Sustainable Development Without Coal Finance

This briefing investigates the financing of the coal power sector, particularly in the developing world, and highlights the associated financial, environmental, and social risks. It provides recommendations for shareholders engaging with banks to strengthen their coal policies.

Nearly three years on from the Paris Agreement, over 650,000 megawatts (MW) of new coal power infrastructure is in active development. Bank finance is continuing to facilitate this enormous pipeline, despite it putting the achievement of climate goals at serious risk. With much of the coal expansion taking place in the developing world, a common argument is that low-income nations have no other alternative to economic development. Yet with the coal power sector under increasing pressure from ever-cheaper renewables and fast-changing political appetite, the transition risks are just as relevant within the developing world too. Investors should engage with banks and encourage them to strengthen their coal policies to align with the goals of the Paris Agreement.

This briefing, which is designed as a tool to support investors in their engagements, summarises the extensive body of research demonstrating that:

- The expansion to coal infrastructure anywhere in the world is incompatible with the goals of the Paris Agreement;
- There are substantial stranded asset risks facing the entire coal sector;

- Coal power is not a solution but an obstacle to economic development;
- Renewable technologies can better serve the energy needs of developing nations.

Recommendations —————

In their engagements with banking sector holdings, investors should recommend that banks strengthen their coal policies to include:

- A prohibition of project finance to new coal mines and coal-fired power plants anywhere in the world;
- A prohibition of general corporate financing and advisory services to companies that are highly dependent on coal mining or coal power;
- A clear, timebound plan to phase out existing exposure to coal-related projects and companies.

Context

The transition to a low-carbon economy is well underway, and the coal-fired electricity generation sector is looking particularly vulnerable. 54% of European coal utilities today are loss-making,¹ US power companies are set to close down nearly 12,000 megawatts (MW) of coal-fired capacity in 2018,² and even the Chinese government has begun the early retirement of its coal power fleet.³

Cognisant of the environmental, social and financial risks associated with the coal sector, sixteen global banks have ended direct financing (also known as project finance) to new coal power plants.⁴ But fewer banks have implemented any policy to end indirect financing (i.e. general corporate lending and other financial services such as underwriting) to companies developing new coal power plants (see appendix).

Ultimately, this means that bank finance is still enabling the construction of new coal plants despite the incompatibility of such activity with global climate objectives. Since the Paris Agreement was signed in 2015, the top 120 coal power plant developers have received US\$ 275 billion from global banks in lending and underwriting services.⁵ Asian banks, especially the largest Chinese banks, top the list as the most sizeable financiers; but several Western banks, including Citi, Barclays and Standard Chartered, have increased their financing of coal plant developers over the same period.

Over 650,000 MW of new coal-fired power capacity is currently in planning or under construction,⁶ facilitated in part by this ongoing support of the banking sector. This astonishing figure represents one third of the entire global coal power fleet in operation today. Importantly, much of the planned coal power expansion is to be installed in the developing world, with large pipelines planned in India, Vietnam, Indonesia and Bangladesh.⁷

Such financing activities reveal many global banks to be inadequately managing the climate-related financial risks facing the fast-changing coal sector – risks that evidence demonstrates will also become increasingly significant in developing countries in the near future.

Investors should be concerned about the ongoing coal exposure of global banks and should engage with their shareholdings to encourage more stringent coal policies. In particular, it should be emphasized that financing

new coal infrastructure in the developing world is an unacceptable contradiction to the goals of the Paris Agreement. Banks should be urged to reflect in their lending policies a worldwide ban on project finance to new coal-related infrastructure, as well as limits to the provision of general lending and advisory services to companies that are highly-dependent on coal.

Why the banking sector's exposure to coal should be a concern for investors

1. The \$8.3 trillion coal power bubble

Expansion of thermal coal infrastructure anywhere in the world has been shown to be incompatible with achieving the goals of the Paris Agreement of limiting the global temperature rise to well-below two degrees (<2°C).

In 2016, research by the University of Oxford demonstrated how the capital stock of power generation infrastructure with future emissions consistent with the <2°C goal would be reached by 2017.⁸ As of today, this means that no new net-positive emission power plants can be built anywhere in the world; and existing infrastructure will have to be retired early to ensure a 50% probability of keeping the global temperature rise within safe limits (see Box 1 for more information on the myth of clean coal).

Subsequent analysis by the International Energy Agency (IEA) has demonstrated that 1,715 gigawatts (GW) of coal power capacity could be retired early under a below-2°C scenario (B2DS).⁹ That is equivalent to the total coal plants in China, USA, Japan, Germany and Poland combined, with the losses stemming from the early stranding of these assets estimated at up to \$8.3 trillion by 2060.¹⁰ The current capacity of today's coal power fleet worldwide, for context, is 1,965 GW.

The picture is no less bleak for the coal mining sector. Research by Carbon Tracker has shown that no new thermal coal mines are needed anywhere in the world under the IEA 450 scenario, as currently operating mines are able to serve all predicted demand out to 2035.¹¹ Up to 62% of thermal coal capex in Indonesia is at risk of becoming stranded value, for example, with similarly concerning figures for China (47%) and India (27%).



Losses stemming from the early stranding of these assets are estimated at up to \$8.3 trillion by 2060.

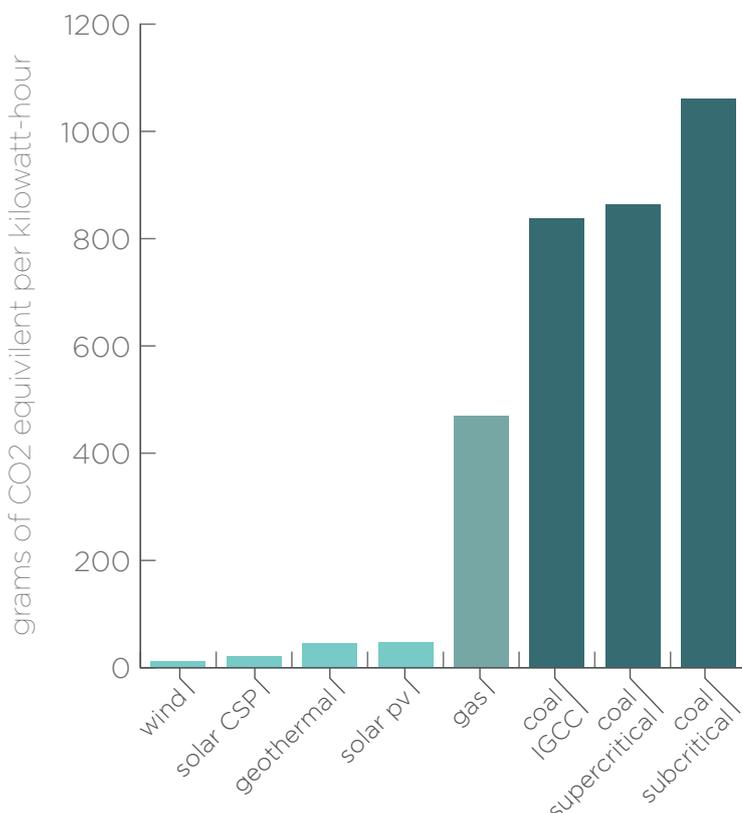
Yet these transition risks are not confined to forward-looking scenarios; fast-moving changes to national policies and climate targets mean these shifts are already materialising today. More than 20 countries, including the UK, France and Mexico, have joined the global Powering Past Coal Alliance since November 2017. Meanwhile the Chinese government last year cancelled 103 coal plants in planning or under construction,¹² and more recently committed to cutting 150 million tonnes of coal production in 2018.¹³

The appetite for coal is also shifting in the developing world. In June 2018, the Vietnamese Prime Minister Nguyen Xuan Phuc announced a reduction of coal in the country's power mix, alongside ambitious targets for solar development, noting: "It is important that we will not pursue economic growth at the expense of the environment."¹⁴ In India, meanwhile, the falling costs of renewables are already affecting the viability of existing coal-fired power plants: new wind and solar capacity is now 20% cheaper than the average wholesale coal price, and 65% of the country's coal power generation is being sold at more expensive rates than renewable bids in power auctions.¹⁵

In short, the transition risks facing the coal-power sector are significant, already materialising, and just as relevant for developing nations as in the Western world. Investors should emphasize such risks to banks that continue to finance coal-related projects and companies worldwide.

Box 1

The myth of clean coal: 'High-Efficiency, Low-Emissions' (HELE) coal power plant technology will not achieve the goals of the Paris Agreement



In recent decades, technological advances in steam generation have increased the efficiency of coal plants by generating more electricity per kilogram of coal burned. 75 per cent of operating coal plants today use 'subcritical' technology, which converts 33-37 per cent of the energy in coal into electricity.

By producing steam above the critical pressure of water, 'supercritical' plants can reach efficiencies of around 42 per cent, reducing CO2 emissions by 15-20 per cent compared to 'subcritical' plants. 'Ultra-supercritical' plants can achieve efficiencies of up to 45 per cent, whilst for 'integrated gasification combined cycle (IGCC)' plants the number is closer to 50 per cent, though few of the latter have been developed due to higher capital and operating costs. Yet the emissions intensities of these 'cleaner' technologies are still vastly beyond the equivalent for gas or renewables.¹⁶

Most importantly, such so-called High-Efficiency, Low-Emissions (HELE) coal power plants have been shown to be incompatible with the Paris Agreement. Even replacing the entire planned coal capacity with the 'cleanest' HELE technology would still see the 2°C limit exceeded, according to researchers from Ecofys.¹⁷

Source: Whitaker, M. et al (2012). "Life Cycle Greenhouse Gas Emissions of Coal-Fired Electricity Generation," *Journal of Industrial Ecology*, 16: S53-S72.

2. Debunking the ‘coal for development’ argument

Unfortunately, whilst increasing numbers of banks have ended the financing of new coal infrastructure in high-income OECD countries, a worrying trend has emerged of excluding developing nations from such commitments. HSBC’s recently-updated energy policy, for example, contains a loophole that permits continued financing of new coal power plants in Vietnam, Indonesia and Bangladesh until 2023 – under the premise that there is no viable alternative to coal power in these nations.¹⁸ A common argument is that a bank’s sustainability policy should not stand in the way of the “only route” to development in certain nations.



We think there are a number of markets in which there is no viable alternative to coal.

- José Viñals
Chairman, Standard Chartered
Speaking at the bank’s AGM on 9 May 2018

However, it is a common misconception that coal power is a prerequisite for economic development. Indeed, coal power has received far too much credit historically for poverty reduction. In China, the eradication of extreme poverty occurred mostly between 1981 and 1987 – before the large scale deployment of coal power infrastructure.¹⁹ In India, 95,000 MW of new coal power capacity was installed between 2001 and 2011, yet the proportion of electricity-poor households in the country remained largely unchanged throughout that timeframe.²⁰

This may be explained by the fact that 84% of the world’s electricity-poor households live far from the grid, usually in rural areas and therefore out of reach of coal-powered electricity.²¹ Such an energy-access challenge is solved not by expanding coal power capacity, but by either extending grid infrastructure or by installing off-grid, stand-alone energy systems for communities or households.²² With grid expansion often slowed by cost and political barriers in the developing world, off-grid infrastructure – which encompasses many possible renewable technologies – is becoming a

more readily deployable energy solution. This is especially relevant in sub-Saharan Africa where the installed grid-based electricity capacity equates only to about 0.1 kilowatts (kW) per capita, about half of which is in South Africa. This is in contrast to 1 to 3 kW per capita grid capacity in developed economies.²³ Deploying coal power in this region would therefore require significant and capital-intensive expansions to grid infrastructure in order to bring the additional electricity capacity to the communities that need it.

The claim by some banks that coal power is the only route to development in some low-income nations is therefore a fallacy that should be challenged by investors. As recognized by the World Bank, developing nations have an opportunity to leapfrog the fossil fuel-powered phase of twentieth century development by focusing instead on “new technology and new thinking.”²⁴

3. Developing nations do have affordable renewable alternatives

Renewable resources are not only plentiful in developing nations,²⁵ they are also fast becoming the most economical energy infrastructure option across the world. Costs of solar PV, for example, have fallen 72% between 2009 and 2017, with solar alone accounting for 38% of net new power capacity in 2017 – more than coal, gas and nuclear combined.²⁶ Indeed the World Economic Forum predicts solar PV to have a lower levelised cost of electricity (LCOE) than coal or gas power globally by 2020.²⁷

In fact, the cost battle is increasingly being won by the renewables sector in several regions. In April 2018, a Senegalese solar auction fixed a record low bid of below 4 euro cents per kilowatt-hour (approx. \$US0.046/kWh) for a combined 60 MW of power capacity.²⁸ Meanwhile India finalised a 2,000 MW wind auction at near record low prices of INR 2.44/kWh (US\$0.038/kWh) in February 2018.²⁹

In the off-grid space, increasingly affordable technology has created solutions that can run in rural areas without access to power networks or storage, with artificial intelligence capabilities that can adjust power output to smooth demand fluctuations.³ Despite the economic viability of these clean energy sources for electricity-deprived communities, such solutions are still considered ‘frontier’ and struggle to attract bank financing. Yet according to Alzbeta Klein, executive at the International Finance Corporation, part of the World Bank, “bankers

need to learn how to finance that, just like bankers learned to finance solar and wind over the past decade.”³⁰

Referring to a combination of low-carbon technologies, research by Stanford University has outlined roadmaps towards 100% renewable energy by 2050 in 139 countries of the world, including Vietnam, Indonesia, Morocco and Zambia.³¹ The paper concludes that following such renewable pathways would create 24.3 million net new full-time jobs, avoid 4.6 million deaths per year from air pollution, reduce energy costs and power disruption, and increase worldwide access to energy through decentralisation.

Given the clear path to renewables in the developing world, banks that continue to finance coal-related infrastructure are acting as an obstacle to sustainable economic development by facilitating the lock-in of high-carbon infrastructure and solidifying dependence on coal for decades to come. Instead, it is in the interests of banks and their shareholders to support developing nations in the transition to a low-carbon economy.

4. The human impacts of coal power

The public health consequences of coal-fired power plants are well documented and hard to dispute. Research by Harvard University, for example, estimates there will be nearly 70,000 premature deaths per year in South-East Asia from coal-related air pollution by 2030, if the planned coal power pipeline in the region goes ahead.³²

In addition, coal-fired power plants have material impacts on the pollution and withdrawal of local freshwater and groundwater, which has negative consequences for local communities reliant on smallholder agriculture. Worldwide, 44% of planned and existing coal plants are in areas known for high to severe water stress; whilst 50% of Chinese and 25% of Indian plants are located in red-listed zones, where water reserves are at risk of complete depletion due to faster withdrawals than natural replenishments.³³

Concerns over the air pollution and social consequences of coal-fired power plant construction has spurred grassroots resistance across the developing world. Local opposition

has contributed to planned plant cancellations in both the Philippines and China, and protests in Indonesia are ongoing against the 2000 MW Batang plant in Central Java and the 1000MW Cirebon plant expansion in West Java.³⁴ In Lamu, Kenya, local communities have opposed the development of a 1,050 MW coal plant close a UNESCO world heritage site, calling for renewable energy sources instead.³⁵



There will be nearly 70,000 premature deaths per year in South-East Asia from coal-related air pollution by 2030.

The negative social and public health impacts on local populations demonstrate how financing coal power expansion is a direct contradiction of Sustainable Development Goal (SDG) number seven: ensuring access to affordable, reliable, sustainable and modern energy. Indeed, the SDG compass explicitly states that:

“New clean technologies are available that can reorient development along a more sustainable trajectory. Business can accelerate the transition to an affordable, reliable and sustainable energy system by investing in renewable energy resources... and adopting clean energy technologies and infrastructure.”³⁶

Banks cannot claim that they are promoting social and economic development whilst continuing to finance the expansion of thermal coal infrastructure, and it is crucial that investors challenge them on this.

a | See, for example, Azuri's HomeSmart solar rooftop system – available to customers in sub-Saharan Africa for roughly \$3 a week for 18 months on a lease-to-own model. This is approximately half of what these customers would pay for the alternative energy source, kerosene. As reported in Bloomberg (2018), available online at: <https://www.bloomberg.com/news/articles/2018-06-11/ai-helps-africa-bypass-the-grid> [accessed 20 June 2018].

Conclusion

Over 650,000 MW of new coal power capacity is currently in planning or development, the majority of which is due to be installed in developing nations, and especially in South-East Asia. Not only is the development of this coal pipeline expressly in contradiction to the goals of the Paris Agreement, it is also explicitly against the energy objectives specified by the Sustainable Development Goals. The various negative impacts of coal power render it an obstacle to, rather than a facilitator of, sustainable economic development.

Renewable solutions are rapidly reaching cost parity or better with fossil fuel power generation.

In some nations, such as India, coal power plants are already becoming unviable. The transition risks that have already sent coal power into an irreversible 'death spiral' in the Western world, therefore, are just as relevant to the developing world in the near future.

Global banks are continuing to support coal power plant development – if not through direct project finance, then via general corporate lending or other advisory services. Investors should be concerned about the significant stranded value risks banks are therefore exposed to. Engagement should be employed to ask banks to strengthen their coal policies to demonstrate prudent climate risk management.

Recommendations

Investors have a key role to play in asking banks to align their coal policies with the goals of the Paris Agreement. To achieve this, investors should recommend that banks implement:

- A prohibition of project finance to new coal mines and coal-fired power plants anywhere in the world;
- A prohibition of general corporate financing and advisory services to companies who are highly dependent^b on coal mining or coal power;
- A clear, timebound plan to phase out existing exposure to coal-related projects and companies.

Suggestions for engagement focus

Barclays and Standard Chartered are currently undertaking a review into their coal financing policies.³⁷ Barclays is ranked 7th largest financier to the coal power sector (and largest European financier),³⁸ whilst Standard Chartered is known to be currently involved in three large and controversial coal power plant projects in Vietnam.³⁹

Investors should also engage with HSBC to encourage the implementation of a global project finance prohibition. Despite openly coming out in support of the Paris Agreement, HSBC's current coal policy contains a loophole that permits ongoing financing to coal power projects in Vietnam, Indonesia and Bangladesh – where there is over 100,000 MW of new coal power capacity in active development.⁴⁰

b | Highly coal-dependent companies are defined as those where over 30% of their revenues or energy mix comes from coal; AND/OR annual production, trading, or consumption of coal exceeds 20 million tonnes annually; AND/OR installed coal power capacity is greater than 10,000 MW; AND/OR the company is planning investments into new coal-related infrastructure. Such criteria are designed to ensure that highly diversified companies, such as Tata or Marubeni, who may fall below the 30% threshold but who have large absolute exposures to coal are still accounted for.

Appendix: Overview of banks' policies on direct and indirect coal-related financing⁴¹

Direct finance

Global project finance prohibition for both new thermal coal power plants and mines
ABN Amro
BNP Paribas
Commerzbank
Crédit Agricole
Deutsche Bank
ING
KBC Bank
Natixis
Rabobank
Royal Bank of Scotland
Societe Generale
US Bancorp

Global project finance prohibition for new coal plants only
DZ Bank
Nedbank
PNC
Skandinaviska Enskilda Banken

Global project finance prohibition for new thermal coal mines only
Barclays
Credit Suisse
DBS Bank
HSBC
JP Morgan Chase
National Australia Bank (NAB)
Standard Chartered

Indirect finance

Full exclusion of general corporate finance to companies still planning to build new coal power plants
ABN Amro

Partial or indirect exclusion of general corporate finance to companies still planning to build new coal power plants
Banco Bilbao Vizcaya Argentaria (BBVA)
BNP Paribas
Crédit Agricole
ING
Societe Generale
UBS

References

1. Carbon Tracker (2017). *Lignite of the living dead*, p17. Available online at: <https://www.carbontracker.org/reports/lignite-living-dead/> [accessed 1 June 2018].
2. Storrow, B. (15 March 2018). "GOP is trying to prop up coal, but plants keeps closing," *E&E News*. Available online at: <https://www.eenews.net/stories/1060076419> [accessed 18 June 2018].
3. Forsythe, M. (18 Jan 2017). "China cancels 103 coal plants, mindful of smog and wasted capacity," *NY Times*. Available online at: <https://www.nytimes.com/2017/01/18/world/asia/china-coal-power-plants-pollution.html> [accessed 1 June 2018].
4. BankTrack (2018). "List of banks that ended direct financing for new coal mines/plants," *BankTrack*. Available online at: https://www.banktrack.org/page/list_of_banks_that_ended_direct_finance_for_new_coal_minesplants [accessed 19 June 2018].
5. BankTrack, Urgewald et al. (2017). *Banks vs. the Paris Agreement: who's still financing coal plant development?* Available online at: <https://www.banktrack.org/coaldevelopers/> [accessed 1 June 2018].
6. Carbon Tracker (2018). "Mapped: The World's Coal Power Plants," *Carbon Tracker*. Available online at: <https://www.carbonbrief.org/mapped-worlds-coal-power-plants> [accessed 19 June 2018].
7. CoalSwarm, Greenpeace USA, and Sierra Club. (2018). *Boom and Bust 2018: Tracking the Global Coal Plant Pipeline*. Available online at: https://endcoal.org/wp-content/uploads/2018/03/BoomAndBust_2018_r6.pdf [accessed 19 June 2016].
8. Pfeiffer, A., Millar, R., Hepburn, C., & Beinhocker, E. (2016). "The '2°C capital stock' for electricity generation: cumulative committed carbon emissions and climate change," *Institute for New Economic Thinking*, INET Oxford Working Paper no. 2015-09. Available online at: <https://www.ineteconomics.org/uploads/papers/2C-Capital-Stock-Working-Paper.pdf> [accessed 1 June 2018].
9. International Energy Agency (2017). *Energy Technology Perspectives 2017*. Available online at: <http://www.iea.org/etp/> [accessed 1 June 2018].
10. Ibid.
11. Carbon Tracker (2015). *The \$2 trillion stranded assets danger zone: how fossil fuel firms risk destroying investor returns*. Available online at: <https://www.carbontracker.org/reports/stranded-assets-danger-zone/> [accessed 1 June 2018].
12. Forsythe, M. (18 Jan 2017). "China cancels 103 coal plants, mindful of smog and wasted capacity," *NY Times*. Available online at: <https://www.nytimes.com/2017/01/18/world/asia/china-coal-power-plants-pollution.html> [accessed 1 June 2018].
13. Xu, M., Daly, T. (5 March 2018). "China to cut more coal, steep output to defend 'blue skies'," *Reuters*. Available online at: <https://www.reuters.com/article/us-china-parliament-steel-coal/china-to-cut-more-coal-steel-output-to-defend-blue-skies-idUSKBNIGH034> [accessed 1 June 2018].
14. Pearson, J., Vu, K. (4 June 2018). "Vietnam sets out green ambitions with bold targets for solar, rare earth," *Reuters*. Available online at: <https://uk.reuters.com/article/us-vietnam-energy/vietnam-sets-out-green-ambitions-with-bold-targets-for-solar-rare-earth-idUKKCN1J00U> [accessed 20 June 2018].
15. Marcacci, S. (30 January 2018). "India coal power is about to crash: 65% of existing coal costs more than new wind and solar," *Forbes*. Available online at: <https://www.forbes.com/sites/energyinnovation/2018/01/30/india-coal-power-is-about-to-crash-65-of-existing-coal-costs-more-than-new-wind-and-solar/#599db6bc4c0f> [accessed 19 June 2018].
16. End Coal (2015). "Coal Factsheet #4: 'Clean Coal' is a dirty lie," *End Coal*. Available online at: <https://endcoal.org/wp-content/uploads/2015/03/EndCoalCleanCoalFactsheet2015.WEB-1.pdf> [accessed 19 June 2018].
17. Ecofys (2016). *The incompatibility of high-efficient coal technology with 2°C scenarios*. Available online here: <https://www.ecofys.com/files/files/ecofys-2016-incompatibility-of-hele-coal-w-2c-scenarios.pdf> [accessed 1 June 2018].
18. HSBC (2018). *HSBC Energy Policy*. Available online at: <https://www.hsbc.com/-/media/hsbc-com/newsroomassets/2018/pdfs/180420-hsbc-energy-policy.pdf> [accessed 20 June 2018].
19. Overseas Development Institute (2016). *Beyond coal- scaling up clean energy to fight global poverty*, p. 8. Available online at: <https://www.odi.org/sites/odi.org.uk/files/resource-documents/10964.pdf> [accessed 1 June 2018].
20. Institute for Energy Economics and Financial Analysis (2016). *Energy Poverty, Then and Now: How Coal Proponents Have it Wrong*, p. 10. Available online at: http://ieefa.org/wp-content/uploads/2016/03/Energy-Poverty-Then-and-Now_-How-Coal-Proponents-Have-It-Wrong- March-2016.pdf [accessed 1 June 2018].
21. International Energy Agency (2011). *World energy outlook 2011*. Paris: International Energy Agency.
22. Overseas Development Institute (2016). *Beyond coal- scaling up clean energy to fight global poverty*, p. 5.
23. Oxfam (2017). *The energy challenge in sub-Saharan Africa: a guide for advocates and policy makers. Part 1: Generating energy for sustainable and equitable development*. Available online at: <https://www.oxfamamerica.org/static/media/files/oxfam-RAEL-energySSA-pt1.pdf> [accessed 19 June 2018].
24. World Bank (8 October 2015). "Clean energy, not coal, is the solution to poverty." Blog: Perspectives on Development. Available online at: <https://blogs.worldbank.org/voices/clean-energy-not-coal-solution-poverty> [accessed 19 June 2018].
25. An excellent resource is the Global Atlas for Renewable Energy produced by the International Renewable Energy Agency (IRENA), available online at: <https://irena.masdar.ac.ae/gallery/#gallery> [accessed 19 June 2018].
26. Frankfurt School-UNEP Centre/BNEF (2018). *Global Trends in Renewable Energy Investment 2018*, p. 11. Available online at: <http://fs-unep-centre.org/sites/default/files/publications/gtr2018v2.pdf> [accessed 1 June 2018].
27. World Economic Forum (2016). *Renewable infrastructure handbook: a guide for institutional investors*. Available online at: http://www3.weforum.org/docs/WEF_Renewable_Infrastructure_Investment_Handbook.pdf [accessed 1 June 2018].

28. Stefanini, S. (1 June 2018). "Can off-grid renewables close the energy access gap?," *Devex*. Available online at: <https://www.devex.com/news/can-off-grid-renewables-close-the-energy-access-gap-92828> [accessed 19 June 2018].
29. Tendulkar, S. (15 February 2018). "India 2GW auction prices at near record low," *Wind Power Monthly*. Available online at: <https://www.windpowermonthly.com/article/1457247/india-2gw-auction-prices-near-record-low> [accessed 19 June 2018].
30. Stefanini, S. (1 June 2018). "Can off-grid renewables close the energy access gap?," *Devex*.
31. Jacobson, M. et al. (2017). "100% Clean and Renewable Wind, Water, and Sunlight All-Sector Energy Roadmaps for 139 Countries of the World," *Joule* 1, 108-121. Available online at: <https://web.stanford.edu/group/efmh/jacobson/Articles/1/CountriesWWS.pdf> [accessed 1 June 2018].
32. Koplitz, S. et al. (2017). "Burden of disease from rising coal-fired power plant emissions in Southeast Asia," *Environmental Science & Technology* 51, p. 1467-1476. Available online at: <https://pubs.acs.org/doi/pdf/10.1021/acs.est.6b03731> [accessed 19 June 2018].
33. Overseas Development Institute (2016). Beyond coal- scaling up clean energy to fight global poverty, p. 5.
34. Coca, N. (28 September 2017). "The coal battle shifts to Southeast Asia," *Earth Island Journal*. Available online at: http://www.earthisland.org/journal/index.php/elist/eListRead/the_coal_battle_shifts_to_southeast_asia/ [accessed 1 June 2018].
35. Praxides, C. (8 June 2018). "The coal resistance: why Lamu says no," *The Star*. Available online at: https://www.the-star.co.ke/news/2018/06/08/the-coal-resistance-why-lamu-says-no_c1769289 [accessed 19 June 2018].
36. UN Global Compact, WBCSD (2015). "SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all," *SDG Compass*. Available online here: <https://sdgcompass.org/sdgs/sdg-7/> [accessed 1 June 2018].
37. As announced at each respective bank's most recent Annual General Meeting (Barclays, 1 May 2018; Standard Chartered 9 May 2018)
38. BankTrack (2018). *Banking on Climate Change: Fossil Fuel Finance Report Card 2018*. Available online at: https://www.banktrack.org/download/banking_on_climate_change/banking_on_climate_change_2018_web_final.pdf [accessed 19 June 2018].
39. The projects are named Vinh Tân 3, Nam Dinh 1, Vung Ang 2. For more information see BankTrack (2018). "Bank profile: Standard Chartered," *BankTrack*. Available online at: https://www.banktrack.org/bank/standard_chartered/pdf [accessed 1 June 2018].
40. CoalSwarm, Greenpeace USA, and Sierra Club. (2018). *Boom and Bust 2018: Tracking the Global Coal Plant Pipeline*. Available online at: https://endcoal.org/wp-content/uploads/2018/03/BoomAndBust_2018_r6.pdf [accessed 19 June 2016].
41. BankTrack (2018). "List of banks that ended direct financing for new coal mines/plants," *BankTrack*. Available online at: https://www.banktrack.org/page/list_of_banks_that_ended_direct_finance_for_new_coal_minesplants [accessed 19 June 2018]; BankTrack (2018). "List of banks' policies on coal plant developers," *BankTrack*. Available online at: https://www.banktrack.org/page/list_of_banks_policies_on_coal_plant_developers#inform=1 [accessed 19 June 2018].

Disclaimer

ShareAction is not an investment advisor, and makes no representation regarding the advisability of investing in any particular company or investment fund or other vehicle. A decision to invest in any such investment fund or other entity should not be made in reliance on any of the statements set forth in this publication. While ShareAction has obtained information believed to be reliable, it makes no representation or warranty (express or implied) as to the accuracy or completeness of the information and opinions contained in this report, and it shall not be liable for any claims or losses of any nature in connection with information contained in this document, including but not limited to, lost profits or punitive or consequential damages. The contents of this report may be used by anyone providing acknowledgement is given to ShareAction. This does not represent a license to repackage or resell any of the data reported to ShareAction and presented in this report. If you intend to repackage or resell any of the contents of this report, you need to obtain express permission from ShareAction before doing so.

About ShareAction

ShareAction (Fairshare Educational Foundation) is a registered charity that promotes Responsible Investment practices by pension providers and fund managers. ShareAction believes that Responsible Investment helps to safeguard investments as well as securing environmental and social benefits.

shareaction.org | 16 Crucifix Lane
info@shareaction.org | London, United Kingdom
+44 (0)20 7403 7800 | SE1 3JW

The opinions expressed in this publication are based on the documents specified. We encourage readers to read those documents. Online links accessed 20 June 2018. Fairshare Educational Foundation is a company limited by guarantee registered in England and Wales number 05013662 (registered address 16 Crucifix Lane, London, SE1 3JW) and a registered charity number 1117244, VAT registration number GB 211 1469 53.

Contact

Anne-Marie Williams
Investor Engagement Manager
ShareAction
anne-marie.williams@shareaction.org
+44 (0)20 7403 7812

Authors

Sonia Hierzig
Project Manager - Banks
ShareAction
sonia.hierzig@shareaction.org
+44 (0)20 7183 2355

Katie Kedward
Campaigns Officer - Banks
ShareAction
katie.kedward@shareaction.org
+44 (0)20 7183 2355

ShareAction»