

Enabling a just transition to a low-carbon economy in the energy sector

Progress and lessons in Emerging Markets

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Who this paper is for

This paper is for stakeholders in the just transition, including governments, businesses, investors and civil society.



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Executive summary

A just energy transition requires an integrated social, environmental and economic approach to shift countries to a near zero-carbon economy in a way that supports social welfare and cohesion.

The clean energy transition currently underway, mandated by the Paris Agreement and driven by the falling cost of renewables, will impact jobs in fossil fuel-based energy production. Yet enabling a just transition could reduce inequality, boost sustainable development, and create new economic opportunities.

There is broad agreement on the concepts a just transition should focus on – namely jobs, social welfare, individual wellbeing, and financial sustainability. However, specific policies will vary depending on the sector, geography and local economy. This paper therefore highlights key considerations and sets out how to plan a just transition process, rather than making detailed policy recommendations.

Just transitions are relevant to all countries, however, this report focuses on progress in the energy sector in BRICS countries (i.e. Brazil, Russia, India, China and South Africa) and the Next 11 emerging markets, comparing approaches to distill best practice in achieving local objectives.

We also identify progress indicators and essential pre-requisites for a successful just transition in the energy sector, including the need for inclusive and carefully designed social dialogue between affected actors.

Recommendations on policymaking/process:

- ◆ develop an economy-wide vision and plan for the just transition not limited to the locations and sectors most affected
- ◆ based on this broad vision, create in-depth plans for transitions that affect specific communities, groups and locations
- ◆ create a strong foundation for the just transition across all sectors by bolstering workers' rights and social protection

Recommendations on engaging key actors:

- ◆ create platforms to engage wider actors beyond governments, state-owned enterprises (SOEs) and trades unions, to be more inclusive of non-unionised and informal workers, civil society, and the private sector
- ◆ harness the power of those most engaged in key sectors to ensure agreed measures are implemented and to encourage diversification into low-carbon opportunities and technologies – for example, by increasing government oversight of SOEs
- ◆ incentivise the private sector to engage with and lead the just transition, and remove disincentives, such as fossil fuel subsidies
- ◆ ensure disempowered groups are represented in social dialogues on the just transition and have a fair and equal voice in planning and policymaking

Three pillar just transition policy framework

What is the just transition?

The International Labour Organisation (ILO) provides a comprehensive and widely used definition of just transition that captures a holistic approach:

"A bridge from where we are today to a future where all jobs are green and decent, poverty is eradicated, and communities are thriving and resilient. More precisely, it is a systemic and whole of economy approach to sustainability. It includes both measures to reduce the impact of job losses and industry phase-out on workers and communities, and measures to produce new, green and decent jobs, sectors and healthy communities. It aims to address environmental, social and economic issues together."

The concept has also been adopted in various international agreements, including the UN Framework Convention on Climate Change; the UN Sustainable Development Goals (SDGs); international federations,

such as the International Trade Union Confederation; and in the context of key international meetings, such as the 2018 G20 Summit to be hosted by Argentina.

The ILO proposes three policy pillars that lay the foundations of a just transition: macroeconomic and sectoral, employment, and social. At first glance these appear to be standard policy categories, but the secret of integrating the 'just' factor relies on cohesiveness between policies, which is captured from active dialogue between stakeholders. This dialogue helps minimise unintended consequences associated with individual policies and allows for differing views.

Policies required in the just transition

Policy coherence and effective institutional arrangements

Social dialogue



Source: ILO (2016)

- 1. macroeconomic and sectoral policies** are required to guide economies and sectors to decarbonise
- 2. employment policies** are needed to guide firms and skills development in the labour market
- 3. social policies** are required to ensure health and safety in the workplace, as well as social protection where jobs or pensions are lost

Policy and institutional coherence – that is ensuring policies and institutions are complementary in their approaches – helps ensure that these policies do not contradict each other and are mutually supportive and effectively implemented. For these to work together, there is a need for strong social dialogue between actors. This means ensuring those responsible for guiding or managing the low-carbon transition and the stakeholders affected have a voice and influence over decision-making processes. This is not necessarily straightforward given a plethora of stakeholder voices, and can have profound global, regional, national and sub-national impacts¹.

¹ UNFCCC, 2016, Just transition of the workforce, and the creation of decent work and quality jobs



Macro/sector

Macroeconomic and sectoral policies set the agenda and direction for decarbonisation. Policy could involve an economy wide approach, or be targeted at incentivising key sectors, such as power or transport.

Considerations

Renewable energy is increasingly seen as a viable means of supporting economic development and energy access due to technological advances and rapidly falling costs. IRENA reports that the most rapid declines in cost have occurred in emerging markets like India and China, where renewables are becoming competitive with fossil fuels². Between 2011 and 2017, China installed the largest amount of renewable energy capacity globally (8.3 percent annually), though India is catching up³. These investments are concentrated on solar power and are largely undertaken by Chinese investors⁴.

Chinese manufacturers have dominated the solar market with 60 percent of global solar cell production, whilst China's wind and hydropower firms continue to expand overseas⁵. This is the result of various policies, including leadership statements, ambitious renewable energy targets and incentives⁶.

Policies and plans in emerging markets

In relevant policy documentation from BRICS and Next 11⁷ countries, we found little reference to the just transition, impact on jobs (lost and created), or socio-economic implications of the energy transition. Although the just transition was considered in some instances, this was often fragmented and not part of a holistic approach to economic restructuring. Many countries continue to include fossil fuels in their policies and plans linked to the low-carbon transition.

² IRENA, 2018, Renewable Energy Capacity Statistics 2018

³ Ibid

⁴ Gabbatass, 2018, World invested more in solar energy than coal, gas and nuclear combined in 2017, UN report reveals

⁵ IEEFA, 2018, IEEFA Report: China in 2017 Continued to Position Itself for Global Clean Energy Dominance

⁶ See NREL, undated, Renewable Energy in China: Renewable Energy Policy in China. An Overview

⁷ Bangladesh, Brazil, China, Egypt, India, Indonesia, Iran, Mexico, Nigeria, Pakistan, Philippines, Russia, South Africa, South Korea, Turkey and Viet Nam.

We found alignment with the SDGs (including SDG 8 on decent work) and Nationally Determined Contributions (NDCs) under the Paris Agreement was strong in some of the countries analysed⁸. In 2016, China developed mid- and long-term strategies to align these agendas with a domestic coordination mechanism (including 43 government departments⁹). The Philippines NDC notes the need for ‘systemic transition to a climate and disaster-resilient social and economic growth’ and adaptation financing to reduce risks to communities¹⁰. The Philippine Government has since begun identifying national priority sectors focused on ensuring universal energy access at affordable rates¹¹. The approach taken to developing the Philippine NDC included dialogue between government stakeholders, civil society and businesses, and representation of communities adversely affected by the transition or those yet to gain electricity access¹².

Mexico’s 2016 Climate Change Mid-Century Strategy outlines the need for ‘environmental justice’ in the context of power-related environmental degradation, and job development in the clean energy sector focused on vulnerable populations¹³.

South Africa has a commitment to transition into a just, low-carbon society¹⁴. However, although South Africa’s government put in place employment policies to develop renewable energy skills, a national reskilling programme is not in place and there has been no analysis of the distributional impacts of the energy transition¹⁵ or the socio-economic impacts of phasing out coal. According to the UNFCCC (2016) existing policies, such as the South African National Climate Change Response (2012), may exacerbate already high unemployment levels and severe income distortions.

In some cases, there are plans to support the energy transition, such as an electricity access programme in Indonesia in disadvantaged areas and outlier islands. However, such plans do not consider the key elements of the just transition¹⁶. Another example is found in Bangladesh, where building regulations require buildings with more than ten floors to install rooftop solar panels to deliver three percent of electricity, but there is no associated plan for engaging stakeholders in social dialogue¹⁷.

Egypt’s 2030 Green Economy Strategy aims to align wider economic development with environmental and climate objectives, yet the energy focus area includes plans for significant coal power expansion¹⁸. The same holds true for Pakistan’s NDC, which aims to reduce emissions by up to 20 percent by 2030 including through renewable energy deployment, but which also includes reference to improvements in coal efficiency¹⁹. This suggests that high carbon lock-in within the energy sector can create a barrier in the energy transition of such markets.

In addition, several barriers to increasing ambition in the just energy transition remain. Key macroeconomic policies, such as fossil fuel subsidies, continue to be provided in all the countries reviewed²⁰. The IMF has found that most of the benefits from such subsidies go to the richest segments of society, and continue despite a commitment from a number of countries to phase out such support as part of a wider G20 pledge²¹.

⁸ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁹ Ibid

¹⁰ Republic of the Philippines, 2015, Intended Nationally Determined Contributions: Communicated to the UNFCCC on October 2015

¹¹ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

¹² Republic of the Philippines, 2017, Philippine Country Report

¹³ Mexico Ministry of Environment and Natural Resources, 2016, Mexico’s Climate Change Mid-Century Strategy

¹⁴ See South Africa’s 2011 Green Economy Accord and 2012 National Development Plan

¹⁵ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

¹⁶ Bright Indonesia, Equitable Energy; Devin, 2018, Wonder Woman and Renewable Energy Pioneers in Indonesia

¹⁷ FES, 2018, Let’s hoist a flag for Just Transition!

¹⁸ Khater, 2016, Partnerships for Action on Green Economy

¹⁹ Government of Pakistan, 2015, Pakistan’s Intended Nationally Determined Contribution

²⁰ IEA, 2017, Energy Access Outlook 2017: From Poverty to Prosperity; OECD, 2018, OECD Companion to the inventory of support measures for fossil fuels 2018

²¹ G20, 2017, Just Transition: A report for the OECD; IMF, 2010, The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries

Employment

Employment policies are crucial for supporting workers affected by the transition to a low-carbon economy. This could include general or sector specific laws and regulations to provide worker protection, as well as guidance for firms and individuals on skills and re-training.

Considerations

Managing both the need for transition in skills and the regionalised nature of jobs will be a key challenge in ensuring the just transition. A major challenge for emerging markets is the lack of a reliable employment data, alongside the fact that informal workers are often not included in statistics.

IRENA estimates that 9.8 million people were employed in renewable energy in 2016 and predicts this could reach 24 million by 2030.

Most of these jobs in the power sector are in Asia, including many in large hydroelectric power. China accounts for 37 percent of all jobs in renewable energy, followed closely by India²², which created 400,000 new jobs in the renewable sector in 2015²³. At the same time, there has been a global decline in fossil fuel industry employment, with 440,000 fossil fuel jobs lost in 2015-2016²⁴. Although the UNFCCC (2016) estimates that the transition to renewable energy will create a net employment gain of 0.5-2% (15-60 million jobs globally).

Historically, fossil fuel job losses have been the result of mechanisation and the declining economic viability of fossil fuel extraction. In the future, climate policy (under Paris and the SDGs) and the falling costs of alternative sources of energy will be the largest factors²⁵. Being a major oil producer furthermore does not necessarily equate to significant levels of employment; less than 2,000 people are employed in the oil and gas industry in the Niger Delta region of southern Nigeria²⁶. Nigeria's renewables job creation would focus in the north and east of the country, where solar and wind potential is highest²⁷.

Employment in transport and the just transition

As with the transition in the power sector, the shift to low-carbon transport systems will include significant realignment in the location and types of jobs in the industry and wider value chain (including as part of the transition from internal combustion engine to electric vehicles). Various positive trends are already underway, including the rise in production of electric and hybrid vehicles, rollout of mass public transport, and advances in technologies for fuel efficiency and autonomous driving. Understanding the implications of these changes for jobs will require both detailed sectoral mapping of changes in the distribution of employment, but also higher levels of economic planning to minimise the negative impact of job losses in manufacturing and in fossil fuel (and biofuel) extraction and production²⁸.

Although there is a lack of data globally on the employment implications of various new forms of transport, some sectoral and national mapping has been undertaken. Research suggests that job 500,000-850,000 jobs could be created in the hybrid and electric vehicle supply chain in the European Union alone²⁹, which would go some way towards offsetting job losses in the traditional automotive industry. Similarly, while a shift from car ownership to urban mass transit (e.g. bus rapid transit, BRT) and fleets of autonomous vehicles may require far fewer workers in the manufacture of vehicles, this could be offset by new jobs created in maintenance and the operation of public transit systems.

²² IRENA, 2017, Renewable Power Generation Costs in 2017; UNFCCC, 2016, Just transition of the workforce, and the creation of decent work and quality jobs; FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

²³ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

²⁴ IRENA, 2017, Renewable Power Generation Costs in 2017

²⁵ UNFCCC, 2016, Just transition of the workforce, and the creation of decent work and quality jobs

²⁶ Ehinomen and Adeleke, 2012, An assessment of the distribution of Petroleum products in Nigeria

²⁷ IRENA, 2016, The South African Renewable Energy Independent Power Producers Procurement Programme (REIPPPP) – Lessons Learned

²⁸ UNFCCC, 2016, Just transition of the workforce, and the creation of decent work and quality jobs

²⁹ Transport and Environment, 2017, How will electric vehicle transition impact EU jobs?

Policies and plans in emerging markets

Employment policies exist across the countries reviewed and are key to economic growth, however these are often disconnected from the energy transition and wider macroeconomic planning. Positive examples of where the two align include Mexico's 2013 green jobs assessment, which helped to identify low-carbon job opportunities³⁰. South Korea has developed a data portal that includes progress on climate change and employment goals³¹. The Philippines Green Jobs Act 2016 explicitly aims to create and incentivise 'green jobs' that are decent, productive, respect workers' rights, deliver fair income, provide workplace security, provide social protection for families, and promote social dialogue³².

Our research indicates that some jobs in clean energy may also be of a higher quality than those in fossil fuel-based power production. In China, the ILO (2016) find that wind power plants provide employment that is safer and healthier than thermal power plants. In Mexico, renewable energy jobs score 79 out of 100 on the decent work index, surpassed only by the sustainable forestry sector³³.

The power transition can also directly contribute to improved industry performance. For example, in Viet Nam, solar PV installations provide energy for cooling workers and reduce the likelihood of blackouts, improving productivity³⁴. It should be noted however, that many renewable technologies still require raw materials that can be extracted in an exploitative way, for example Germanium and indium (used in solar panels), so care should be taken when planning the transition to ensure newly created industries respect worker health and rights³⁵.

In some countries, we found foundational labour policies that may not be focussed on the energy transition, but should still support changes across the power sector. For example, in India, the 2005 Mahatma Gandhi National Employment Guarantee Act 2005 guarantees minimum wage employment for marginalised workers for 100 days a year³⁶. This could provide some protection for workers that are affected by declines in employment under the energy transition.

Job opportunities in renewables may outweigh job losses in thermal power generation, but the different locations and skill levels required mean such gains will mostly benefit a different workforce. For example, Chinese companies are positioning themselves to dominate the cobalt market, with miners expected to become responsible for 62 percent of global supply. Although not yet a major employer, this could provide a new source of jobs along the renewable value chain³⁷.



³⁰ ILO, 2014, Evaluation of the Potential of Green Jobs in Mexico

³¹ van Tilburg, 2018, NDC Update Report. Special Edition: Linking NDCs and SDGs

³² Verzola et al., 2017, Towards a Just Transition in the Philippine Electricity Sector

³³ ILO, 2014, Evaluation of the Potential of Green Jobs in Mexico

³⁴ Neefjes and Hoai, 2017, Towards a Socially Just Energy Transition in Viet Nam: Challenges and Opportunities. Bonn and Berlin

³⁵ The Economist, 2018, A scramble for the minerals used in renewable energy is underway

³⁶ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

³⁷ IEEFA, 2018, 2018, IEEFA Report: China in 2017 Continued to Position Itself for Global Clean Energy Dominance

Social

Social policies are required to ensure health and safety in the workplace, as well as social protection where jobs or pensions are lost.

Considerations

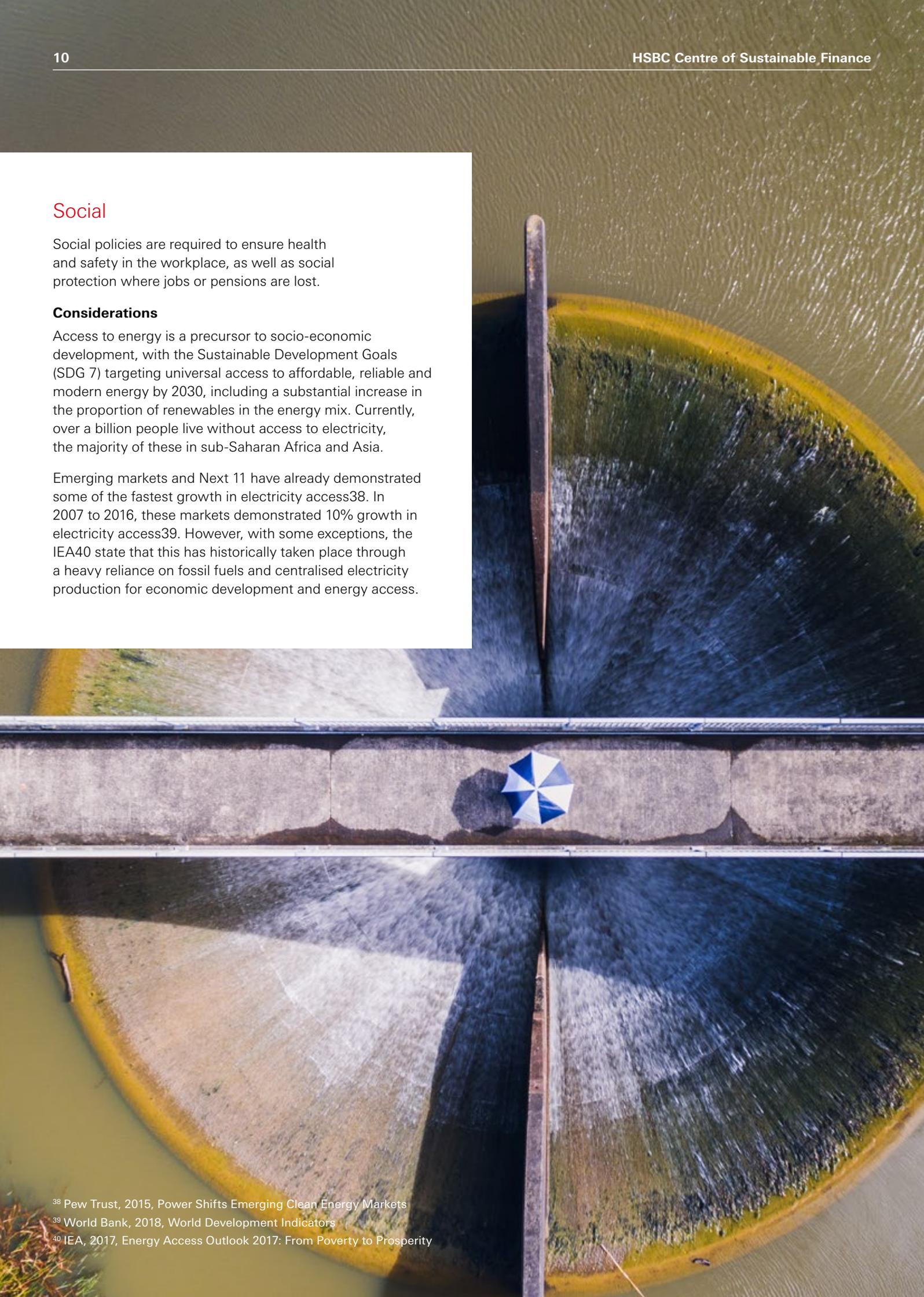
Access to energy is a precursor to socio-economic development, with the Sustainable Development Goals (SDG 7) targeting universal access to affordable, reliable and modern energy by 2030, including a substantial increase in the proportion of renewables in the energy mix. Currently, over a billion people live without access to electricity, the majority of these in sub-Saharan Africa and Asia.

Emerging markets and Next 11 have already demonstrated some of the fastest growth in electricity access³⁸. In 2007 to 2016, these markets demonstrated 10% growth in electricity access³⁹. However, with some exceptions, the IEA⁴⁰ state that this has historically taken place through a heavy reliance on fossil fuels and centralised electricity production for economic development and energy access.

³⁸ Pew Trust, 2015, Power Shifts Emerging Clean Energy Markets

³⁹ World Bank, 2018, World Development Indicators

⁴⁰ IEA, 2017, Energy Access Outlook 2017: From Poverty to Prosperity



Policies and plans in emerging markets

Social policies provide support if jobs or pensions are lost, and set health and safety standards in the workplace. Creating a supportive environment for social protection is a major element in ensuring transition processes are inclusive and help vulnerable groups adjust. However, an estimated 5.1 billion people (75% of the global population) do not have adequate social protection⁴¹.

Some countries are directly seeking to increase social protection as part of the energy transition. For example, Viet Nam's 1994 Labour Code places the onus on coal power plant 'owners' to ensure ongoing employment following closure, and Indonesia has recently reformed its fossil fuel subsidies and earmarked associated revenue gains to fund investments in social safety nets and renewable energy⁴².

In China, government restructuring plans were estimated to make 1.3 million coal miners redundant (20 percent of the total workforce). In 2016, the Chinese Government established a 100 billion yuan fund to reduce overcapacity while mitigating the negative social impacts of redundancies⁴³. Although this fund is an important first step in the right direction, it is expected to run dry in 2018⁴⁴.

As with employment policies, we found that although many social welfare policies existed in emerging markets, these were often disconnected from the energy transition or wider macro-economic and sectoral planning. In Mexico, for example, there is little evidence of unemployment insurance or other social safety nets in the power sector⁴⁵.

Where countries conducted in-depth studies into the employment opportunities of the energy transition, these did not focus on the implications of the required shift in skills and retraining needs. There are likely to be challenges in bridging the skills and capacity gap between current workers in high-carbon electricity production, and future workers in low carbon solutions⁴⁶. For example, research found that Russian local authorities struggled to deal with the need for retraining and re-adjustment of the coal workforce in areas of decline⁴⁷.

In Viet Nam, it is estimated that a business as usual scenario would generate 8.6 million job years compared with 11.6 million job years for a low carbon energy scenario to 2050. However, there is no available analysis comparing the skill level under each scenario⁴⁸. In Egypt, the electricity transition could present job opportunities in the manufacture of wind components, and local service providers and installers in the solar PV sector⁴⁹. Yet, this would likely require investments in local human capacity development, including manufacturing capability⁵⁰. Such opportunities might also increase the share of female employment compared with the fossil fuel sector, if linked to a gender quota⁵¹.

A study by the Bangladesh Independent Power Producers' Association (BIPPA) and PwC recommended that the country's energy transition be supported through training for smart grids, storage and knowledge transfer from ageing employees of the existing electricity sector to younger, tech-savvy workers⁵². It is particularly older workers that have the most difficulty gaining re-employment⁵³, although sufficiency of skills and further training are widespread concerns for workers of all ages in the coal mining sector⁵⁴.

⁴¹ UNFCCC, 2016, Just transition of the workforce, and the creation of decent work and quality jobs

⁴² FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South; IISD, 2017a, Fossil Fuel Subsidy Reform and the Just Transition: Integrating approaches for complementary outcomes

⁴³ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁴⁴ Yeo, 2017, Clean energy: The challenge of achieving a 'just transition' for workers; Reuters, 2016, China to cut 1.8m jobs in coal and steel sectors: Central government will allocate 100bn yuan (£10bn) over two years to relocate workers laid off; ILO, 2016, A just transition to climate-resilient economies and societies: Issues and perspectives for the world of work

⁴⁵ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁴⁶ ILO, 2011, Green Jobs – an introduction: National Green Jobs Conference in Bangladesh

⁴⁷ RECORE, 2006, Boosting the regeneration process of Europe's coalfield regions

⁴⁸ Neeffjes and Hoai, 2017, Towards a Socially Just Energy Transition in Viet Nam: Challenges and Opportunities

⁴⁹ GIZ, 2011, Green Growth Opportunities and Requirements in Egypt

⁵⁰ Ibid

⁵¹ Acha, 2016, Gender Equality and Just Transition; Neeffjes and Hoai, 2017, Towards a Socially Just Energy Transition in Viet Nam: Challenges and Opportunities

⁵² BIPPA, 2018, Transforming the power sector in Bangladesh

⁵³ ILO, 2016, A just transition to climate-resilient economies and societies: Issues and perspectives for the world of work

⁵⁴ e.g. China; ILO, 2016, A just transition to climate-resilient economies and societies: Issues and perspectives for the world of work

Stakeholders for an effective social dialogue

The key stakeholder groups involved in a just energy transition are:

- ◆ **Governments**, including national ministries, agencies and subnational government stakeholders (e.g. regional or local authority governments) in creating the policy environment for the power sector.
- ◆ **Majority state-owned enterprises** (i.e. more than 50 percent owned by government), national or subnational in nature. These stakeholders might have a particularly important role in managing social implications of power sector decarbonisation.
- ◆ **Civil society** engaged in policymaking processes related to power sector decarbonisation. Provided the presence of effective platforms to engage, civil society dialogue can influence policies and create accountability in the implementation of policies.
- ◆ **Workers** in the power sector, or wider value chain (including fossil fuel production), and wider job opportunities in communities or regions as a result of electricity decarbonisation. Such workers can organise themselves within unions to create influence in decision-making around decarbonisation. This can include dialogue around jobs, wages, working hours and pensions.
- ◆ **Businesses** in the power sector or wider value chain (including fossil fuel production), and other private companies. These stakeholders can drive the demand and supply of new products and services (i.e. renewable energy alternatives), as well as the increased efficiency of processes.
- ◆ **Investors and financial markets** are driving the decarbonisation of investments in the power sector. Dialogue for these stakeholders might primarily be concerned with the cost effectiveness of new investments (in new policy environments that encourage renewables), as well as financial risks (of assets or portfolios) in the context of a declining fossil fuel industry.
- ◆ **Households, consumers and communities** will become increasingly important as the distinction between producers and consumers within a centralised fossil fuel electricity system is replaced by increasingly dynamic and decentralised low carbon electricity production. Such stakeholders may be particularly concerned with social inclusion, access to and prices for goods and services (including basic services), livelihoods and security, as well as economic development and jobs.

These stakeholder groups are not homogeneous, for example, different government ministries and departments may have opposing views on the energy transition. Policies and stakeholders are also not mutually exclusive, but interact – they may be the drivers of policies, and policies may influence stakeholder dynamics in the just transition.

Due to data limitations, this paper focuses on government, business, and workers (including trades unions). We also focused on the national scale, and chose not to analyse the influence of international stakeholders on domestic policy processes. For the countries looked at, we found that governments, SOEs and unions are starting to support a just energy transition. The main obstacles to effective social dialogue appear to be the absence of platforms or engagement with subnational governments, civil society and business around policy. The below table shows positive examples of stakeholders and engagement processes supporting the just transition.



Stakeholders engaged in processes of just transition – leading examples across BRICS and Next 11

Stakeholders engaged in the just transition			
Government (national, regional, and local) and SOEs	Civil society	Workers and unions	Private sector, industry and investors
<p>Governments allocating funds to 'stranded' workers (China)</p> <p>Petrobrás Biofuels assistance to smallholder farmers (Brazil)</p> <p>Subnational government pushing for withdrawal of coal plant project proposals (Viet Nam and Philippines)</p> <p>Cuts in fossil fuel subsidies (Indonesia)</p>	<p>NDC consultation with civil society (Philippines, Viet Nam and Nigeria)</p> <p>Community movements towards 100% renewable energy (Indonesia)</p>	<p>Consultation with trade unions on NDC (Mexico)</p> <p>Strong employee participation in innovation and increases in equity returns (China, South Korea)</p> <p>Trade union support to biofuels as a green energy source (Brazil)</p> <p>Engagement of unions around coal transition (South Africa)</p> <p>Union campaign for coal communities not having to choose between jobs and health (South Africa)</p> <p>Trade unions working on climate change and just transition issues, including training (Bangladesh)</p>	<p>NDC dialogue with business (Philippines and Mexico)</p>



Governments (national, regional, and local)

Governments send signals to energy markets and play a key role in shaping the energy transition, including the extent to which it accounts for workers and communities. In several emerging markets, economic and sectoral restructuring can be relatively fast, as it is often led by centralised policymaking involving limited consultation. This impacts on the nature of social dialogue between groups, particularly national and local government, companies, and workers. In China, for example, a central government mandate in 2017 shut down coal plants near Beijing alongside the use of coal-fired heating systems, increasing local unemployment and leaving rural homes cold⁵⁵.

Other barriers include a lack of government coordination around energy planning; there can be different approaches to implementation and financing across different ministries, shaped by different political priorities and capacity levels. In Indonesia, India and Nigeria, fossil fuel agencies hold more influence than renewable energy entities⁵⁶ and in Pakistan, the Ministry of Climate Change had its powers and budget slashed by central government⁵⁷. In Viet Nam, the Environment

Agency has endorsed ‘non-polluting’ coal-fired power and has argued that renewables are not cost competitive, while the Ministry of Environment and Natural Resources and Ministry of Agriculture and Rural Development have been more supportive of renewable technologies and their role in job creation⁵⁸.

There are also very different approaches across emerging markets in terms of engagement with regional and local governments. In China, subnational governments were not engaged in the development of the country’s NDC⁵⁹. In other countries, feedback from subnational authorities can significantly influence central government plans. The Sumba province in Indonesia gained support from the Ministry of Energy and Mineral Resources for their target for 100 percent renewable energy⁶⁰. In the Philippines, Ozamiz City Council’s concerns over pollution led to the construction of a new 300 MW coal plant being cancelled⁶¹. Likewise in Bac Lieu province in Viet Nam, a coal-fired power plant was cancelled following reports from the province of fish die-off near shore⁶².



⁵⁵ Vasconcelos, 2018, The Stumbling Blocks to China’s Green Transition: How fast can China develop a “green, low carbon power system

⁵⁶ Devin, 2018; FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁵⁷ The Diplomat, 2018, Pakistan’s Climate Change Plight: Pakistan needs access to global climate funds to combat climate change impacts

⁵⁸ Neefjes and Hoai, 2017, Towards a Socially Just Energy Transition in Viet Nam: Challenges and Opportunities

⁵⁹ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁶⁰ Devin, 2018, Wonder Woman and Renewable Energy Pioneers in Indonesia

⁶¹ Man, 2018, Proposed coal-fired power plant, coal mine project shelved!

⁶² Neefjes and Hoai, 2017, Towards a Socially Just Energy Transition in Viet Nam: Challenges and Opportunities

State-owned Enterprises (SOEs)

The degree of state intervention in the energy system plays a major role in the types of stakeholders critical to shaping the transition. Several emerging market countries, including South Africa and China, are characterised by the prominence of SOEs across their energy sectors. China's Grid Corporation is the largest power utility in the world and employs a significant proportion of the country's population⁶³. In contrast, the increasingly liberalised energy markets of countries such as the Philippines and Mexico rely on policy and market signals to steer their investments. In Mexico, PEMEX (the previous oil monopoly) is a major employer and a potential leader in the just transition through job creation in new technologies⁶⁴.

SOE interests may not be aligned with the wider energy transition, particularly enterprises dependent on fossil fuels. In Viet Nam, the Ministry of Industry and Trade is responsible for electricity sector reforms and regulation and is closely aligned with the SOE Viet Nam Electricity (EVN) in prioritising coal⁶⁵. In Viet Nam, there is continued SOE investment in large-scale incumbent technologies including coal, hydropower and nuclear; with a fear that renewables will require higher upfront costs and new investments in distribution infrastructure⁶⁶.

Box 2. SOEs in Shanxi Province, China

Coal industry reforms in China's Shanxi Province have led to the closure of small and illegal mines to reduce accidents⁶⁷. Mining operations were subsequently allocated to five SOEs based on geographic zoning, with an additional two SOEs overseeing the restructuring of smaller coal mines. Collectively, these SOEs employed nearly one million workers in 2016⁶⁸.

China's central government has recognised that its coal industry restructuring plans are likely to result in up to 6 million job losses nationally⁶⁹. As part of a wider \$14.5 billion fund to resettle affected coal and steel workers, the government provided \$176 million to Shanxi province to support job transfers within SOEs and fund redundancies⁷⁰. In parallel, the Shanxi government is planning to invest \$4.5 billion in the regeneration of land alongside the reallocation of

over 650,000 people by 2020 to jobs in environmental services, renewable technologies and tourism⁷¹.

Shanxi shows that in some cases SOEs are an extension of the state, with social as well as economic goals. For that reason, complementary policies to support the transition of SOEs away from fossil fuels can be linked to parallel (and ideally complementary) initiatives at a regional or national level through social protection, economic diversification, and retraining. In many cases, SOEs also have social protection responsibilities, including managing pensions and medical bills for retired staff and workers. SOEs can also play a key role in finding work for former fossil fuel industry employees, including through the transfer to another post within an SOE or by helping them to look for alternative employment.



Source: International Institute for Sustainable Development (IISD) (2017b)

⁶³ IEEFA, 2018, IEEFA Report: China in 2017 Continued to Position Itself for Global Clean Energy Dominance

⁶⁴ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁶⁵ Neefjes and Hoai, 2017, Towards a Socially Just Energy Transition in Viet Nam: Challenges and Opportunities

⁶⁶ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁶⁷ IISD 2017b, At the Crossroads: Balancing the financial and social costs of coal transition in China

⁶⁸ Ibid

⁶⁹ Reuters, 2016, China to cut 1.8m jobs in coal and steel sectors: Central government will allocate 100bn yuan (£10bn) over two years to relocate workers laid off; in IISD, 2017b, At the Crossroads: Balancing the financial and social costs of coal transition in China

⁷⁰ China Daily 2017, in IISD, 2017b, At the Crossroads: Balancing the financial and social costs of coal transition in China

⁷¹ People's Government of Shanxi Province, 2016a; in IISD, 2017b, At the Crossroads: Balancing the financial and social costs of coal transition in China

Workers, unions and civil society

Planning for a just transition requires the participation of all affected groups in social dialogue, however we found that non-government stakeholders (including workers and civil society) have not been central to transition planning processes, and are often marginal voices in policymaking. This reflects a global trend for the erosion of workers' rights and voices.

The Global Competitiveness Index of the World Economic Forum shows that countries with falling scores on the indicator for labour-employer relations continue to demonstrate rapid economic growth⁷². This could suggest that countries may be pursuing growth at the expense of workers' rights. We also found that of the 16 countries examined, workers in 12 have 'no guarantee of rights', with the other four countries demonstrating at minimum 'repeated violation of rights'⁷³.

Despite this challenging context, we do find some cases of worker and civil society involvement in energy transition processes, including through unions. In South Africa, unions are driving a narrative around workers' rights to work that does not negatively impact health. This is driving the narrative that workers should not have to choose between jobs and health, but rather that 'healthy jobs for all' are required⁷⁴. In Bangladesh, the OHSE Foundation (a union body) is working with trade unions on climate change issues at the intersection with the just transition on training and educational handbooks⁷⁵.

Unfortunately, even where unions are in place, research has found that informal workers are often excluded from social dialogue due to a lack of union representation⁷⁶. India accounts for nearly 92 percent of the global informal workforce at 400 million non-unionised workers⁷⁷. Discrimination is highest amongst minority groups, such as the Adivasi and Dalit in India⁷⁸.

The level of civil society inclusion is also mixed in the countries reviewed. In Indonesia, anti-coal and pro-renewable energy stakeholders from across civil society are working to build a community movement towards 100 percent renewable energy⁷⁹. However, civil society has had limited access to policy processes across the emerging markets sample in this paper, with increasing government pressure on such groups through taxation and interference in foreign financial support⁸⁰. In terms of NDC development⁸¹, we found that Nigeria, Philippines and Viet Nam engaged with civil society, while China and Pakistan did not⁸².



⁷² World Economic Forum, 2018, The Global Competitiveness Report 2017-2018; World Development Indicators, 2018, World Development Indicators

⁷³ ITUC-CSI, 2018, ITUC Global Rights Index

⁷⁴ AIDC, 2018, AMCU Statement on renewable energy and jobs

⁷⁵ TUC, 2016, Changing the world of work for good

⁷⁶ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁷⁷ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁷⁸ Ibid

⁷⁹ Devin, 2018, Wonder Woman and Renewable Energy Pioneers in Indonesia

⁸⁰ FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South

⁸¹ Although civil society is not mentioned, we find that Mexico consulted with trade unions and businesses on its NDC (UNFCCC, 2016)

⁸² FES, 2017, Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South; Government of Nigeria, 2015

Businesses

Our stakeholder mapping reveals that governments and SOEs are leading the agenda on macroeconomic planning and tools to support the just transition, however businesses also have a role as employers, investors, and in some cases delivery agents of social protection. For countries with dominant SOEs, top-down political factors can drive business engagement, while regulatory signals can be used to stimulate private sector involvement.

Many emerging markets are pursuing market liberalisation and deregulation, which is allowing private stakeholders to enter the power sector. In 2014, Mexico took steps to end the monopoly of its SOEs PEMEX and CFE⁸³. In Bangladesh, the partially liberalised power sector has allowed independent and small power producers and major multinational corporations to participate⁸⁴.

Given ongoing implementation of policies to liberalise energy production and distribution, the private sector must be included in social dialogues on the just transition. Incentivising the private sector to engage in social dialogues can be challenging, but depending on the restructuring approach taken by a country, various options exist. Where industry accounts for most of electricity consumption (e.g. 56 percent in Mexico), it can play an important role in social dialogue⁸⁵. Although in many countries a combination of subsidies and other policies may artificially lower the cost of energy for industry, effective dialogue platforms are required for industry to engage with government⁸⁶.

The more fragmented the market, the harder it may be to achieve effective participation in social dialogue.

In the Philippines, research has found that a plethora of smaller private actors involved in the country's liberalised energy sector has led to an opaque just transition debate, with small-scale electricity suppliers both driving and opposing decarbonisation. The privatised National Power Corporation (NPC) is driven primarily by energy cost motivations, but must balance the multiple conflicting policies and regulations for both fossil fuels and renewables⁸⁷.

⁸³ Rennkamp et al., 2017, *Competing coalitions: The politics of renewable energy and fossil fuels in Mexico, South Africa and Thailand*; Energiewende, 2018, *The teething problems of Mexico's energy transition*

⁸⁴ Islam and Khan, 2017, *A Review of Energy Sector of Bangladesh*

⁸⁵ FES, 2017, *Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South*

⁸⁶ Vasconcelos, 2018, *The Stumbling Blocks to China's Green Transition: How fast can China develop a "green, low carbon power system"?*

⁸⁷ Mendoza, 2014, *Lessons Learned: Fossil Fuel Subsidies and Energy Sector Reform in the Philippines*



Progress indicators for the just transition

Designing a framework to assess the scope for a just transition in emerging markets.

In order to assess progress on just transition, we put together a composite indicator which aggregates socio-economic and energy sector metrics, giving an overall score which broadly illustrates a country's readiness for a just transition. In light of the ILO definition of the just transition, these collectively focus on the social, economic and environmental issues relevant to the energy transition.

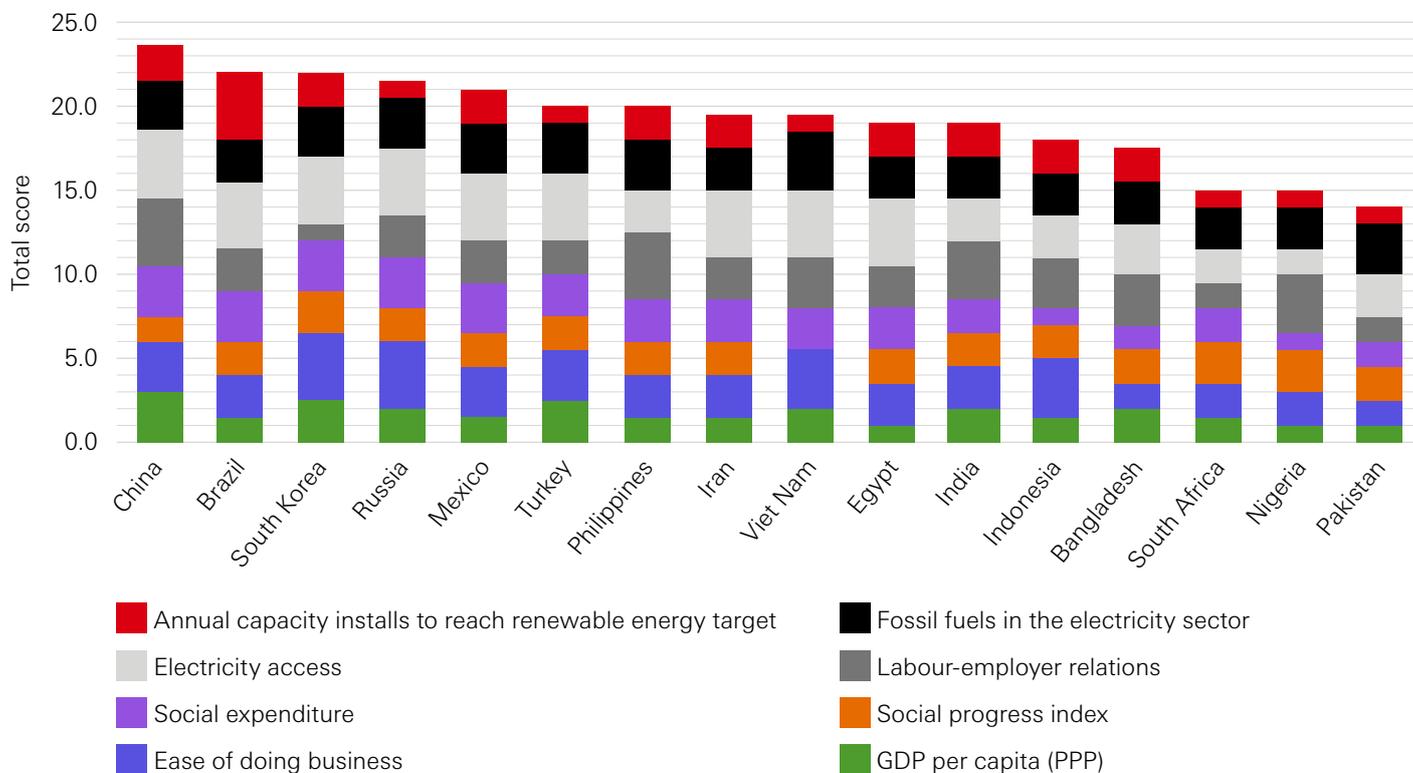
The 16 focus countries were assessed using eight indicators related to a i) socio-economic transition (GDP per capita, cost of doing business, social development and social protection, and labour and employer cooperation) and ii) electricity transition (electricity access, fossil fuels in the electricity mix, and renewable electricity targets). All indicators are a composite of current status and progress over a fixed period of time.

Transition indicators

	Indicator	Metric	Source (and further information)
Socio-economic transition	1. Level of economic development	Consultation with trade unions on NDC (Mexico)	World Development Indicators
	2. Business environment	Cost of Doing Business	World Bank Cost of Doing Business
	3. Level of social development	Social Progress Index	Social Progress Index
	4. Level of social development	Expenditure on social protection (% GDP)	ILO, World Social Protection Report 2017-19
	5. Employer indicator	Expenditure on social protection (% GDP)	Global Competitiveness Index 2018, World Economic Forum
Energy transition (power sector)	6. Level of electricity access	Electricity access (% population)	World Development Indicators
	7. Prominence of fossil fuels in the electricity mix	Electricity generation from fossil fuels (% total electricity)	World Development Indicators
	8. Level of ambition of energy transition	Renewable energy target (% electricity gains per year)	IEA/IRENA, Joint Policies and Measures database and other supporting sources

How countries score on the pre-conditions for a just transition

Scoring in terms of progress on indicators of just transition in the power sector



Note: countries are ranked in order of total score, with China as the best performer. blue = socioeconomic transition indicators, green = electricity transition indicators.

Despite being economically grouped, the development trajectories of the top 16 emerging markets vary widely. In terms of the transition in the power sector, fossil fuels constitute a significant proportion of electricity production in most countries, as well as wider electricity value chains, but many countries are also pursuing cleaner energy alternatives. The tension between the pursuit of renewables and reliance on fossil fuels demonstrates the political economy challenges of the energy transition. For example, while the Philippine's Department of Energy prioritises coal power, the less influential Climate Change Committee is adopting a low-carbon approach⁸⁸.

The leading emerging market in terms of progress in the transition to low-carbon power is Brazil (scoring 88 percent), due to its strong record of renewable electricity output (74 percent in 2015), primarily from hydropower, and its ambition to rapidly scale up other renewable energy technologies such as solar and wind⁸⁹. Brazil is followed by China, South Korea and Mexico (each scoring 75 percent). Another strong performer is India – in absolute terms, renewable capacity deployment has been extensive, reaching 69 GW in 2018⁹⁰. This is equivalent to 20% of installed power capacity⁹¹.

⁸⁸ Verzola et al., 2017, Towards a Just Transition in the Philippine Electricity Sector

⁸⁹ IEA/IRENA, 2018, IEA/IRENA Joint Policies and Measures database; World Bank, 2018, World Development Indicators

⁹⁰ India Central Electricity Authority, 2018, Power Sector: March-2018

⁹¹ Ibid

As we see elsewhere in the world, there remains a significant level of fossil fuel-based power production in many emerging markets. China, India, Indonesia, Pakistan, the Philippines and South Korea currently rely heavily on coal-fired power for a large proportion of power production⁹². Several of the countries reviewed are also major fossil fuel producers, including China, India, Indonesia, Pakistan, Russia, and South Africa for coal, with Russia and Nigeria also reliant on oil and gas production and exports⁹³.

Countries such as Viet Nam, South Africa, Nigeria, Turkey and Pakistan have amongst the lowest targets for low-carbon energy deployment, and are therefore characterised as slower movers in the clean power transition. However, these countries have the potential to ramp up renewable energy capacity and become global leaders in the transition, including Viet Nam which derived 37 percent of its electricity from renewables in 2015⁹⁴.

In terms of the socio-economic transition, leaders include China, Brazil and South Korea, which outperform other countries across the indicators reviewed (scoring 91, 84 and 81 percent respectively). China performed particularly strongly in the labour-employer relations indicator, whilst Brazil and South Korea were strongest performers in the ease of doing business.

The countries scoring slightly lower in terms of the socioeconomic transition indicators include South Africa, Nigeria and Pakistan (scoring an average of 52 percent overall). It is worth noting that these countries were also slower movers in the energy transition. In particular, Pakistan received the lowest overall score across the sample (of 47 percent), which includes a measure of performance in GDP per capita, the ease of doing business, social progress and expenditure, as well as labour-employer relationships. However, trends as with the energy transition indicators, seem to demonstrate that these countries are quickly catching up, including in many of the socio-economic indicators.

Overall, we find that China, Brazil and South Korea are leaders in both aspects of the transition and are therefore best placed to pursue the just transition in the context of power sector decarbonisation.

⁹² World Bank, 2018, World Development Indicators; UNFCCC, 2016, Just transition of the workforce, and the creation of decent work and quality jobs; The Diplomat, 2018, Pakistan's Climate Change Plight: Pakistan needs access to global climate funds to combat climate change impacts

⁹³ UNFCCC, 2016, Just transition of the workforce, and the creation of decent work and quality jobs; The Diplomat, 2018, Pakistan's Climate Change Plight: Pakistan needs access to global climate funds to combat climate change impacts; GLZ, 2015, Green Growth Opportunities and Requirements in Egypt

⁹⁴ IEA/IRENA, 2018, IEA/IRENA Joint Policies and Measures database; World Bank, 2018, World Development Indicators



Conclusions and recommendations

Differing socio-economic systems, appetite for renewable energy, approach to social welfare and openness to social dialogue mean that the nature of the just transition in each country will vary. We found that for the most part policy processes focussed on power-sector decarbonisation are inadequate at considering a just transition.

Although each country is unique, lessons can be drawn from one experience and applied to others. Many of the countries analysed are propelled by comparable social, political and economic drivers and will face similar challenges in transitioning to low-carbon energy systems. There is therefore an opportunity for all countries to learn from each other as they begin to explore the policy and social dialogue mechanisms required for the just transition.

Overall, we found that where they exist, policymaking, planning and social dialogue processes have focussed on economic development and power sector expansion rather than on the social justice aspects of the decarbonisation process. Furthermore, there is a risk of a false dichotomy being created between a 'just' and 'rapid' transition.

We argue that, while there will always be trade-offs, coherent economy-wide policy planning and open transparent social dialogue can mitigate the negative impacts of rapid transitions.

Our indicators reveal that emerging market countries (the BRICS and the Next 11) are diverging in their progress towards a just transition. We found similar patterns in a parallel review of high income countries, highlighting the fact that no country has yet shown a robust blueprint for how to manage a just transition.



Recommendations for policymaking and planning processes:

- ◆ There is a need for a coherent economy-wide vision for the just transition, this requires thinking and planning at the macro-economic level, even though the impacts of the energy transition may be concentrated in specific sectors and regions.
- ◆ In addition, there is a need for more in-depth thinking and specific planning (and resourcing) for the transitions that will affect particular geographies and particular parts of the population.
- ◆ In most of the countries reviewed (12 out of 16), workers' rights are limited. Improvements are needed in basic employment policies, worker rights, and social protection measures. In addition, 75 percent of the global population (or 5.1 billion people) do not have adequate social protection.
- ◆ Wider support through sound employment policies and broad-based social protection programmes provide the basic foundations needed to support just transitions in any sector, which in the case of the energy transition are currently concentrated on fossil fuel extraction and fossil fuel-based power.
- ◆ To support policy making at the macro-economic level, and for employment and social protection, there is a need to improve data collection on the scope and scale of existing jobs in fossil fuel production, and fossil fuel-based power, and the scale of possible future job creation (and skills needed) in renewables and other low-carbon sectors and activities.

Recommendations for engaging stakeholders:

- ◆ We find that where progress exists in supporting a just transition in the power sector, action is being led by governments (particularly at the national and sub-national level), by SOEs (with a strong direction from governments), and by unions. This highlights key gaps that need to be filled in terms of the establishment of platforms and processes for engagement with wider stakeholders including workers (non-unionised and informal), civil society, and the private sector.
- ◆ Engagement across different levels of government (local, regional and national) is also critical to ensure policy coherence. Platforms for different levels of government to engage with just transition policy planning can both provide a voice for local regions, and encourage strong dialogue between different government stakeholders responsible for energy and social development.
- ◆ Given the significant role that SOEs play in the power sector in emerging markets, there is a key role for them to play in the planning and implementation of just transition policies, and potentially in the delivery of support to workers, and of social protection mechanisms. This may require increased oversight by governments to ensure implementation of agreed measures, as well as to encourage diversification into low-carbon opportunities and technologies.
- ◆ Any platforms for dialogue across different parts of government, and different groups of stakeholders (workers, civil society, and the private sector) must also be structured in a way that recognises vested interests, and power dynamics – to empower as many groups of stakeholders as possible to have a voice in planning and policy making. This may also require new policy incentives for the private sector to engage with, and lead on elements of, the just transition (and the removal of existing disincentives, including fossil fuel subsidies).
- ◆ While each country context is unique, lessons can be drawn from some countries that may be applicable in others. There are therefore key opportunities for all countries (including the emerging markets reviewed in this study) to learn from each other as they begin to explore the policy and social dialogue mechanisms required for the just transition.



Appendix 1. Select definitions of the just transition

Source	Definition
UNFCCC (2015) Paris Agreement	“Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.”
G20 Argentina Presidency (2017)	“Making the new wave of technological breakthroughs as inclusive as possible will require considerable investment in training and skills for life and work. It may also require an adaptation in our fiscal policies or structural reforms.”
International Trade Union Confederation (ITUC) (2017) Just Transition Centre	“A just transition ensures environmental sustainability as well as decent work, social inclusion and poverty eradication... It is a bridge from where we are today to a future where all jobs are green and decent, poverty is eradicated, and communities are thriving and resilient”

Appendix 2. Policy and planning documentation analysed in support of the just transition in the power sector in BRICS and Next 11 countries

Macroeconomic and sector plans and policies	Employment policies	Social policies
Climate Change Mid-Century Strategy outlines the need for ‘environmental justice’ (Mexico)	Mahatma Gandhi National Employment Guarantee Act guarantees minimum wage for marginalised workers (India)	NDC addressing ‘systemic transition’ and ensure no one is left behind (Philippines)
Guidelines for Establishment of the Green Financial System –guidelines for investing in green industries including through local government and social private capital vehicles (China)	Labour Act drawing together various labour policies (Bangladesh)	Acceleration of social spending (South Africa)
Green Economy Accord and National Development Plan approaches to a ‘just’ low carbon society (South Africa)	Transition Accord on Fire and Building safety (example from readymade garments industry; Bangladesh)	Reform of fossil fuel subsidies: earmarking of funds for social safety nets and renewable energy (Indonesia)
Electricity access programmes in outlier regions (Indonesia)		

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About the Centre of Sustainable Finance

"Each and every one of us has a stake in developing a sustainable economic system. It is the combined responsibility of all players in society to respond to climate

change, rapid technological innovation and continuing globalisation to secure a prosperous future. Yet addressing these changing forces is by no means straightforward. More work is needed to provide the financial system with the right toolkit to solve sustainability challenges.

Working with internal and external partners, this central think tank is uniquely positioned to lead and shape the debate. We will promote the sustainable finance agenda using our global network which covers the world's largest and fastest growing trade corridors and economic zones. We can provide the connections needed to foster sustainable growth across borders and geographies. We aim to mobilise the capital flows needed to address the world's major sustainability challenges."

**Zoë Knight, Group Head,
HSBC Centre of Sustainable Finance**

"For more than a decade, HSBC has been at the forefront of the sustainable finance market. In November 2017, HSBC made five sustainable finance pledges. We committed to provide USD100 billion of sustainable financing and investment by 2025, source 100 per cent of electricity from renewable sources by 2030, reduce our exposure to thermal coal and actively manage the transition path for other high carbon sectors, adopt the recommendations of the task force on climate related financial disclosures to improve transparency, as well as leading and shaping the debate around sustainable finance and investment.

Taken together, these commitments reflect the scale of the challenge of delivering the Paris Agreement and UN Sustainable Development Goals. They also demonstrate the heights of our ambition to be a leading global partner to the public and private sectors in the transition to a low-carbon economy."

**Daniel Klier, Group Head of Strategy and
Global Head of Sustainable Finance**

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