

Creating Alliances for Renewable Energy Investment: Lessons from China and India

‘Alliances’ of public and private actors can play a crucial role in accelerating the transition to sustainable energy systems, and these groupings can be ‘engineered’. Based on research findings from India and China this research concludes that achieving a global energy transition will be best served if countries forge alliances to support specialisation where they have a comparative advantage. Large emerging economies should create low-cost manufacturing industries based on growing domestic demand; smaller developing countries should create alliances to install the cheapest renewable power and develop off-grid production capacity; and alliances in developed countries should support Research and Development (R&D) into new, low-cost renewable technologies.

This briefing is based on research into the drivers of wind and solar energy investment in India and China. The research started from the position that the primary driver of investment is a perceived business opportunity and, in renewable energy, such opportunities often arise because governments provide incentives. Although both the literature and case material from the research confirm this, this explanation is not sufficient to explain the scale and pattern of investment we have seen over the past 15 years.

Markets and governments do not operate in a vacuum but within specific political contexts. An emerging literature aims to cut through the complexities of these contexts by focusing on alignments of interests within public and private ‘alliances’. While the role of ‘alliances’ in driving political change, or economic reform has been explored, this perspective has not been applied to green investments. These types of investments often require support from governments to be commercially viable, but also need investors to commit large sums with long payback periods. As a result, it is

important that confidence exists that the ‘package’ that made the investment attractive will be maintained.

Why focus on the roles of India and China?

The focus on India and China does not suggest that these are the only countries that matter. Both historical responsibilities for climate change, and the scale of current emissions, demand that developed countries are at the forefront of a transition. But progress has stalled in Europe and the US, politically and financially. Given this, perhaps it is now time to look elsewhere for solutions.

Understanding the drivers of green investments in the two countries is important for four reasons:

- How China and India meet their energy needs is crucial for growth and poverty reduction for billions of people.
- The decisions of China and India will influence those made by other developing countries.
- What happens in India and China will also affect the options and incentives facing developed country policymakers.

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- These direct and indirect effects may be pivotal in determining whether it is possible to shift the world onto a sustainable development path.

The difference between unconstrained and sustained investment

The research examined two types of wind and solar investment: firstly, one which aims to create competitive manufacturing firms; and secondly, one which increases installed generating capacity (China used to make and export lots of solar panels, for example, but did not generate any domestic power from solar – i.e. it had no installed solar generating capacity). Alliances matter in both cases. Where investment led to the creation of globally competitive firms – as with China’s wind sector – there is evidence of long-term strategic alliances between public and private agencies. On the other hand, where investment has not been sustained – as in the first phase of expansion of India’s wind sector – there is a fracturing of previously successful alliances. Alliances that lose a key ‘member’, or lacked such a member from the outset, are likely to become unbalanced, reducing or eliminating their ability to achieve their goals.

Alliances can also become ‘unbalanced’ in the other direction, with increases in installed generating capacity. China’s first rapid expansion of solar manufacturing capacity was made possible by listings on ‘exuberant’ overseas stock markets. The main actors – local government and firms in China, and international financial institutions – had strong incentives to list. The result, however, was a rapid expansion of global supply, causing prices to plummet and many solar firms to face solvency problems. In India, the unsustainable international expansion of Suzlon was also fuelled by access to international capital during a ‘boom’. China’s second overly rapid solar manufacturing expansion, in contrast, was made possible by state-owned banks being mandated to support strategic sectors in a downturn, which also led to domestic wind capacity expanding more rapidly than the grid could absorb.

Despite these different sources of finance, the common feature was effectively unlimited access to cheap funding, enabling alliances to achieve their objectives in an unconstrained way. Sustained investment, where the supply and demand for renewable energy grow together, is preferable to ‘boom-type’ finance where these can become rapidly unbalanced.

Two types of alliance: ‘engineered’ or ‘uncoordinated’

‘Engineered alliances’ are deliberately forged to achieve a particular goal. In India and China, local or national governments, as well as commercial firms, have performed this role. To succeed, engineered alliances need an alignment of interest between actors sufficient to achieve a particular objective. Where these alignments are already broadly in place, the role of the ‘engineer’ is mainly one of coordination. A good example is the role Suzlon played in developing the ‘end-to-end, captive power’ wind model in India, where the company created an alliance of actors who were all sufficiently incentivised to perform their roles.

Where existing alignments are insufficient, they need to be created or enhanced. One example is the creation of a competitive wind industry in China, where the chief engineer was the central government. A strategic decision was taken and steadily implemented to engineer business opportunities (by creating and subsidising the domestic market) and ensure that the actors (manufacturing firms) needed to exploit these opportunities were ready and able to do so. To succeed, it is important that the interests of all key actors are aligned. When investors were unable to obtain sufficient returns in the research case studies, for example, the ability of alliances to achieve their goals was limited.

‘Uncoordinated alliances’ arise spontaneously when a group of actors see their interests align under particular conditions. Such alliances depend on maintaining these conditions as no particular agency is working to maintain them, as in the case of engineered alliances. Uncoordinated alliances are inherently precarious, and are thus less likely to endure over time.

Alliances also differ in breadth and depth. The deeper an alignment of interest, the more durable the alliance. Generally, the more actors in an alliance (i.e. its breadth) the fewer the shared interests of its members, and the less likely it is to last. This does not mean deeper alliances are necessarily better. Sometimes only a very broad alliance will do, and this will most likely be shallow, lasting only as long as needed. Different objectives require different forms of engineered alliance.

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Policy recommendations

There are two main goals that national policymakers might pursue with respect to renewable energy: to increase the share of wind and solar energy in the national energy mix; and to create competitive manufacturing industries. The feasibility of achieving these goals relies on building alliances for sustained investment. However, policies should be tailored to local circumstances, as they vary from country to country.

1. Large emerging economy policymakers should engineer and maintain an overview of stable deep alliances to support the creation of competitive firms in sectors with the most abundant, lowest-cost resources

Manufacturing firms need a large and growing market. While this can be global or domestic, the latter may be preferable as it provides a more stable foundation for long-term growth and competitiveness. Increasing domestic generating capacity through concessions with strong local content requirements is important for the development of a manufacturing base. As well as a large domestic market, this takes a broad-based alliance of actors bound by deep alignments of interest. The state is most likely to have the tools and resources to engineer and maintain such an alliance.

But there are limits. The closer the alignments of interest, the less these need to be artificially maintained. When attempting to develop renewable industries, it is therefore best to focus on areas where the country has abundant resources which can be developed at reasonable cost. Renewable technologies which are most economically viable – given the country's resources and energy cost differentials – will require less artificial engineering, and be more stable over time.

Alliances can become unbalanced when new actors join or important players leave. This requires engineers to have a clear overview of shifting interests, and maintain a balance. For example, the need to produce energy at as low a cost as possible has to be balanced with the need to provide sufficient returns for investors. To avoid the emergence of 'bandwagons', however, returns should be sufficient but not excessive. Unconstrained access to cheap finance is a particular risk.

2. Policymakers in smaller developing countries should focus on engineering alliances to support low-cost renewable energy, and off-grid innovation in production and generation

Realistically, smaller developing countries are unlikely to develop competitive manufacturing industries in large-scale renewable energy systems. Given this, the relevant policy questions are: which renewable technologies should be deployed; and are there other low-carbon areas where competitive productive capacity could be developed?

For the first question, technologies where resources are abundant and costs lowest are preferable. It may still be, however, that these are more costly than fossil-fuel alternatives, and so require credible subsidies to be competitive. Given that low-income countries have limited resources and no responsibility for climate change, who should provide these subsidies? Here, different forms of alliances, with donors providing finance for subsidies, and working with governments, local developers and financiers could ensure that energy remains affordable.

A priority of central governments in India and China has been to increase the supply of energy for national grids, rather than off-grid systems. This may offer a potential niche for smaller developing countries, where connecting rural communities may be more feasible (and economically viable) with off-grid systems. The experience gained in meeting these challenges could be a route to creating competitive productive capacity. 'Engineering' alliances with donor agencies, and technology companies from donor countries, could be potentially fruitful.

Policy recommendations *(continued)*

3. Developed country policymakers who cannot compete on cost should focus on R&D to generate cost-savings innovation and gain first-mover advantage in new markets

Given their higher cost base, it is unlikely that developed countries will be able to compete in mass-produced renewable technologies over the longer-term. Where these countries retain a major advantage, however, is in hi-tech R&D and innovation. While increasing the scale of production has driven down the cost of wind and solar technologies, differentials remain. Fossil-fuel energy systems have been evolving for centuries, renewables for decades. The scope for innovation to reduce renewable energy costs is huge. Countries that achieve breakthroughs will gain first mover advantage in new sectors.

There is scope for stronger low-carbon 'innovation alliances', with state agencies 'engineering' deep alignments of interest between private firms, financial institutions, and universities.

4. Global policymakers should encourage countries to exploit their low-carbon 'comparative advantage', and use this as a springboard for a global climate change deal

Globally, the key concern is to reduce the costs of renewable energy, increase the global supply and make it as easy as possible to shift away from fossil-fuels, politically and technically.

Rather than competing fiercely for the same markets, a more specialised and complementary approach based on the comparative advantage of different countries may offer the best hope in this regard. Specialisation in terms of R&D, or manufacturing at scale, or designing technologies for off-grid use, offer private and public agencies in different countries the chance to pursue goals in a positive-sum way. Actors in global institutions, or at the national level with a global perspective, should consider what tools are available to help them 'engineer' alliances to further these ends.

Finally, achieving a global deal on climate change would make this easier. The more progress is made on shifting to sustainable energy systems at national level, the stronger the aligned interests in support of accelerating this shift, and the weaker the national forces opposing this. This suggests that creating effective national alliances in favour of clean energy will ultimately make it easier to achieve a global deal on climate change.

Further reading

Dong, W.; Qi, Y. and Spratt, S. (2014, forthcoming) *The Political Economy of Low-Carbon Investments: The Role of Coalitions and Alignments of Interest in the Green Transformation in China*, Working Paper, Brighton: IDS

Krishna, C.; Sagar, A.D. and Spratt, S. (2014, forthcoming) *The Political Economy of Low-Carbon Investments: Insights from the Wind and Solar Power Sectors in India*, Working Paper, Brighton: IDS

Peiffer, C. (2012) 'Reform' Coalitions: Patterns and Hypotheses from a Survey of the Literature, Concept Paper 3, Developmental Leadership Program

Spratt, S. (2014, forthcoming) *What Drives Wind and Solar Energy Investment in India and China?*, Evidence Report, Brighton: IDS

Credits

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