Introduction

As a middle-income country with high levels of poverty, inequality and unemployment, and a legacy of historically skewed economic participation, South Africa has been grappling with socioeconomic issues since the democratic dispensation in 1994 (NPC, 2011). As in many other developing countries, economic growth, even when sustained for a period of time, has not translated into equal opportunity and equal access to markets and resources for poor and marginalised groups, perpetuating high inequality levels (see De Mello and Dutz, 2012).

This entrenched situation has precluded inclusive growth. The term ‘inclusive growth’ is often used interchangeably with ‘broad-based’, ‘shared’ or ‘pro-poor growth’, referring to growth which encapsulates both improved participation and benefit sharing (Ranieri and Ramos, 2013). Broader, more dynamic perspectives of inclusive growth further include opening up new sectors and harnessing existing sectors to produce more value-added offerings. These rely on significant investments in productive capabilities and skills (Khan, 2012).

It is fairly uncontroversial that growth must be broad-based to be sustainable in the long run, both across sectors in the economy and across a large proportion of a country’s labour force (Acemoglu and Robinson, 2012; Ianchovichina and Lundstrom, 2009; Khan, 2012). While economic growth is a prerequisite for poverty reduction, it is well recognised that it does not guarantee that everyone benefits equally. South Africa seeks to achieve more inclusive growth as envisioned in the country’s New Growth Path (EDD, 2010). The country’s strategy to achieve inclusive growth, particularly increased employment growth and lower income inequality, is set out in the National Development Plan: Vision for 2030 (NPC, 2011). These policy drivers recognise the importance of a competitive, diversified and more inclusive economy in improving trade performance, job creation and revenue generation (National Treasury, 2013).

Achieving such inclusive goals requires government intervention through appropriately designed, coordinated and implemented policies, with the aim of creating new economic opportunities and ensuring greater participation.
Intervention, including through regulation, can take the form of removing barriers to participation and creating a more level playing field or actively formulating policies that, by their very design, mandate participation by previously marginalised groups (Ianchovichina and Lundstrom, 2009). As argued in chapter 5 in this volume and in Roberts and Mondliwa (2014), a view of regulation which focuses only on existing infrastructure and static considerations of efficiency is a narrow one and there is a strong rationale for regulation to actively introduce competition, dynamism and transformation into an industry.

Infrastructure development – the procurement of large-scale infrastructure – is one area in which the state and economic regulators can, by setting the example, leverage economic regulation to foster inclusive growth. Infrastructure development in South Africa, however, has so far not been done in an inclusive manner and the potential of economic regulation has not been harnessed. It can be argued that, in order to foster inclusive growth through infrastructure development, a change in practice is required, one in which economic regulation can play an active role. Makhaya and Roberts (2013) highlight that past policy intervention has largely failed to stimulate effective competitive rivalry and tip ‘the balance of power’ in favour of new entry and increased participation (see also chapter 5, this volume). However, the role that regulation can play in fostering inclusive growth through creating opportunities and removing barriers to entry by stimulating competitive rivalry remains largely underresearched.

This chapter investigates the interplay between economic regulation, competition policy and inclusive growth in South Africa, using as a case study the utility-scale renewable energy sector. Through South Africa’s Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), the government is procuring utility-scale renewable energy-based electricity generation capacity from independent power producers (IPPs). The REIPPPP provides a perfect frame to investigate the impact of economic regulation on inclusive growth. The scheme was specifically crafted (through economic regulation) to promote competitive outcomes and foster inclusive growth. While South Africa’s renewable energy experience has been substantially researched (Eberhard, Kolker and Leigland, 2014; Montmasson-Clair, Moilwa and Ryan, 2014; Montmasson-Clair and Ryan, 2014; Papapetrou, 2014), this chapter presents a new prism of analysis, assessing outcomes in the sector through both an economic regulation and an inclusive growth lens.

In the remainder of the chapter, we first discuss how economic regulation can be harnessed to foster inclusive growth through competitive outcomes. We then analyse the potential to use economic regulation to spur broader inclusive growth outcomes, such as socioeconomic objectives, before concluding.

Harnessing economic regulation for inclusive growth through competitive outcomes

The first step in evaluating the capacity of economic regulation to foster inclusive growth objectives is to ascertain its impact on competition-related outcomes.
This section reflects on the interplay between economic regulation and competition policy, highlighting competitive outcomes as one of the core functions of economic regulation. It then applies these findings to South Africa’s experience in renewable energy, showing strong consistency with historical trends.

Economic regulation, competitive outcomes and inclusive growth

The presence and persistence of a range of market failures is the most prominent justification for economic regulation. Market failures arise when resources are not allocated or priced efficiently, and when a more optimal outcome would result from reallocating resources and altering prices. Market failures, along with other constraints, impede the poor and marginalised from accessing markets and benefiting from growth, thereby perpetuating inequality and non-inclusive growth (Ali and Son, 2007; Ianchovichina and Lundstrom, 2009; see also chapter 5, this volume).

One type of market failure, and a persuasive justification for regulation, is the presence of natural monopolies. Typical industries that have natural monopoly characteristics and that are commonly subject to regulation include electricity transmission, liquid fuel pipelines, telecommunication infrastructure and water supply systems. In South Africa, economic regulation has focused on regulating the natural monopoly parts of these value chains, which were formerly state-owned and subsequently privatised (Roberts and Mondliwa, 2014).

Another type of market failure arises from non-competitive markets. This can occur when a single firm or groups of firms possess persistent market power which results in less than optimal output being produced with higher resultant prices. The lack of effective competition could result in dominant firms abusing their market power or engaging in collusive behaviour, obtaining rents at the expense of consumers and potential competitors. This has negative implications for productivity and job creation. Uncompetitive markets also result in lower levels of innovation, reduced choice for consumers and poorer quality of goods or services. Not only are direct consumers harmed, but the viability of downstream industries is affected if the product in question is an intermediate input. Furthermore, firms with market power that control essential facilities that cannot easily be replicated or that control key inputs could abuse their dominance by limiting access to their facilities, thereby creating barriers to entry. Regulation can be a way to curb excesses in market power by regulating access to infrastructure as well as other market outcomes, including prices (Viscusi et al., 2000, in Roberts and Mondliwa, 2014).

South Africa’s history and economic policies under apartheid created markets that are highly concentrated, with a few firms in strategic industries possessing considerable market power. Economic opportunity only catered to the interests of minority groups. The state owned and controlled several strategic sectors, such as energy, telecommunications, mining, agriculture and several intermediate industrial product markets. Even following the liberalisation and privatisation trends of the 1990s, most of these industries continue to be highly concentrated while some remain state-owned (Makhaya and Roberts, 2013). Participation by new entrants has typically been constrained through structural or strategic barriers to entry (or both).
Barriers to new entry also present themselves if there are political and/or vested interests at play that serve to protect the incumbents. While in theory increased competition should allow greater and more inclusive economic participation, in reality the power and vested interests of large firms and linkages to the political economy pave the path in which countries develop and often undermine efforts of economic regulators and well-intended policies (Roberts, Vilakazi and Simbanegavi, 2014, citing Acemoglu and Robinson, 2012, and North, Wallis and Weingast, 2009).

In South Africa, powerful conglomerates have shaped the development trajectory of industry. Even in regulated industries where competition could be actively introduced, such as in energy and telecommunications, broad-based participation has remained muted given the presence of structural and strategic barriers. Makhaya and Roberts (2013) suggest that it is both the political connections of the incumbents and the strategic behaviour in these sectors that serve to restrict entry, allowing entrenched dominant positions to be maintained. This influence extends to the ability to shape the new regulatory frameworks in favour of dominant incumbents.

More broadly, Rodriguez and Menon (2010) have argued that, in developing countries, blindly promoting competition laws and policies ignores the actualities of prevailing political settlements and institutional realities (in Roberts, Vilakazi and Simbanegavi, 2014). Regulators are exposed to lobbying by powerful interest groups and outcomes of this may be that the development trajectory of the industry is short-sighted.

The clout of such vested interests has critical implications for the pursuit of inclusive growth. Khan (2012) and De Mello and Dutz (2012) reiterate the importance of understanding political settlements when evaluating inclusive growth. This is further highlighted by Levine (2012) who, when assessing the financial sector, stresses the political economy challenges to the creation of policies that would stimulate inclusive growth. Levine explains that powerful individuals or circles in society may not want the financial sector to perform well as this would empower the previously economically disenfranchised, creating competition and potentially diluting the importance of their wealth and political influence (De Mello and Dutz, 2012).

Economic regulation, competitive outcomes and inclusive growth in South Africa’s electricity sector

The renewable energy experience in South Africa demonstrates a deliberate attempt to harness economic regulation to actively generate competitive outcomes. The REIPPPP, initiated in 2011, is the first meaningful endeavour on the part of the government to open up the electricity generation market and introduce IPPs alongside the state-owned utility, Eskom, which generates about 95% of the country’s electricity.

Structured around successive bidding rounds, REIPPPP started with an initial allocation of 3 625 megawatts (MWs) to be procured from IPPs over a maximum of five bid windows by 2016. In December 2012 and August 2015, the
Department of Energy (DoE) published additional determinations, bringing the total determination to 14 725 MW. As of September 2016, 6 376 MW of generation capacity (102 projects) had been approved for total investments of over R194 billion, with a collective capacity of 2 738 MW already operational.

While opening the generation market to the private sector constitutes a positive development, it has had no real impact on competition in the electricity market, only introducing competition for the market. This is owing to Eskom’s sustained control over the industry through holding most of the generation capacity (Pickering, 2010) and the limitation of the role of IPPs to supply through government-run procurement programmes only. Nevertheless, the REIPPPP did create a precedent and the electricity market is now being opened to IPPs for other technologies. Similar IPP procurement programmes for baseload electricity from coal, natural gas and hydroelectricity, as well as for co-generation, are being rolled out (as of January 2017) by government.

Through increased competition, the REIPPPP aims to procure renewable energy-based electricity at the lowest cost possible while fostering maximised economic development outcomes. The evaluation framework of the REIPPPP, composed of two clear-cut phases (a prequalification stage and an evaluation stage), ensures a fair and levelled playing field for all participants. In a first prequalification stage, bidders have to satisfy minimum threshold requirements in six areas: financial, technical, commercial and legal, land, economic development and environmental. They must, inter alia, demonstrate the readiness of the project (land acquisition, funding, technologies, suppliers, ability to meet deadlines, environmental consent, etc.), its financial viability and the arrangements to meet minimum requirements in terms of economic development.

As a rule, and in order to secure local participation, the project company must also comprise 40% participation by a South African entity (Campbell, 2012). The DoE (via teams of independent experts) requires detailed and comprehensive bids. Failure to include all required information, and not having this information available on request during the evaluation period, is grounds for elimination.

Bids meeting all these initial requirements are admitted to the second stage – the actual auction – where they are assessed on a competitive basis. Bids are reviewed based on weighted criteria: 70% for their price offer and 30% for their additional contribution to economic development (detailed later).

Stringent criteria also aim to ensure the sustainability of the newly generated competition by limiting the participation to serious players. To avoid low-quality or unreasonable bids and the phenomenon of ‘winner’s curse’, which has plagued a number of auction mechanisms, such as the British Non-Fossil Fuel Obligation scheme in the 1990s (Mitchell and Connor, 2004), project developers have to pay at bid submission a deposit (reimbursed to unsuccessful projects) of R100 000 per MW (Campbell, 2012). Furthermore, successful bidders are required to pay a grid guarantee of R200 000 per MW as well as factor into their budget a development fee (to be used to run the programme) of 1% of total project costs (Campbell, 2012).
The REIPPPP and competition outcomes

The REIPPPP has generated substantial positive competition-related outcomes, primarily in terms of market entry and pricing. Vested interests have nevertheless delayed and limited the scope of the impacts.

Vested interest in South Africa’s renewable energy journey

South Africa’s road to large-scale, renewable-energy-based electricity generation has been a haphazard and convoluted path, illustrating the difficulty in overcoming vested interests. From the publication of the 2003 White Paper on the Renewable Energy Policy of the Republic of South Africa, which set the objective of generating 10 000 gigawatt-hours of renewable energy by 2013 (approximately 4% of the energy mix), to the procurement of the first MW of generation capacity in 2011, a long and complex policy development process took place in the country. It is intrinsically intertwined with the opening of the electricity supply industry to the private sector.

Several initial attempts that were conceptualised, designed and administered by the state-owned, vertically integrated monopoly Eskom, such as the Pilot National Cogeneration Programme, the Medium Term Power Purchase Programme and the Multisite Base-load Independent Power Producer Programme (see DoE, 2009; Yelland, 2009), failed to effectively procure power from IPPs. The National Energy Regulator of South Africa (Nersa) then developed a Renewable Energy Feed-In Tariff (REFIT) mechanism to procure power output from qualifying renewable energy generators at predetermined prices. Faced with political and legal challenges, the REFIT policy was abandoned in favour of an auction system (Baker, 2012; Creamer, 2011). Following a lengthy transition process, the DoE, with assistance from National Treasury’s Public-Private Partnership Unit, launched the REIPPPP in August 2011.

Unlike previous attempts, the REIPPPP has benefited from a number of key overarching success factors on political (e.g., the policy space), organisational (e.g., the institutional arrangements) and operational (e.g., the power purchase agreement [PPA]) levels.

Indeed, only when policy certainty on the role of renewable energy and the associated investment strategy (i.e., the role of the private sector) were achieved could the procurement framework be successfully implemented. IPP participation in electricity generation was secured in 2007 with Cabinet designating Eskom as the single buyer of power from public and private producers and mandating the state-owned enterprise to ensure that ‘adequate generation capacity is made available and that thirty per cent of the new power generation capacity is derived from IPPs’ (GCIS, 2007). Large-scale commitment to renewable energy was achieved in 2010 with the Integrated Resource Plan for Electricity 2010–2030 (IRP 2010). The IRP 2010 intended for renewable energy technologies (solar and wind essentially) to supply 42% of the new additional capacity over the 2010–2030 period or 9% of the total electrical energy in 2030 (DoE, 2011).

Institutional arrangements, which were central to the failure of previous programmes, have also been at the crux of the success of the REIPPPP. The programme has benefited from effective institutional leadership and political
will from the DoE and the National Treasury, and the active participation of all relevant stakeholders, from other government departments (such as the departments of Trade and Industry and of Environmental Affairs) to Nersa, Eskom, financial institutions and project developers. Had just one of these vital players been missing from the programme design and consultation, the scheme would have been less successful.

In addition, under the REIPPPP, the risk allocation has been adequately balanced between all stakeholders. While previous programmes aimed at promoting the development of renewable energy in South Africa largely failed due to a risk allocation severely in favour of government and the national utility (i.e., pushing most risks onto the private sector), the REIPPPP relies on a more distributed risk profile. The PPA, which constitutes the only source of revenue for developers and for commercial banks financing IPPs (to ensure debt repayment and adequate return on investment), meets international standards, although the financial close phase could be improved.

The PPA is held for 20 years and in local currency, and allocates risk between the parties based on investment-friendly terms. It guarantees payment of an agreed tariff for power generated on a take-or-pay basis (Stemple, 2013). The tariff is agreed upon the award of the preferred bidder status and is indexed to the rate of inflation over the duration of the contract with Eskom. The agreement is underwritten by the National Treasury should Eskom default on the terms. The DoE separately contracts with the project companies to offer recourse for project investors in the event that Eskom fails to meet its obligations under the PPA.

The project developer and its financiers are, however, responsible for building and operating the plant. In the case of IPPs defaulting on supplying the agreed amount of electricity due to weather instability or plant degradation or destruction, the liability falls on the IPP and the project financiers. Should the project company fail to generate the contracted energy, the lenders are asked to step in and find a replacement project company, if feasible. If not, the allocation for that project could be put up for bid in subsequent rounds (Stemple, 2013).

Although the above account suggests successful outcomes, vested interests in the electricity sector can be argued to have contributed to the slow pace of introducing competition. In addition, Eskom remains a vertically integrated utility with little incentive to treat IPPs fairly. In 2015, uncertainty arose around Eskom’s issuance of budget quotes, which are a prerequisite for IPPs’ bids to reach financial close, for the connection of new renewable energy IPPs to the grid. Since 2015, the utility has displayed a strong reluctance to provide such budget quotes. This can arguably be considered a negotiation strategy to slow the development of IPPs and obtain additional funds from the regulator (Slabbert, 2015; Tshabalala, 2015). Additional resistance occurred in 2016 with Eskom’s CEO publicly indicating its unwillingness to sign further PPAs with REIPPs (Creamer, 2016).

Further opening of the electricity supply industry is still required to introduce meaningful market competition, notably at the generation stage. The opportunity to invest in large-scale renewable energy generation capacity is currently limited, outside of the REIPPPP. The passing of the Independent Systems and
Market Operator (ISMO) Bill, aimed at introducing an unbundled ISMO (i.e., outside of Eskom) to invest, operate and maintain the country’s high-voltage transmission grid, was meant to address this blockage (see also chapter 5, this volume). It would empower IPPs greatly to sell electricity directly to third-party consumers, such as mining and industrial complexes, and provide the platform for South African companies to generate their own electricity and sell potential surplus to the utility and a third party. As of January 2017, the Bill has been stalled in parliament since 2011 and is likely to remain so in the short to medium term, seemingly owing to vested interests and an attempt to protect Eskom’s dominant position.

**Reduced barriers to entry and stimulated increased participation**

The programme has largely been oversubscribed, a testament to the interest in it, and has resulted in committed investment of over R194 billion (DoE, NT and DBSA, 2016). As illustrated in table 8.1 and figure 8.1, the number of bid responses has increased dramatically with each round, along with a decrease in the number of successful bidders, illustrating the growing interest in the programme as well as its increasingly competitive nature.

On the one hand, the programme’s design has been conducive to market entry, considerably widening the number of electricity producers in the country. The number of bids increased from 53 to 93 across the first three rounds. The fourth round saw a stabilisation effect with a total of 77 bids received (Creamer, 2015).

On the other hand, a high degree of competitive rivalry has made success particularly hard for developers (figure 8.1). In the first round, 53% of received bid responses were selected as preferred bidders. This proportion decreased to 24% in the second window and further to 20% in the third bid window. While it originally stood at 17% in the fourth bid window, the additional allocation as part of round 4.5 increased the success rate to 34%.

Practically, the programme has also been efficient in mitigating the risk of winner’s curse. All projects selected as preferred bidders have so far reached financial close and the first REIPPPP project, Scatec Solar’s 75 MW solar photovoltaic plant, was connected to the grid three months ahead of schedule in September 2013 (Clover, 2013).

As illustrated in table 8.1, over the first seven bid windows (1, 2, 3, 3.5, 4, 4.5 and 1S2), a total of 6 376 MW of generation capacity was procured.

The success of the programme has been evidenced by the positive response received from developers, investors and financiers, as well as local and international manufacturers, who have actively participated in the programme. As such, the programme has attracted a large number of international and domestic project developers, sponsors and equity shareholders. Across the first 64 projects, more than 100 different shareholding entities participated in the programme. Some have been particularly active, with 46 and 25 institutions, respectively, participating in more than one project and in three or more projects. South African insurance company Old Mutual has been the most active entity, supporting 16 projects (Eberhard, Kolker and Leigland, 2014).
Table 8.1 Total MW awarded per technology in the REIPPPP, September 2016

<table>
<thead>
<tr>
<th>Awards (MW)</th>
<th>Total determination</th>
<th>Round 1 allocation</th>
<th>Round 2 allocation</th>
<th>Rounds 3 &amp; 3.5 allocation</th>
<th>Rounds 4 &amp; 4.5 allocation</th>
<th>Round 1S2</th>
<th>Total allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>6 360</td>
<td>649</td>
<td>559</td>
<td>787</td>
<td>1 363</td>
<td>3 357</td>
<td></td>
</tr>
<tr>
<td>Solar PV</td>
<td>6 225</td>
<td>627</td>
<td>417</td>
<td>435</td>
<td>813</td>
<td>2 292</td>
<td></td>
</tr>
<tr>
<td>Concentrated solar power (CSP)</td>
<td>1 200</td>
<td>150</td>
<td>50</td>
<td>400</td>
<td>0</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Small hydro</td>
<td>195</td>
<td>0</td>
<td>14</td>
<td>0</td>
<td>5</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Landfill gas</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>0</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>210</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>25</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Biogas</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Small-scale</td>
<td>400</td>
<td></td>
<td></td>
<td>1 657</td>
<td>2 205</td>
<td>49</td>
<td>6 376</td>
</tr>
</tbody>
</table>

Source: Authors, based on DoE (2012a, 2013a); DoE, NT and DBSA (2016)
In addition, the existing mechanisms have resulted in some degree of competition regarding engineering, procurement and construction (EPC) contractors and equipment suppliers, with 49 companies servicing the first 64 projects. Most companies are involved in more than one project, as the primary or secondary contractor. According to Eberhard, Kolker and Leigland (2014), main EPC contractors with three or more projects include South African (Consolidated Power Projects, Group Five Construction, Murray & Roberts), Danish (Vestas), Spanish (Acciona, Abengoa, ACS Cobra, Iberdrola Engineering and Construction), German (Juwi Renewable Energies, Nordex Energy), Norwegian (Scatec), Italian (Temi Energia) and Indian (Suzlon) companies. The number of technology suppliers is also fairly diverse. Wind turbine suppliers have included European, Chinese and Indian companies such as Vestas, Siemens, Nordex, ABB, Guodian and Suzlon. European, Chinese and Korean manufacturers constituted the main solar photovoltaic suppliers: Siemens, SMA Solar Tech, BYD Shanghai, Hanwha Solar, 3 Sun, AEG and ABB (Eberhard, Kolker and Leigland, 2014).

These positive achievements were no accident and result from continual policy and regulatory learnings from previous initiatives, international experience as well as the iterations of the current programme (Montmasson-Clair, Moilwa and Ryan, 2014; Montmasson-Clair and Ryan, 2014). Stakeholders have commended the extensive due diligence required of developers in their bids and the programme’s clarity and reliability. The publication of transparent, consistent and independently reviewed evaluation criteria has emerged as a critical condition for the private sector. The evaluation mechanism has contributed to creating certainty and ensuring the participation of project developers in the programme. Clear and consistent criteria have further enabled fair competition in the renewable energy market and the selection of the most competitive bids.

Stringent criteria have, however, impacted on participation in the programme. The rigour required to meet evaluation criteria and each step in the
bidding process, while welcomed by the private sector, has proven to be extremely
time consuming and expensive. Key advisors such as legal experts are costly for
project developers and can represent up to 15% of project development costs
(Montmasson-Clair, Moilwa and Ryan, 2014). The need to reduce the cost of
meeting all requirements has arisen for IPPs. Particularly, mechanisms to pre-
vent the winner’s curse phenomenon have constituted a hindering factor for the
participation of new and/or smaller, previously disadvantaged players. As such,
the design of the evaluation criteria, particularly their stringency, is reviewed
between every bidding window, factoring market dynamics and local capabilities.

The design of the REIPPPP has therefore been efficient in lowering the barriers
to entry and introducing a number of new participants into the electricity gener-
ation market. While further analysis is required to fully grasp the implications for
inclusive growth, preliminary conclusions nevertheless suggest that market entry
has primarily favoured established domestic and international companies, with
limited room for the participation of small and medium-sized enterprises. Notably,
there has been subdued participation of South African firms, even by means of
partnerships or joint ventures with more experienced international players. In
sum, the programme constitutes a noteworthy improvement but further efforts are
required to widen the spectrum of entities participating in the market.

**Substantial reduction in prices**
The REIPPPP has resulted in considerable progress over time in terms of prices.
Tariffs have significantly dropped over the rounds, well below the required
price ceilings (see figure 8.2). For example, prices fell on average from R2.75/
kilowatt-hour (kWh) to 66c/kWh for solar photovoltaic projects, and from
R1.14/kWh to 52c/kWh for wind projects.

![Figure 8.2](image-url)

**Figure 8.2** Evolution of REFIT tariffs, 2008–2011, and REIPPPP prices, in R/MWh

*Source: Authors, based on DoE (2013a); Greyling (2012); Nersa (2011); DoE, NT and DBSA (2016)*

**Notes:** REIPPPP prices are fully indexed on an April 2011 basis.
Due to a change in tariff structure, prices for CSP in round 3 are not directly comparable
with rounds 1 and 2. In round 3, projects received a base price for 12 hours every day and
270% of base price for five ‘peak’ hours every day. Round 4 data exclude round 4.5 projects.
MWh = megawatt-hour
In the first bid window, which was utilised in many ways as a round of observation, prices were relatively high compared to the previous REFIT mechanism. No capacity cap (other than the total allocation of the programme) was set, price caps were publicly released and new developers were not yet ready to put forward competitive bids. These combined factors resulted in a lack of competition and the absence of pressure on the bidders to reduce their price offering. As a result, prices in the first round were high and ended up very close to the prescribed ceilings, raising caution with regard to publishing price caps.

Prices received for the second and third auction rounds were significantly more competitive and even lower than expected (Lucas, Ferroukhi and Hawila, 2013). This trend was confirmed in the fourth round too. The trend essentially resulted from aggressive price competition, project developers being more experienced and familiar with the programme, an increased maturity of technologies, reduced price ceiling for some technologies, such as wind and solar, and the allocation of a capacity limit for each technology from the second round onwards.

The use of an auction system, with the appropriate risk mitigation mechanisms, has reduced the complexity of price setting for the South African government and allowed for prices to decrease rapidly as a response to increased competition, technology maturity and improved developer experience. This success story, resulting from a well-crafted combination of price caps, maximum project size and determined allocation, has been one of the REIPPPP’s major achievements. Price caps must, however, be set appropriately so as not to prevent participation. Price caps set too low played a part in the absence of successful projects in the first two rounds for some technologies, such as landfill gas and biomass.

Economic regulation for inclusive growth through socioeconomic development outcomes

The second step to evaluate the potential of harnessing economic regulation to stimulate inclusive growth outcomes is assessing the role of economic regulation in promoting socioeconomic development.

Economic regulation, socioeconomic development and inclusive growth

Proactive economic regulation, including effective competition policy, has an important role to play in promoting inclusive growth outcomes through socioeconomic development. Effective competitive rivalry is a means by which participation in different sectors in the economy can be widened to be more inclusive. Broad-based growth is unlikely to materialise if left solely to the market; the state and economic regulators have active roles to play in this regard.

If competition policy as a form of regulation is effectively designed and implemented, it can foster inclusive growth (UNCTAD, 2015). Several countries, including South Africa, have competition policies. They aim to curb excessive concentrations in the economy (ex ante through the merger regime)
and prohibit anticompetitive conduct resulting in the exploitation of customers or the exclusion of competitors, ultimately to the detriment of consumers and the competitive process (ex post through abuse of dominance and cartel provisions).

While greater economic efficiency (resulting in lower prices, better quality, increased choice and innovation) is a key desired outcome of competition policy, the South African Competition Act (No. 89 of 1998, as amended) has a broader purpose which specifically addresses public interest criteria/goals of greater participation and economic and social inclusivity. This is clearly set out in the Act, where the purpose includes ‘to promote employment and advance the social and economic welfare of South Africans’ and ‘to ensure that small and medium-sized enterprises have an equitable opportunity to participate in the economy; and to promote a greater spread of ownership, in particular to increase the ownership stakes of historically disadvantaged persons’.

The merger regime in South Africa requires consideration of similar public interest criteria. It considers the effect of the merger on a particular industrial sector or region; the impact on employment; the ability of small businesses, or firms controlled or owned by historically disadvantaged persons, to become competitive; and the ability of national industries to compete in international markets. Mergers that are not found to substantially lessen competition may still be prohibited on public interest grounds.

Economic regulation can also be harnessed to foster inclusive growth through socioeconomic development. Economic regulation is largely viewed as ex ante, where the aim is to control market power in instances where competition is either not possible or not desirable (such as where industries are characterised by natural monopolies and certain market failures are present). It aims to do this by setting out the rules of the game upfront (see also chapter 5, this volume). Economic regulation can also often encompass multiple objectives, of which competition may be just one. Others could include economic, environmental and social objectives, in addition to core infrastructure functions (Steyn, 2012).

But economic regulation and competition policy are not mutually exclusive. For competition to flourish, effective economic regulation is necessary and can be designed to create what has been termed ‘synthetic competition’ even in natural monopoly situations (Ginsburg, 2009). Indeed, Newbery (2002, p. 28) cautions against the mantra ‘competition where feasible, regulation where not’, highlighting that even the potentially competitive elements of a network industry, such as electricity generation, often still need regulatory oversight so that market power is not abused and inclusive outcomes can be achieved. Changing the rules of the game, or ‘regulating for competition’ to ensure that the dynamic benefits of competition are part of the long-term vision, is necessary to ensure wider economic participation and inclusive growth. Actively encouraging investment in the energy sector is an area in which previously disadvantaged individuals could participate and this requires regulators to design the rules of the game upfront so that participation is encouraged.

It is, however, important to emphasise that competition policy and other forms of economic regulation ought to complement, and not be expected to
substitute, other government policies in trying to attain inclusive growth objectives. In general, the record of regulatory intervention in telecommunications, liquid fuels, rail and electricity supply in South Africa has not yielded the desired degree of competitive and inclusive growth.7

Economic regulation, socioeconomic development and inclusive growth in South Africa’s renewable energy sector
The development of renewable energy appears as a key area where economic regulation has been (tentatively) mobilised in South Africa to generate socioeconomic outcomes. Competitive rivalry triggered by economic regulation has been harnessed to promote inclusive growth. The economic development objectives of the REIPPPP have focused on ensuring that South Africans (notably previously disadvantaged citizens) participate in, own and benefit from renewable energy activities in the country.

The structure of the REIPPPP has been explicit in facilitating this (although economic development criteria remain secondary to price). Traditionally, government’s procurement has been based on 80–90% price consideration and 10–20% for developmental objectives such as black economic empowerment. The REIPPPP, in advancing a greater proportion to economic development considerations (30%), has attempted to stimulate socioeconomic goals.

Within the 30 points (out of 100) awarded for economic development, different components are weighted as follows: job creation (25%), local content (25%), ownership (15%), management control (5%), preferential procurement (10%), enterprise development (5%) and socioeconomic development (15%) (DoE, NT and DBSA, 2016). For each category, points are allocated based on minimum desired targets, over and above minimum thresholds. In a given category, meeting only the minimum threshold translates into zero points while reaching the target grants the maximum number of points. From the threshold to the target, a linear relationship determines the total points awarded to the bid. This system is meant to ensure minimum economic development contributions from project developers while encouraging them to aim for higher targets (Montmasson-Clair, Moilwa and Ryan, 2014). Table 8.2 summarises the qualification thresholds for the third bid window, highlighting the diversity of socioeconomic objectives attached to the programme.

The REIPPPP and socioeconomic outcomes
In line with international experience (see Azuela and Barroso, 2011; Cozzi, 2012; Del Río and Linares, 2014; IRENA, 2013), South Africa’s renewable energy journey illustrates both the difficulty and the possibility of fully harnessing the potential of economic regulation to foster socioeconomic objectives. Despite a design geared towards promoting local economic and social development, direct outcomes have been uneven but generally improving and encouraging.

Valuable but limited job creation
Job creation accounts for 25% of the economic development criteria embedded in the programme (DoE, NT and DBSA, 2016). Three main areas which create
### Table 8.2 Economic development criteria and targets set for the REIPPPP

<table>
<thead>
<tr>
<th>Economic development element</th>
<th>Description</th>
<th>Bid window 1</th>
<th>Bid window 2</th>
<th>Bid windows 3, 3.5 and 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Minimum (%)</td>
<td>Target (%)</td>
<td>Minimum (%)</td>
</tr>
<tr>
<td>Job creation</td>
<td>Jobs for citizens</td>
<td>50</td>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Jobs for black citizens</td>
<td>30</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Jobs for skilled black citizens</td>
<td>18</td>
<td>30</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Jobs for local communities</td>
<td>12</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>Local content</td>
<td>Value of local content as a percentage of total project value</td>
<td>24 or 35 depending on technology</td>
<td>45 or 50 depending on technology</td>
<td>24 or 35 depending on technology</td>
</tr>
<tr>
<td>Ownership</td>
<td>Shareholding by black people in the project company</td>
<td>12</td>
<td>30</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Shareholding by local communities in the project company</td>
<td>2.5</td>
<td>5</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>Shareholding by black people in the EPC contractor</td>
<td>8</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Shareholding by black people in the operations contractor</td>
<td>8</td>
<td>20</td>
<td>8</td>
</tr>
<tr>
<td>Management control</td>
<td>Black top management</td>
<td>n/a</td>
<td>40</td>
<td>n/a</td>
</tr>
</tbody>
</table>

continued
### Table 8.2: Economic development criteria and targets set for the REIPPPP

<table>
<thead>
<tr>
<th>Economic development element</th>
<th>Description</th>
<th>Bid window 1</th>
<th>Bid window 2</th>
<th>Bid windows 3, 3.5 and 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Minimum (%)</td>
<td>Target (%)</td>
<td>Minimum (%)</td>
</tr>
<tr>
<td>Preferential procurement</td>
<td>Broad-based black economic empowerment procurement</td>
<td>n/a</td>
<td>60</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>QSE and EME procurement (up to R35 million in turnover)</td>
<td>n/a</td>
<td>10</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Women-owned vendor procurement (businesses + 50% owned by women)</td>
<td>n/a</td>
<td>5</td>
<td>n/a</td>
</tr>
<tr>
<td>Enterprise development</td>
<td>Enterprise development contributions</td>
<td>n/a</td>
<td>0.6</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Adjusted enterprise development contributions (local communities)</td>
<td>n/a</td>
<td>0.6</td>
<td>n/a</td>
</tr>
<tr>
<td>Socioeconomic development</td>
<td>Socioeconomic development contributions</td>
<td>1</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Adjusted socioeconomic development contributions (local communities)</td>
<td>1</td>
<td>1.5</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: DoE, NT and DBSA (2016)

**Note:** EME = exempted micro enterprise; QSE = qualifying small enterprise
direct jobs are equipment manufacturing, project construction and installation, operation and maintenance, covering the standard divisions of project life.

Project developers have committed to noteworthy job creation as part of their bids. As detailed in figure 8.3, solar photovoltaic is set to be the technology generating the largest number of jobs judging by the successful projects from the first four rounds. Solar photovoltaic projects should create a total of 37 307 employment opportunities, followed by onshore wind and CSP projects.

Figure 8.3 Committed job creation for selected technologies over REIPPPP bidding rounds 1–4

Source: Authors, based on Montmasson-Clair, Moilwa and Ryan (2014); DoE (2013a); DoE, NT and DBSA (2016)

Note: Job creation is expressed in 12 person-months and 12 person-months per MW capacity of generation procured. Round 3 data exclude the two CSP projects of round 3.5. Round 4 data exclude round 4.5 projects.

While project developers have committed to job creation, employment opportunities in the construction and operation of renewable energy-based power plants remain limited. In addition, trade unions have raised concerns about the quality and precarious nature of the jobs generated by the projects, with most employment opportunities created in the communities surrounding projects being for low-skilled security guards (Montmasson-Clair, Moilwa and Ryan, 2014).

The allocation of jobs at the community level also appears lacking in transparency. Skilled employment is generally sourced from the economic centres of the country (such as Gauteng), notably owing to the lack of available skills at the community level (McDaid, 2014). While deemed local by the programme, these employment opportunities do not benefit the community in which the projects are located. Although some skills transfer takes place, it appears to be project-specific and not common practice.
In sum, the contribution of the programme to job creation, while noteworthy, remains limited. Employment is primarily short term and low skill and does not benefit local communities. While job creation is (rightfully) not the main objective associated with developing renewable energy, further efforts are required to maximise the potential for local job creation and to foster inclusive growth.

**Noteworthy (constrained) local industrial development**

The design of the REIPPPP aims to stimulate the development of local industries through local content requirements. While such requirements internationally have generally not had a positive record, local content targets, and accordingly the local content share of projects in South Africa, have increased over each bid window to encourage further industrialisation, manufacturing and job creation (figure 8.4). Local content calculations cover all stages of the value chains, except land costs and finance costs. All domestic expenditure qualifies as ‘local’. This includes civil works, engineering, project management, assembling imported parts, manufacturing some or all components, local technology development through innovation and research and development, and technology transfer from overseas firms via licensing agreement.

![Figure 8.4](imageURL)  
*Figure 8.4 Local content requirements and achievements across REIPPPP bidding rounds*

*Source: Authors, based on Montmasson-Clair, Moiwa and Ryan (2014); Campbell (2012); Eberhard, Kolker and Leigland (2014); DoE (2013a); DoE, NT and DBSA (2016)*

*Note:* Round 3 data exclude the two CSP projects of round 3.5. Round 4 data exclude round 4.5 projects. Technologies where no bid was successful in a particular round have been omitted.

For example, the rand value for local content inputs and processes for onshore wind increased by 33% from the first to the second round and by 37% from the second to the third round. Accordingly, these costs as a share of total project costs have risen from around one-fifth to nearly half. The first bidding round had set a 25% local content target for onshore wind (DoE, 2012b).

Most developers found the 25% target easy to meet as the majority of civil and electrical activities are undertaken by local companies and a large percentage
of local transport is used to achieve this target. However, local content requirements increased to 40% in round 3. Turbines, which are generally imported, make up 60–70% of project costs, rendering the local content requirements more difficult to achieve for developers due to the limited local manufacturing base (Vermeulen, 2012).

Looking at solar PV, the local content costs have increased to over half of total project costs, while the rand value of these inputs and processes is falling, in line with smaller allocation and decreasing local content costs due to heightened competition across the entire value chain, from module manufacturers to developers (DoE, NT and DBSA, 2016).

Altogether, solar PV, onshore wind and CSP technologies brought up local content of R32.2 billion over the first four rounds of the programme, with solar PV (R19.5 million) and onshore wind (R19.0 million) leading the way. With local content thresholds increasing progressively for all three technologies, the local content costs as a share of total project costs increased accordingly over the four bid windows.

However, the industrialisation envisioned as part of the programme remains constrained owing to the limited MW capacity allocated per technology (to create sufficient aggregate demand for international companies to set up manufacturing sites in the country) and the small existing manufacturing base. While the existing allocations represent a substantial volume, the overall capacity is spread across several technologies as well as numerous competing developers and suppliers, thus failing to create enough aggregate demand to encourage large investments in local manufacturing. For example, in the absence of critical mass, manufacturing wind turbines in South Africa remains challenging as every wind turbine model requires a different blade, which means a different mould will be needed for each blade (DLA Piper and CD Hofmeyr, 2012). The lack of long-term certainty about the programme has also hindered the development of local manufacturing, leading to some facilities established at the onset of the REIPPPP already closing down (such as the SMA plant in the Western Cape).

Additionally, local content requirements involve short-term trade-offs. As the localisation of new technologies raises the costs of goods, local content requirements can hinder the growth of new sectors if they are not in line with the country’s capacity and capability, and impede the decrease in prices. The ability of developers to meet local content requirements largely depends on whether the local industry can manufacture the components of equipment required for their facilities. As such, due to a specific domestic context, all raw (unprocessed) steel, regardless of origin, is considered to be 100% local. It is further recommended that all raw (unprocessed) aluminium, regardless of origin, be considered 100% local (dti, 2013).

Going forward, long-term certainty on the future of the procurement scheme, in terms of MW capacity and technology, must be maintained to maximise industrialisation benefits. The publication in November 2013 of an updated IRP, while advocating that the current renewable energy programme should be continued with additional annual rounds, reintroduced a degree of uncertainty by modifying the allocation per technology included in the IRP 2010 (DoE, 2013b). A new
iteration of the IRP was released in November 2016 and is currently going through
the consultation process. While reviewing and updating the country’s electricity
plan is a necessary ongoing exercise, further certainty on the allocations per tech-
nology must be ensured to provide clarity to the sector (Montmasson-Clair and
Ryan, 2014). The new allocation of 6 300 MW announced in April 2015 is a step in
the right direction to establish increased long-term certainty and local investment.

South African companies are also well placed to supply blades, gearboxes,
generators and controllers for main wind turbines, although they still source
some parts internationally (Baker, 2012). The programme has triggered some
noteworthy manufacturing investments which would have been extremely
unlikely without it. For example, multi-sector company Corporación Gestamp’s
wind industrial division, GRI Renewable Industries, invested €22 million in a
wind tower manufacturing facility in Cape Town (Kolver, 2014), while engineer-
group DCD Wind Towers built a R300 million wind tower manufacturing
facility in the Coega industrial development zone in the Eastern Cape (Moodley,
2014). At least five photovoltaic panel assembly plants have also been estab-
lished in South Africa over the last few years, and some international suppliers
have used these to achieve localisation targets (Eberhard, Kolker and Leigland,
2014). These investments have triggered some skills transfer towards South
Africa at the manufacturing level.

Failed attempts at spurring community development
Finally, the REIPPPP includes community development as one of its key objec-
tives. To encourage social development in neighbourhoods that surround renew-
able energy projects, community trusts need to be made up of members that live
within a 50 km radius of the project site (Van den Berg, 2013). This is to prevent
nepotism over how community beneficiaries are selected, as well as to ensure
that the surrounding communities, which often bear the unaccounted ecolog-
ical, social and economic costs of the project, benefit from the developments.
Most communities hold a stake of up to 5% on average, per project, through
community trusts. These community trusts are fully funded by the Development
Bank of Southern Africa (DBSA), the Industrial Development Corporation and/
or the Public Investment Corporation, while some are classified as free carry. For
example, the DBSA provides low-interest financing to community trusts to buy
shares in the project company. The shares are managed by the DBSA and the
community trust leadership, and these two parties decide on how the revenue
is to be spent.

Community trusts are set up with the financial assistance of development
finance institutions for communities living near the projects to buy shares in
the project companies. Associated revenues, estimated at R9.5 billion collect-
ively over the first three bid windows, are set aside for community-led projects
(Montmasson-Clair, Moilwa and Ryan, 2014).

The management of community trusts established to meet social develop-
ment outcomes has created some unintended consequences. Concerns have
been raised about the concentration of these funds in a limited number of com-
unities, their monitoring and evaluation, and the capacity of the DoE and
development finance institutions to manage the funds and ensure IPPs meet their commitments.

In addition, the concern is that many community trusts have been established merely to serve the requirements of the request for proposals. Project developers and the local development finance institutions have little experience in working with communities and municipalities in these areas to ensure that development programmes are aligned with community interests and municipal plans. Community participation and ownership aspects of the project can indeed promote perverse development by concentrating large funds in community trusts, without having well-thought-through developmental objectives. The risk is that such community trusts will receive excessive financial flows with little knowledge of the communities in which they are working.

An implementation agreement signed with the DoE is meant to ensure that preferred bidders adhere to their commitments. Each bidder is required to report to the DoE on a quarterly basis regarding these commitments (DoE, 2012c). The REIPPPP awards more points to communities located closer to the renewable energy project and does not place a limit on multiple community trusts for one community. This results in a small number of communities having multiple community trusts assigned to them. The developmental aspects of the community trust projects come second to concentrating community trusts in lucrative areas.

Due to the competitively sensitive nature of the programme, developers are not able to share their socioeconomic development plans, resulting in several developers engaging with similar communities and confusion for all parties. In addition, no structured partnership with the local municipality exists and local government is only engaged in a fragmented, peripheral and uncoordinated manner. Dissatisfaction is further compounded as a result of the mistrust between councillors and community representatives and the lack of transparency surrounding the selection of socioeconomic projects (McDaid, 2014; Tait, Wlokas and Garside, 2013).

Furthermore, some developers have attempted to retain control of the trusts, while claiming that they are ‘owned’ by the community. The appointment of the trustees and the management of the funds remain problematic and appear far from the standards of good governance, with evidence of nepotism, political arrangement, elite capture and lack of communication, transparency and accountability (McDaid, 2014). The quality and relevance of social investment projects have also been questioned at the local level (McDaid, 2014; Tait, Wlokas and Garside, 2013).

Social issues such as the rising cost of living, indebtedness and diseases have reportedly increased around project sites, notably during construction, because of increased employment and the influx of workers. Gender issues are also not being considered by the programme as no gender specialist is included in the programme team. Preliminary evidence shows that women may not enjoy many of the benefits (such as employment), but may bear a disproportionate amount of the burden (e.g., an increase in gender-based violence). Overall, little feedback is provided to project developers on their social development plans as no social
scientists or labour specialists are present in the team of independent experts (McDaid, 2014).

Renewable energy projects have the capacity to generate substantial amounts of money for local communities. Clearly, the expectation that these projects, unlike projects based on other energy sources, should take on a complex and onerous responsibility for community development, has introduced numerous unintended consequences. The lack of adequate structures at the local level and of monitoring and evaluation at the national level, along with the inexperience of project developers in this space, has led to the further marginalisation of, and division within, already marginalised and vulnerable communities.

Conclusions

This chapter highlighted the important role that economic regulation could have in attaining inclusive growth outcomes through greater participation and the promotion of socioeconomic development. This is particularly relevant for South Africa, given the country’s history of non-inclusive participation in the economy and skewed access to economic opportunities. The importance of ‘regulating for competition’ is emphasised, dispelling the notion that regulation and competition can effectively function independently of each other. The coordination of the state, independent economic regulators, competition authorities and the private sector is essential to reduce barriers to entry and to stimulate inclusive growth. However, this should be done with cognisance of the political and vested interests at play.

The renewable energy experience in South Africa highlights the deliberate and successful attempt to introduce competition and inclusive growth objectives in the formulation of regulatory policy for the electricity supply industry. The REIPPPP has been a success in competitively procuring large-scale renewable energy-based electricity generation capacity. Economic regulation has been particularly efficient in driving prices down in a limited amount of time. It has also opened up the market to a large array of new participants in the electricity generation market, lowering considerably the barriers to entry. Beyond prices and market entry, the direct translation of the increase in competition into inclusive growth does not appear automatic, although first results are encouraging. Although limited in scope, the REIPPPP provides a first successful attempt at managing vested interests in South Africa’s electricity supply industry. Furthermore, while the REIPPPP has had noteworthy positive impacts in terms of job creation and industrial and community development, these positive outcomes remain limited (and in some cases hampered by unintended consequences), illustrating the difficulty of maximising several objectives at the same time.

In line with international experience, the preliminary findings from the case study illustrate the potential, as well as the difficulty, in channelling economic regulation to stimulate competition for economic development and inclusive growth. In this respect, this case study carries substantial lessons for the procurement of large-scale infrastructure in South Africa and other developing
and emerging economies. Going forward, the REIPPPP and similar programmes could notably strengthen their impact on inclusive growth, particularly in terms of local manufacturing and community development, by establishing strong monitoring and evaluation frameworks and further capacitating project developers in meeting economic development requirements. Setting the appropriate instruments to create aggregate demand (required for the development of local manufacturing) could further contribute to enabling the type of economic development and skilled employment envisioned for such programmes. In the short term, however, this is likely to come at the expense of other policy objectives, such as cost affordability, and trade-offs between various objectives must be carefully considered to maximise national benefits.

Notes
1 The authors wish to thank the Research Project on Employment, Income Distribution and Inclusive Growth (REDI3x3) for supporting the work published in this chapter.
2 See Montmasson-Clair, Moilwa and Ryan (2014) for a detailed analysis of South Africa’s renewable energy journey.
3 Many more factors contributed to the success of the programme. See Montmasson-Clair, Moilwa and Ryan (2014), Montmasson-Clair and Ryan (2014) and Eberhard, Kolker and Leigland (2014) for more details.
4 Cabinet further specified that over the 2007–2027 period, ‘Eskom will build all nuclear power plants in South Africa and the IPPs will build more than 50% of all non-nuclear power plants’ (GCIS, 2007).
5 A multitude of risks can be associated with the construction and profitable operation of a power plant, from fuel price and supply (this risk is by definition not applicable to renewable energy-based plants), foreign exchange, environmental assessments and authorisations, the connection to the transmission and distribution networks, revenue collection, to timely and on-budget plant construction and plant operation.
6 Essentially, this means that irrespective of power demand by the grid, if the power is generated by the renewable project, the tariff will be paid by Eskom for each kilowatt of energy produced.
7 Nevertheless, the Ports Regulator in South Africa has in recent years made significant regulatory decisions with positive impacts on competitiveness. See Reena das Nair and Simon Roberts’ chapter in this volume for a review of ports regulation in South Africa.

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