



Who drives green transformations in high emitting developing countries?

*Roz Price
Institute of Development Studies
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Question

What examples are there of high-emitting developing states pursuing low carbon/green development and how have they organised the state, private sector, and civil society to achieve this? What helped/hindered this and what were the trade-offs? Consider also lessons from developmental state theory and how these relate to green growth approaches.

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1. Summary

In the recent Handbook on Green Growth¹, Fouquet (2019) highlights that the pursuit of “green growth” offers the opportunity for economies to expand and develop while still protecting their environment. However, “despite more than a decade of experience [of pursuing green growth], the potential of integrated economic and environmental policies to improve competitiveness and generate transformative economic growth and development is still poorly understood” (p.2). This highlights an important issue about the lack of strong evidence around how countries can move to low-carbon development pathways whilst still achieving economic growth. This is a complex field, with many ambiguities around definitions (e.g. the developmental state, the green economy), theories and approaches. There is also a large literature by scholars who see green growth as a contradiction in terms. Hence, given its limitations, this rapid review can only skim the surface of the “green developmental state” and what this might mean.

This rapid review looks at some examples of countries that are beginning to pursue green growth (or at least in some sectors), highlighting the characteristics and challenges of these movements. The review focuses on how this transformation has been driven,² focusing on state, private sector and civil society (in some cases). The case studies are not exhaustive and only give a snapshot of the (part) transformations to low-carbon development, this is important to keep in mind given the complexities of these pathways, the importance of context and that these transformations are inherently political as well as economical (and so often subject to the whims of political powers). Furthermore, these cases are not intended to suggest best practices but rather provide insights into how countries are creating commitment devices within their institutional and political contexts. The review firstly explores some of the literature around green growth, transitions theory and the role of institutions, coalitions and actors in energy transformations, with a focus on political economy analysis. The review also touches on developmental state theory and how lessons from this have been connected to green growth. The majority of the literature referred to in this review is academic. The review is largely gender blind, although the transition to low carbon development will need to be gender sensitive and this is acknowledged in the literature.

Key points include:

- There has generally been a lack of analysis of the state and significance of this in relation to sustainability transitions. However, the state is becoming an increasingly important point of reference in the literature, with a more nuanced understanding of the complex position of the state in the political economy of transitions. This is an emerging area of scholarship looking to foster understandings of politics and power, accelerating transitions, as well as why transitions proceed along very different trajectories in different transition contexts. Further work is needed (Johnstone & Newell, 2017).
- Important considerations in transitions include: vested interests; the role of coalitions in supporting and hindering acceleration; the role of feedbacks, through which policies may shape actor preferences which, in turn, create stronger policies; the role of broader

¹ There are many different understandings of the green growth concept, the OECD (2011: p.9) proposes that green growth means “fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.” OECD. (2011). *Towards Green Growth*. Paris: OECD Publishing. <https://doi.org/10.1787/9789264111318-en>.

² The terms transformation and transition are used interchangeably in this review.

contexts (political economies, institutions, cultural norms, technical systems) in creating more (or less) favourable conditions for deliberate acceleration (Roberts et al., 2017). Transformations to a low-carbon economy require multiple groups of actors across government, business and civil society and that each sector will have proponents and opponents to the change (Schmitz, 2017).

- Williams (2014) argues that some kind of developmental state is essential to achieve sustainable development, but that there is no blueprint of effective state structures and action. Lessons can be learned from previous developmental state experiences, which encourage country-specific development that takes seriously local conditions, social demands from a myriad of class forces and domestic politics.
- No country provides a role model for achieving low carbon development sustainably. Many developing countries and emerging economies are establishing green economy practices, but few have implemented economy-wide climate change laws or policies. Hence, there are limited opportunities to assess successes and failures. Some countries have made early steps, such as Morocco, the Gambia, Bhutan, Costa Rica, Ethiopia, India, Kenya and the Philippines (according to the Climate Action Tracker – <https://climateactiontracker.org/countries/>). Others have started to transform their energy systems, but their emissions remain high and climate commitments do not equate to limiting global warming to 2°C – such as Brazil, China and South Africa. These commitments to low carbon development and green growth are inherently political and often dependent on political will, which can ebb and flow. For example, Brazil was seen as progressive in its climate commitments, but this agenda lost momentum under the presidency of Dilma Rousseff and has slipped further with the accession of Bolsonaro.
- There is no simple answer to who drives climate-relevant policies in China; it varies over time and along the central–local axis. The bundling of interests, however, has been important in all instances, supporting the coalition perspective (Schmitz, 2017).
- In India a co-benefits approach has enabled stakeholders to engage in the climate change debate without conceding on their priority of accelerating economic development. However, no coherent strategy exists. The pursuit of energy security has been the most powerful driver of domestic action. Energy shortages have influenced the lack of opposition to solar and wind from fossil fuel industries (Schmitz, 2017).
- In South Africa, moves towards renewables continue to be contested and there remains a struggle between coalitions for and against, splitting the public and the private sectors while civil society remains undecided. The renewables agenda is linked to an agenda of breaking up a vertically integrated, state-owned energy company (Schmitz, 2017).

2. Transitions, low-carbon growth and developmental state theory

What drives green transformations?

Learning from the past and political economy analysis

Fouquet (2019) highlights that up until now, few economies can claim to be low carbon (with a few exceptions such as Iceland and Costa Rica where large clean natural energy resource exist, and Germany and Denmark where strong political will exists). Nevertheless, some large emitting

developing countries have taken steps towards low carbon development and transforming their economies. A key feature of successful economies, as argued by Fouquet (2019: p.2), “has been their **ability to transform** – to continue to grow and develop economically by investing returns in valuable and productive activities.” Hence, Fouquet (2019) argues that structural transformation is necessary for economic and social advancement, and green growth offers a new potential source of this. Fouquet (2019) highlights some key characteristics related to previous economic transformations:

- **Vested interests:** Powerful vested interests have been central in limiting the potential for economies and societies to transform. This is linked to a lack of incentives for incumbents, those that had gained power when their economy grew, to instigate structural change, and the complicity/dependency of politicians on these incumbents.
- **Importance of natural capital and diversification:** The failure to govern existing natural capital properly in a country can hinder the momentum of economic growth. This highlights the critical role natural capital (in particular, land) played in traditional economic activity. Resource-based development is often successful initially yet limited in the long run. Although, economies can struggle to invest returns in more dynamic and productive sectors – partly due to the aforementioned vested interests (Bértola, 2015 cited in Fouquet, 2019: p.5). Furthermore, much of the explanation for the failure to use natural resources effectively is down to the institutions (Clay, 2010 cited in Fouquet, 2019: p.5).
- **Role of energy system transitions:** Major energy technologies and transitions have been fundamental to major phases of economic growth in history (Freeman & Louça, 2001 cited in Fouquet, 2019: p.11). The growth in markets for energy sources were closely linked to other technologies and industries. These energy systems created mutual markets for each other’s products, achieving economies of scale and declining costs.

Fouquet (2019: p.12) concludes that “institutional support [for green growth] will not be needed in the long run” but “will only be required to place the economy on the new ‘green growth’ pathway.”

Worker (2017) highlights the importance of political economy analysis in assessing ways to frame proposed policies to catalyse new coalitions or address vested interests. Naess et al. (2015) apply a political economy analysis to case studies on low carbon energy in Kenya and carbon forestry in Mozambique, examining the intersection of climate and development policy. In doing this they “demonstrate the critical importance of politics, power and interests when climate-motivated initiatives encounter wider and more complex national policy contexts, which strongly influence the prospects of achieving integrated climate policy and development goals in practice.” From this analysis they argue (Naess et al., 2015):

1. Understanding both the **informal nature and historical embeddedness of decision making** around key issue areas and resource sectors of relevance to climate change policy is vital to engaging actually existing politics; why actors hold the positions they do and how they make decisions in practice.
2. Understanding and engaging with **the interests, power relations and policy networks** that will shape the prospects of realising climate policy goals is needed.
3. By looking at the ways in which common global drivers have very different impacts upon climate change policy once **refracted through national levels institutions and policy processes**, it is easier to understand the potential and limits of translating global policy into local practice.

4. Climate change and development outcomes, and the associated trade-offs, look very different **depending on how they are framed, who frames them and in which actor coalitions**. Understanding these can inform the levers of change and power to be navigated, and with whom to engage in order to address climate change and development goals.

Transitions theory and political science

Roberts et al. (2018: p.304) explore the politics of accelerating low-carbon transitions, using three themes to organise ideas and examples:

- 1) **The role of coalitions in supporting and hindering acceleration**: The key points from Roberts et al.'s (2017: p.306) discussion of this theme are that "coalitions of government, business and civic actors matter for accelerating transitions, and that in practice, they are often opportunistic alignments of actors motivated by concerns other than mitigating climate change. These coalitions, furthermore, must fight an uphill battle to defeat counter-coalitions." From reviewing the literature, Roberts et al. (2017: p.305) highlight the following important points in relation to coalitions: they have a need to be supported both financially and politically, parties with divergent views need to be bought on board, climate change mitigation is often a "co-benefit" to the actors engaged and their main priorities will be outside of this (e.g. energy security, job creation etc.) (see also Schmitz, 2017). There is still further work needed, especially into the composition of successful and unsuccessful alliances.
- 2) **The role of feedbacks, through which policies may shape actor preferences which, in turn, create stronger policies**: Roberts et al.'s (2017: p.307) summarise this theme discussion by highlighting that "Transitions (and policies) are often started by coalitions, which may well evolve over time along with the policies they initially supported. Contextual factors, including economic structures, national technological infrastructures, and political institutions will also be an important determinant of policy feedback effects, because context shapes the immediate political consequences of policies. This link to context makes policy feedback a particularly apposite framework for comparative research, across contexts or across types of policy." Feedback and stability are closely linked to the other two themes. Lederer et al.'s (2018: p.12) argument that a key characteristic of the green economy approach "is that ecological, social, and economic issues should be approached in an integrated manner and that they entail different types of feedback effects" – i.e. synergies from positive interactions and trade-offs from adverse effects, builds on this point. Both synergies and trade-offs are the result of interaction, may come about through either deliberate action or as unintended consequences, and can themselves be subject to bureaucratic management. The analysis of the politics of a green economy should thus be concerned with identifying possible synergies but even more with discerning trade-offs and the resulting winners and losers.
- 3) **The role of broader contexts (political economies, institutions, cultural norms, and technical systems) in creating more (or less) favourable conditions for deliberate acceleration**: The nature and speed of low-carbon transitions varies enormously between different national, regional, and local contexts. The influence of context on transitions is likely to be shaped by factors discussed in the other two themes. Roberts et al.'s (2017: p.307) summarise this as "The effects of diverse political economics will

partly shape coalitions both supporting and opposing change, institutional context and associated ideas can influence the immediate impacts of policies, and the extent to which these impacts create feedbacks. Temporal context is also important. Depending on the configuration of political and economic forces at any one time, 'windows of opportunity' might open up around which discourse coalitions, policy entrepreneurs and new coalitions of interest can mobilise to accelerate change. Key contextual dimensions which may affect the scope for the deliberate acceleration of low-carbon transitions include technological capabilities; natural resource endowments, industrial specialisation, and cultural repertoires." The authors also caution that trying to apply insights from one context to another is itself inherently difficult and risky.

The role of the State in green economy discourses and sustainability transitions

Andrews and Nwapi (2018) explain that different ideological swings in the global political economy resulted in what may be regarded as the rise and fall of the state's centrality in economic development. In the current era, the state is seen as a viable option to correct the failures of globalisation.

Death (2015) explores four discourses of the green economy (the discourses of green resilience, green growth, green transformation and green revolution), a term which means different things to different people and in different contexts. He highlights that there has been a relative dearth of in-depth analysis of green economy strategies in the global South, meaning that understanding is restricted, especially in relation to national strategies and developmental programmes being deployed. Death (2015) in his review highlights how the four discourses (all interconnected) have manifested in different real-world examples of national green economy strategies in the global South³, and have different political implications demonstrating the political significance of the

³ **Green resilience** – brings 'the climate crisis' and 'the environmental crisis' into stark visibility, together with their impact on vulnerable societies, and a resilient green economy is to be achieved by a combination of technocratic interventions by states and development institutions, together with empowered communities who (it is hoped) can draw on their own sources of resilience. **Ethiopia's** 'Climate-resilient Green Economic Strategy' is a high-profile example, which is a largely top-down project driven by an autocratic president; it can be seen in a longer history of state-led, hierarchical and often coercive modernisation projects (Death, 2015: p.2212-2213).

Green growth – has been the dominant global form of the green economy discourse since the financial crisis, with environmental changes and programmes primarily viewed as an economic opportunity, not a threat. Most national development strategies in the global South emphasise the importance of achieving higher levels of growth and development, and many present green technologies and investments as one way to 'leapfrog' older and more inefficient industrialisation paths. Prominent examples include Ethiopia, China and South Africa (Death, 2015: pp.2213-2214).

Green transformation – economic growth remains the driver of progress, the environment is a resource for human development and green developmental states are the regulators and guarantors of development. South Africa's 'Green Economy Accord', Mozambique's 'Green Economy Action Plan' and Rwanda's 'National Strategy for Climate Change and Low Carbon Development' are all examples of national strategies with strong elements of this transformational discourse. **South Korea** is the most prominent and most frequently cited example of green transformation (Death, 2015: pp.2215-2216).

Green revolution – environmental activists have been crucial in building pressure for more transformational green economy strategies, but many such activists are now publicly sceptical of mainstream discourses of green growth and green transformation, and are often attached to a discourse of "green revolution" – a realignment of economic (and hence social and political) relationships to bring them in line with natural limits and ecological virtues. **Costa Rica** has received international praise for its revolutionary approach to the green economy, including turning payments for ecosystem services from a principle into practice and its commitment to eco-tourism. Yet champions of this discourse have also attracted criticism for failing to live-up to their revolutionary potential in practice, for example, **Costa Rica** has discovered that rising land values mean that it has become

type of green economy discourse adopted by governments. He concludes that “the major commonality in all these national strategies and articulations of the green economy is the **central role of the state**” (Death, 2015: p.2219). Although he cautions that “the emergence of green states in the global South[...] – defined here as states which use the discourses of environmentalism and ‘green branding’ to legitimate their development politics – might have more in common with colonial, racist or authoritarian states than some of the more optimistic narratives of ecological modernisation assume” (Death, 2015: p.2219).

Johnstone and Newell (2017) explore understandings of the multiple and conflicting roles that states play in sustainability transitions. A number of positions have been advocated in relation to the state and sustainable energy transitions. Johnstone and Newell (2017: p.79) conclude that there is a need to “widen the analytical lens in transitions thinking to incorporate and understand the multiple and diffuse forms of state power,” but that this “requires an appreciation that the state is not neutral with respect to the actors and processes it is charged with regulating” (Johnstone & Newell, 2017: p.79). They present five ways of conceptualising the role of the state in sustainability transitions, namely (Johnstone & Newell, 2017: pp.76-79):

1. *Historical understandings of the state*: This goes beyond tracing the history and evolution of particular policy interventions, with the emphasis on how particular approaches to and ideologies of regulation are circumscribed by the broader political economy in which they are evolving, as well as seeking to re-shape. Bringing to the fore shifts in the form and functioning of the state overtime, including power dynamics .
2. *Global and spatial analysis of the state*: Global and spatial analysis of the role of the state in transitions re-embeds the state within networks of power normally associated with the landscape; appreciating where global shifts have reconfigured state autonomy and recognising the power of global institutions to influence the form and direction of transition pathways across the globe.
3. *Multiple dimensions of state power*. The multi-functionality of states and the multiple dimensions of state power (such as the role of the military establishment) should be accounted for in the role of the state in transitions. ‘Non-environmental’ policy regimes will often be more decisive in determining, and often undermining, the effectiveness of policies pursuant of transitions to sustainability.
4. *Relational understandings of the state*: Need to avoid fetishising the state as a political and institutional configuration abstracted from broader social and economic relations that characterise the economic system in which states are situated and within which they have to compete. Addressing who the state serves and which interests it seeks to protect is vital to assessing the prospects of more radical and progressive interventions.
5. *Material accounts of the state*: Important to recognise the material implications different technologies have, and how this impinges on the institutional practices of the state. The characteristics or materialities of ‘technology’ contribute to the (re)production of different forms governmental practice or governmentalities.

‘un-economic’ not to farm land, even when ecosystem services are fully priced (Death, 2015: pp.2217-2218).

Brazil is another example of a national development trajectory that, while sometimes progressive, hardly lives up to the potential for a green revolution. Its green credentials have been further tested through the Presidency of Bolsonaro who has overturned many of Brazil’s green growth strategies and protections. This demonstrates the vulnerability of country’s attempts to pursue green pathways to political dynamics.

Kemp and Never (2017) suggest options for what governments in developing countries can usefully and realistically do to phase in green technologies by learning from more advanced countries, using successful phase-in cases of energy efficiency and solar-PV in industrialised economies (Germany, the Netherlands) and, more relevant to this review, emerging economies (China, India). **They argue that phasing-in of green technologies in developing countries is more about utilising the opportunities already present that coincide with development objectives.** The paper takes a transition management perspective to phasing-in green technologies. Transition management “seeks to overcome a situation of lock-in and market failure by co-producing and coordinating policies step by step with clear targets and programmes for system innovation” (Kemp & Never, 2017: p.69). **Transition management assigns an active role to states** in mobilising resources and interests in society towards change and requires a long time-span with several cycles of adjusting policies. Kemp and Never (2017: pp.81-82) highlight the following six elements as being useful, helping to enhance the chances of success of a green transition (although in no way guaranteeing it):

1. **Pro-active planning** on the part of government (in the form of a long-term vision and a clear roadmap with interim goals and steps) constitutes a useful starting point for any transition approach, in providing direction and guidance to innovation actors and investment decisions.
2. **Careful selection of options for support** and the forms of support and is best done with the help of independent experts. Subsidy schemes should be time-bound, and monopoly rents should be avoided. Auctions are a useful model here. Rent management (for new and old technologies) should be mindful of the politics that operate (the opposition from fossil fuel companies and opposition from within the government), who will use negative outcomes to delegitimise the entire transition project, in an attempt to dissolve it.
3. **A sequential approach** helps to make use of contingencies and lessons, while maintaining a sense of direction. This can take the form of gradual tightening of regulations and standards or the testing in pilot projects before supporting a broader up-scaling.
4. **Explicitly including policy learning** in the phase-in process to achieve socio-economically acceptable and successful implementation (this is connected to the third element). Policies need to be adjusted to new (market and technology) circumstances and remedy negative effects (in the form of windfall gains for some groups and the occurrence of new problems because of problem shifting). The Chinese and Indian cases have shown that allowing some policy space for strategic bundling of interests at local levels may be an important part of this policy learning.
5. **Designing a policy package** has been helpful in the examples examined. This policy package can include both policy-push and market-pull policies as well as R&D, institutional capability, skill and job creation measures, e.g. building up a consultancy and certification industry.
6. **Adequate implementation control mechanisms** need to be put in place. The building and financing of technology-testing facilities and the evaluation of implementation schemes are as important as fostering consumer awareness for an energy efficiency label, for example.

Institutions, coalitions and actors

Worker (2017) in a GSDRC Topic Guide looks at climate change governance and the political economy of climate policy development and implementation at the national scale. Worker (2017: p. 13) gives examples of how **countries are addressing the institutional challenge of dealing with climate change in different ways with creative climate commitment devices**. For example, **China** has created the National Energy Commission, which has ‘super ministry’ status and can influence other ministries and reports directly to state council (Bailey, 2014 cited in Worker, 2017: p. 13). At the same time, China’s government has given significant autonomy to provincial governments to experiment with policies to achieve the targets and goals. The Topic Guide also highlights how “Most countries face huge political challenges to decarbonise their economies while addressing structural and societal drivers of vulnerability [...] **Effective responses will require building new coalitions and strengthening existing ones**” (Walker, 2017: p. 18). Institutional capacity determines the ability to either take on the active coordination of intersectoral mitigation actions or to engage nonstate actors in making up for the state’s limited capacity. Worker (2017: p. 21) finds that “renewable energy policy implementation can become **more achievable when multi-stakeholder coalitions recognise their interests are aligned and they can act collectively to strengthen institutions** and foster a better enabling environment for implementation.” Coalitions may need support to seize windows of opportunity when vested interests are politically vulnerable because of energy price volatility, new political narratives or external pressure.

Pegels et al. (2018: p.28) argues that “**although governments need to play a proactive role, they cannot bring about change at the required scale and speed single-handedly**. They need to coordinate with nonstate actors.” Pegels et al. (2018: p.29) elaborate that governments need to play a more active role in in guiding markets but also to introduce additional and fundamentally new policy instruments. These actions need to be coordinated with nonstate actors. They further argue that “For green energy policy to be successful, three main conditions need to be ensured: efficiency, effectiveness, and legitimacy” (Pegels et al., 2018: p.30). These three conditions share four underlying factors (Pegels et al., 2018: p.31):

- **Broad societal agreement on the direction of change** – this lends legitimacy to transformative policy and increases its effectiveness. Morocco is an illustrative example of this, where the government has legitimised its actions in greening the economy by developing a long-term vision for green growth, building coalitions across national state and nonstate actors, harnessing synergies from green investments in different sectors (i.e., energy, agriculture, manufacturing, and housing), gradually reforming fossil-fuel subsidies, and seeking ways to compensate vulnerable population groups (Vidican-Auktor, 2017 cited in Pegels et al., 2017: p.32).
- **Change alliances** – can strengthen the chances of broad societal agreement, since less powerful actors can join forces to support the transformation. For example, alliances can be seen as vehicles for bundling diverse interests, employment effects in particular have been crucial arguments for the green transformation in emerging economies such as China and Brazil.
- **Systematic policy learning** – enhances effectiveness and also efficiency. India and South Africa provide interesting examples of systematic policy learning over time in relation to renewable energy introduction, in particular solar and wind energy.
- **The use of market mechanisms to manage policy rents and political capture** – improves efficiency, increases effectiveness and legitimacy.

Lederer et al. (2018: p.12) **warn against a simplistic linear understanding of change and cause and effect in capturing the influence of actors in transformations.** They approach the analysis of the politics of a green economy “as being the product of competing constellations of opportunity structures (see Clemencon, 2016; Han, 2017), actors and discourses.” They highlight the role of change agents as strategic actors who are (sometimes unconscious) pioneers of social change. They focus on different analytical aspects that may drive proactive state behaviour toward a green economy: analysing whether, why, and how particular interests are given preferential treatment in the context of national policy formulation and implementation (e.g. Costa Rica) or are hardly included at all (e.g. China).

Schmitz (2017) explores the question – **who drives low-carbon policies?** – focusing on the rising powers of Brazil, China, India and South Africa. Schmitz (2017: p.522) stresses that “transformation results from a concurrence of multiple changes.” Transformation requires path creation (rather than path dependency), which requires agency distributed across heterogeneous actors, and there is a wide theoretical literature on this. While different groupings have been put forward (mostly around civil society, government, incumbents, entrepreneurs – see Schmitz, 2017 for further references and information on this), there is recognition that **no single group can bring about the required changes.** Reviewing political science scholarship, he finds a well-founded body of evidence that coalitions, particularly multi-sectoral ones, can be effective in addressing collective action problems. Schmitz (2017) uses political economy analysis to explore four case studies (see Brazil, China, India and South Africa sections below for summaries). The **syntheses pay more attention to government and business actors, but Schmitz (2017: p.534) emphasises that this does not imply that civil society organisations are irrelevant** but that “they have been less influential, or at least seemed to have been, in the case material” reviewed. Schmitz (2017: p.534) draws three general conclusions from the case studies:

1. **The motives for supporting climate-relevant policies vary a great deal.** These motives can be seen to fall into two groups: material and moral. Most importantly, they are not mutually exclusive but – in some cases – complementary. In all four cases the most significant actors had other priorities other than climate change mitigation.
2. **There are different types of alliances.** At one end, there is the strategic alliance based on joint action; at the other is the mere alignment of interest without coordination between the parties. Closely related and also very useful is the distinction between consciously pursued and incidental alliance. Both can be transitional (short term) or enduring (long term), but the incidental alliance is more likely to be short term.
3. **Alliances make a difference and are instrumental in accelerating change or blocking it.** Although the case material on how alliances organise and operate is patchy. Furthermore, Schmitz cautions against getting carried away with alliance thinking.

The cases say less on who obstructs climate-related policies, but important insights emerge (Schmitz, 2017: p.534):

- **Energy shortages provide a window of opportunity to create new paths** and to try out and establish renewable energies. Opposition from the fossil fuel industry did not seem to play a role in the cases of China and India because energy shortages due to rapidly rising demand were the main concern. The advance of one was not at the expense of the other.
- **Context matters and there are many contextual variables.** The key ones emerging from the reviewed cases are natural endowments (for example, fossil fuel reserves), the

degree of energy shortage, what stage the country is at in its transition to renewables, and the institutional system.

What is the “developmental state”?

The “developmental state” concept has been prominent in political economy discussions after it was used to explain the economic transformation experienced by East Asian countries such as Japan, South Korea, Taiwan, Hong Kong and Singapore after World War II. Andrews and Nwapi (2018: p.49) in their analysis of the emerging developmental state in Africa’s energy sector, explore the literature on the developmental state and explain that “Simply put, a developmental state is one that ‘gives first priority to economic development’ ([Johnson, 1999], 37). [...But,] the developmental state also implies state-led development or state intervention in economic policy.” Johnson’s (1999) seminal piece on the developmental state in Japan, which highlights key strategies that made Japan’s impressive economic success a “miracle”, emphasises the state as a major (though not sole) factor. The concept of the developmental state is also associated with industrial policy, which is often “characterised by state promotion of infant industries via instruments like export facilitation, subsidies to local industries, trade protection, and preferential treatment in favo[u]r of local businesses.” Based mainly on Johnson’s (1999) seminal work on the East Asian experience, scholars have identified a set of four defining features of a successful developmental state, including **development-oriented political leadership**, an **autonomous and effective bureaucracy**, **performance-oriented governance**, and **production coordination and conflict management** (Andrews & Nwapi, 2018: p.49).

Nem Singh and Ovadia (2018: p.1035) highlight three key elements of the developmental state model, although they caution that there is a need to avoid one-size fits all approaches to development policy:

(1) state transformation through the creation of a professionalised, meritocratic bureaucracy alongside a fairly insulated group of technocrats, which overall constitutes the historical development of state capacity widely referred to as ‘pockets of state efficiency’; (2) a pro-business orientation in policy-making that created a mutually-beneficial alliance between states and big business, notably referred to as ‘embedded autonomy’; and (3) the presence of exceptionally difficult circumstances, which then creates a structural condition in which national elites must deal with their ‘systemic vulnerability’ and hence focus on economic development as the principal source of their political legitimacy.

Dent (2018: p.1192) explains that there are “hard” developmental states (e.g. Japan, Singapore, South Korea and Taiwan) and “soft” developmental states (e.g. Thailand, Malaysia, Indonesia and the Philippines) which practiced certain features of developmental statism less rigorously and effectively. Furthermore, developmental statism is part of a broader state capacity paradigm that includes conventionally classified ‘socialist market’ states like China and Vietnam, where state-owned enterprises dominate over key areas of the economy.

There have been questions as to the extent to which the developmental state model(s) can be adapted beyond East Asia’s geographical, socio-political and historical conditions to provide alternative ways of doing development in the global South. But many scholars see that beyond its origins in East Asia’s export-led industrialisation, the developmental state framework continues to offer a useful approach to analysing the role of the state in economic and social development (see Nem Singh & Ovadia, 2018). Nem Singh and Ovadia (2018) highlight

Argentina, Brazil, Ethiopia, Rwanda and China as newer examples of developmentalist thinking with varying success. Their growth strategies involve centralising rent management, strengthening political ties between government and domestic capitalists and adapting industrial policy and state-backed finance to create new competitive advantages.

There are varied experiences of state-directed development, and the relationship between the type of political regime and the developmental state is complex and multifaceted. Examining recent transformations of developmental states, Williams (2014: p.2) argues that “some kind of developmental state is essential to achieve development in the twenty-first century.” However, emphasises that the assumption that there is a blueprint of effective state structures and action must be rejected. Williams (2014) maintains that scholars need to rethink and expand the analytical reach of the developmental states. In her introduction to *The end of the developmental state?* she puts forward four pivotal conditions that have compelled changes in the goals and strategies of recent developmental states (such as Brazil, China, India, South Africa and South Korea): economic restructuring, domestic politics, epistemic shifts and ecological limits. The volume hence eschews model thinking but encourages lessons to be learned from the country experiences, encouraging “country-specific development that takes seriously local conditions, social demands from a myriad of class forces and domestic politics” (Williams, 2014: p.24).

The developmental state and low-carbon development

Dent (2018) looks at how countries in East Asia have moved beyond original conceptions of developmental statism with new and evolving forms of state capacity to respond to the global challenge of climate change, using South Korea and Singapore as case studies. Dent (2018: p.1191) argues that this “new developmentalism⁴ is most clearly evident in East Asia but can be applied in a wider geographic sense where strong forms of developmental state capacity are exercised towards meeting transformative sustainable development goals.” The nature and practice of state capacity in East Asia have evolved significantly over time. Dent (2018) argues that the challenge of addressing sustainable development has presented more of an opportunity than a threat to state capacity in East Asia. Despite the rise in civil society and its role in development, “a top-down authoritarian state approach to pushing through low-carbon development strategies has often been a political and institutional feature of East Asia’s new developmentalism” (Dent, 2018: p.1196), and this is demonstrated in his discussion of South Korea and Singapore.

From the South Korea and Singapore case studies and his analysis, Dent (2018: pp.1204-1205) describes the following conditions as being needed for new developmentalism’s future success:

1. **Deeper societal participation and engagement:** The importance of the state co-opting society into transformative development projects has been emphasised. Civil society is a crucial stakeholder in terms of contributing ideas on strategy design and providing useful societal intelligence feedback on strategy impact. For example, in Singapore – where state capacity is extraordinarily strong – the government sought public opinion concerning the Sustainable Singapore Blueprint’s design, implementation and outcome stages, but was nevertheless criticised for being essentially elite–technocrat-driven and

⁴ An analytical synthesis of state capacity and ecological modernisation theories (see Dent, 2018).

top-down generally. South Korea's recent political leaders have also generally adopted a top-down approach in pushing through their own sustainable development agendas.

2. **Addressing contradictions and inconsistencies** often evident within new developmentalist plans themselves, and between those plans and other concurrent development policies. For example, in South Korea, the First Green Growth Strategy co-existed with the then Ministry of Trade, Industry and Energy's parallel industrial strategy of upgrading various stalwart energy-intensive sectors such as shipbuilding and steel. Singapore's aforementioned burgeoning petrochemical complex on Jurong Island remains central to the government's core industrial policy.
3. **Consolidation and continuity of strategy:** This is crucial for effective implementation. Mono-regime authoritarian states may be expected to adhere to long-term new developmentalist strategies and thereby consolidate their gains. For example, China has proved more successful at meeting its green energy sector targets, than Japan, South Korea and Taiwan. Although this authoritarian new developmentalism may persist for a while yet, we can expect over the longer term more organic, bottom-up societal influence on shaping future paths of low-carbon development.

Vazquez-Brust et al. (2014) explore the idea of a "Green Growth State" in their paper, looking to connect the gap between Green Growth and Developmental State studies, with a focus on the case of **South Korea**. They argue for the importance of the Green Growth State and highlight key elements of this overarching concept for transformation as broadly being: **a flexible, sequential and diverse policy mix; value-driven, multi-stakeholder, multi-level governance; public trust and collaboration; and appropriate measurements of progress discouraging commodification of nature**. Vazquez-Brust et al. (2014) argue that as coordination needs characterise early stages of any socio-technical transition, markets will be inefficient in the initial stage of transitions from "brown" growth to "green" growth, and that **state intervention will be necessary**. They highlight that this was the case in the East Asian miracle (i.e. the economic growth of East Asian countries after World War II). They use the example of South Korea, where "the development of the Green Growth agenda has been underpinned by a continuation of a strong government direction, but an overt concern for social cohesion and distributive justice" (p. 46). According to their analysis, Vazquez-Brust et al. (2014: p. 46) suggest that "successful developmental capitalism states require "corporate coherence" – among state officials in their commitment to the goals of the state – and connectedness to groups in civil society – including both developmental elites and community/neighbourhood representatives." Furthermore, they argue that "the key to wider transition is most likely to be appropriate interdependent networks of individuals in key positions, such as in the South Korean Green Growth State where the Presidential Committee on Green Growth (PCGG) was drawn from governmental ministries and the private sector (Mathews, 2012; Rhee et al., 2012b)" (Vazquez-Brust et al., 2014: p.46). However, public private collaboration needs to be balanced with wider societal embedding to avoid capture of the state by business interests. This need is illustrated by more recent gridlock in the traction of the Green Growth agenda in South Korea, where, after initial support, private companies later moved to oppose the speed of economic greening (Vazquez-Brust et al., 2014: pp.46-47).

3. Case studies

Brazil

Schmitz (2017: pp.530-532) explores the case study of Brazil, which has met increasing energy demand with renewable sources, mainly biofuel (sugar cane) and hydropower. The high share of renewables in the energy mix has helped Brazil to take a climate-friendly position in international fora and is the result of government policies adopted over the course of four decades. The policies were driven by foreign exchange, energy security, industrial policy and job creation motives, similar to the motives that prevailed in China and India (see case studies below). However, translating global ambitions into national realities has been difficult because more recent climate policies have cut across additional sectors, creating power struggles and conflicts between ministries and rent-seeking industries, slowing progress (Schmitz, 2017: pp.530-532). Under the presidency of Dilma Rousseff, the climate agenda lost momentum because of these conflicting interests, and with the accession of Bolsonaro have slipped further.

Furthermore, wind and solar are relatively underdeveloped in Brazil despite considerable resources. Interestingly, concerns from opposition within the renewables sector itself (from hydroelectricity and sugarcane industries) have seemed to have played a role in undermining energy and solar. This demonstrates that the political dynamics are more complex than low carbon versus high carbon sources. **This competition among renewables producers is often overlooked within political economy analysis of climate-relevant policies. It is important to pay attention to the context in which conflicts between low-carbon forces take place** (Schmitz, 2017: pp.530-532). In Brazil, **this context is one of shrinking political space for low-carbon solutions and increasing political space for high-carbon solutions due to the discovery of significant oil reserves off the Brazilian coast.**

China

Schmitz (2017: pp. 525-526) explains that although China has been the world's biggest carbon emitter since 2006, it is incentivising investment in renewable energy to try to contain its emissions. Making renewables a priority has a strong legal foundation in the Renewable Energy Law of 2006, an umbrella regulation for renewable energy development. **Climate considerations, however, were not the driving force behind the Renewable Energy Law, key concerns were securing energy and building a competitive industry.** This aim to build up competitive green industries added to the political support for renewable energy policies. While policy formulation takes place at the central level, with the state seen as the central actor formulating policies in a top-down fashion, implementation has required active participation at the local level. Shen (2016 cited in Schmitz, 2017: p.230) has argued that, in recent years, business has come to play an active role in all stages of climate-relevant policy processes, particularly renewable energy, with an informal coalition of state–business actors playing a key role. The key actors are from the Energy Bureau of the National Development and Reform Commission (NDRC), state-owned power utility companies, and large wind and solar parts manufacturers. Essential to the success of the coalition were opportunistic narratives that appealed to other parts of the state apparatus, which had different concerns such as energy independence, national security, technological catch-up, industrial expansion etc. The coalition encountered little opposition from the fossil fuel industries because of China's rapidly growing energy demand the expansion of one was not at the expense of the other. Schmitz (2017) summarises that **the question of who drives climate-relevant policies in China does not have a simple answer;**

it varies over time and along the central–local axis. The bundling of interests, however, has been important in all instances, supporting the coalition perspective.

India

In recent years, India's climate-relevant policies have been driven by concerns over climate change adaptation, secure energy access and job creation (Schmitz, 2016), with emission reductions considered a co-benefit. Schmitz (2017: pp.528-530) highlights the work of Chaudhary et al. (2014) who explore the solar and wind energy sectors to show that there are no easy answers to the question of who drives renewable energy policies in India. Many policies were adopted over different phases, with big differences between sectors, states and changing actor constellations. The solar sector benefits from the more comprehensive policies and political support. The largest policy initiative is the National Solar Mission, which is an explicit part of India's National Action Plan on Climate Change. One of the key drivers of the National Solar Mission was Indian policy-makers' aspiration to become a major global solar player by establishing a domestic solar manufacturing base. **While energy security also played a role, it was the sector's industrialisation potential (with associated economic growth and job creation possibilities) that was the more important consideration for central policy-makers.**

Political support for the wind energy sector is mainly due to energy security, and links back to the global energy crisis of the 1970s. The National Ministry of New and Renewable Energy became the most important institutional actor in shaping policy and securing resources. State governments also played a key role. Concerns with fostering industrial development did not drive the wind policies, at least not on the government side (Schmitz, 2017: p.529).

Of interest to note, was the lack of opposition to solar and wind from fossil fuel industries, this is related to the fact that energy shortages were, and continue to be, a major problem in India. Schmitz (2017: p.530) summarises that the **articulation of a co-benefits approach has enabled stakeholders to engage in the climate change debate** in India without conceding on their priority of accelerating economic development. The pursuit of energy security has been the most powerful driver of domestic action. Other than the co-benefits approach, however, no coherent strategy exists, as is exemplified by the contrasts in political support for wind and solar power.

South Africa

Schmitz (2017: pp.532-533) explain how cheap and plentiful coal-generated energy has been essential for South Africa's "minerals and energy complex". Actors from business, the government and trade unions have used their engagement in the policy-making process to keep energy prices low and minimise the amount spent on supporting renewable energy, with a key player in this alliance being the state-owned energy supplier Eskom. However, a crisis in electricity supply has loosened the grip of the minerals and energy complex on the policy process and driven the development of renewable energy policies. On the government side, the coalition in favour of renewables consists of the Policy and Clean Energy Branch of the Department of Energy, the National Treasury, the Department of Environmental Affairs, and parts of the Department of Trade and Industry; and private sector support comes from foreign-based independent power producers and ancillary business professionals tied to their operations (Schmitz, 2017). This multi-sectoral constituency is aligned under the Renewable Energy Independent Power Producer Procurement Programme (RE-IPPPP), which is inter-ministerial.

This alliance is gaining influence over the policy process and creating a platform for a renewable energy path, but the process has been messy. The main opposition to renewables comes from Eskom and its allies in the Departments of Public Enterprises and of Minerals and Energy (Worker, 2017). **Moves towards renewables continue to be contested and there remains a struggle between these two coalitions, one against and one in favour of renewables, splitting the public and the private sectors while civil society (trade unions and householder associations) remains undecided.** Political momentum for the renewable energy programme has also been important in its success. The renewables agenda is thus linked to an agenda of breaking up a vertically integrated, state-owned, company backed by the Department of Public Enterprises and Department of Minerals and Energy (Schmitz, 2017: p.533).

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