



The impact of local content policies on EU exports and investment,
and economic transformation in South Africa

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Acronyms

APDP	Automotive Production and Development Programme
B-BBEE	Broad-Based Black Economic Empowerment
CGE	Computable general equilibrium
CSDP	Competitive Supplier Development Programme
DOE	Department of Energy
DPE	Department of Public Enterprise
DTIC	Department of Trade, Industry and Competition
EME	Exempt micro enterprise
EPC	Engineering, procurement, and construction
FDI	Foreign Direct Investment
GWO	Global Wind Organisation
IDC	Industrial Development Corporation
IDZ	Industrial Development Zone
IPP	Independent Power Producer
IRP	Integrated Resource Plan
LCR	Local Content Requirements or Regulations
NERSA	National Energy Regulator of South Africa
NIPP	National Industrial Participation Programme
OEM	Original Equipment Manufacturer
PIC	Public Investment Corporation
PPA	Power purchase agreement
PPPFA	Preferential Procurement Policy Framework Act
PV	Photovoltaic
QSE	Qualifying Small Enterprise
REIP4	Renewable Energy Independent Power Producer Programme
SACU	Southern African Customs Union
SEZ	Special Economic Zone
SOC	State-owned company

Executive Summary

The South African government has applied a wide range of localisation policies since the 1990s. There is some evidence, internationally, that localisation policies attract investment and contribute towards industrial development, employment creation and economic growth. Yet, these gains are often accompanied by domestic price increases and economic inefficiencies. Consequently, local content requirements (LCRs) can lead to economic isolation, with activity concentrating in sectors where LCRs are imposed, potentially undermining industrial diversification and long-term economic growth.

Most of South Africa's localisation effort is implemented through state entities. Currently, procurement by almost all government institutions is administered through the Preferential Procurement Policy Framework Act (PPPFA) 2017, which adopts a sectoral approach to local content.¹ The only exception to this Policy Framework is the Renewable Energy Independent Power Producer Procurement Programme (REIP4), launched in 2011, which outlines distinct minimum local content thresholds for different renewable energy technologies.² These two policies form the focus of this paper.

EU companies appreciate South Africa's local development objectives and contribute substantially to employment and skills creation, but many have experienced difficulties in adapting to the country's local content policies, and are likely to be strongly affected by any changes to existing programmes and regulations. The main purpose of this paper is to:

- assess the impact of localisation policies on EU trade and investment in South Africa,
- identify the main constraints experienced by EU companies in complying with the current LCR framework, and
- recommend potential policy adjustments or reforms to foster investment and transformation in South Africa.

The study was largely informed by interviews with 14 EU businesses, of which nine are operating in the renewable energy sector. These interviews were complemented by a review of the South African legislation and analysis from elsewhere on the effectiveness of local content policies.

Contribution of EU investment

EU companies have invested significant capital and expertise into the South African economy. Since the inception of the REIP Procurement Programme, EU business have invested close to R42 billion in SA's renewable energy sector, accounting for 50% of the total foreign investment in this sector. EU businesses have also invested in establishing local manufacturing and/or assembling facilities. Together, these investments have attracted complementary investments across the economy and encouraged local sourcing.

Skills development and technology transfers are taking place, further enhancing the domestic knowledge and skills base. Foreign investment has been critical in developing technical skills related to design, engineering, operation and maintenance. Skills development occurs through in-

¹ <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/>

² <https://www.ipp-renewables.co.za/>

house skills transfer initiatives, and training at the parent companies or leading institutions in Europe or the Americas. Some investors second local technicians for prolonged periods abroad to develop the requisite expertise e.g. operating advanced machinery and equipment.

Foreign technology is being adapted and designed for the local industry. Technology assimilation is an important aspect to developing an industrial base and strengthening a system of innovation, and complementary to developing skills. One company indicated that they have established product development and fabrication facilities in SA. Another company is in the process of designing equipment that can disrupt the local industry and increase competition, by tailoring equipment designed for the EU market to meet South African requirements.

Such skills and technology transfer opportunities are especially evident in the nascent RE energy sector, where local companies can leverage the experience and know-how of foreign investors to learn about new technologies. Additionally, these skills can be transferred to end-users such as government entities and municipalities, to ensure that state-owned entities are equipped to maintain and operate the equipment without relying on the OEM. Advanced design and engineering activities are still taking place in Europe (and other subsidiaries in the Americas), primarily because of the high cost associated with setting up parallel facilities abroad.

South Africa's exports into the Sub-Saharan market are increasing through domestic capacity expansion. Companies that have been able to re-organise their production and assembly operations are leveraging their position in South Africa to export to the SADC region. Being located in South Africa provides a competitive advantage in the region, where speed to market is important. For example, one company has reduced lead times from 8 to 10 weeks to less than a week as a result of establishing in South Africa.

Impact of localisation policies

Localisation policies generally increase the cost of production, though the impact differs by sector and instrument. Through the PPPFA, local content requirements increased costs for 3 of the 5 firms interviewed. Two companies were able to reduce costs by investing significantly in local capacity but were protected from international competition by import duties. The cost of localisation in the RE energy sector is consistently higher due to the high cost of establishing production facilities, skills development, and investing in a RE industrial base. The results suggest that LCRs have increased the cost of production in South Africa's RE sector by at least 10%.

The lack of a strong and competitive industrial base limits options for localisation in some sectors. For example, low levels of competition in the local steel and chemical (for plastics) making industries, increases the cost of sourcing local raw materials. One company managed to import polymers at 15% below the local price, and was able to enjoy temporary cost reductions, with polymers accounting for at least 60% of raw material costs. Likewise, in the case of steel towers, the raw material must be imported because local steel is of inferior quality and more expensive.

Businesses either pass on the cost to the customer or absorb the additional costs. The competitive nature of the REIP4's auction process tends to drive IPPs to contain costs when submitting proposals. As such, OEMs' margins are squeezed as they are unable to pass the increased cost of domestic goods and services onto the IPP. This impacts on the overall attractiveness and sustainability of the sector. In markets where there are a few domestic manufacturers, it's relatively easier to pass on the full cost to the end-user.

Cost of localisation, by localisation policy

	Cost %	Explanation	Pricing response
PPPFA			
Assembler (1)	Increase by 3% to 4%	The cost difference between importing parts and sourcing local parts for assembly	Fully passed onto the customer
Assembler (2)	Decreased (no % assigned)	Importing components is cheaper than importing fully built product	Absorbed by the company
Manufacturer	Increase by 10%	Includes the high cost of local raw materials	Absorbed by the company given the industry's price competitiveness
OEM, subsidiary & parent company	Decreased by 30%	Manufacturing standard OEM parts have become cheaper over time compared to developed countries	Fully passed onto the customer
	Increase by 60%	There are limited capabilities in SA to manufacture specialised equipment, and localising production could increase production costs	Fully passed onto the customer
REIP4			
Developer	Increase by 25% - 30%	Not due to LCRs, but retaining international experts for longer. LCR-related cost may be 10%	Partially passed onto the IPP
O&M	None	No LCR at the operations phase	N/A
EPC (1)	Increase by 15% to 20%	High cost of sourcing local parts, components, equipment, and machinery	Fully passed on to the IPP
EPC (2)	Increase by 15% to 20%	Compliance costs related to BEE and Economic Development, including sourcing from local suppliers	Absorbed by the company
OEM	Increase by 40%	High cost of sourcing local goods and services, and lack of price competition	Partially pass onto the IPP due to competitive bidding process
Service provider	Increase by 10%	High cost of doing business in SA, which includes setting up, BEE compliance and LCRs	Developing cost structure that passes on the costs to the OEM
Tier 1 (1)	Increase by 18% to 40%	High cost of sourcing local parts and components	Partially pass onto the OEM
Tier 1 (2)	Increase by 25%	Opportunity cost of failing to implement REIP4, including auction delays	Absorbed by the company
<i>Source: Responses from semi-structured interviews. 2 companies did not provide information related to costing.</i>			

Pursuing industrial development through LCRs, can have negative consequences for regional development, particularly within the Southern African Customs Union (SACU). For example, a key player in Botswana's PVC manufacturing industry relocated its manufacturing plant to the North West Province in South Africa, simply to comply with South Africa's LCRs.

Constraints and challenges

The potential gains from localisation depend heavily on the nature of the sector; the extent to which local inputs are consistently and competitively available; the scale and frequency of demand; and the design and coherence of the policy framework in place. The study suggests that in most sectors, the pre-conditions for an effective localisation programme do not exist.

In general, it is more challenging to localise the production of high-tech or specialised products that typically require advanced equipment, global economies of scale and skilled labour. Firms are also less likely to relocate their research and design services away from their head offices. On the other

hand, across both localisation programmes, companies were willing and able to relocate less sophisticated manufacturing and assembly processes, or to source generic inputs from South African companies, if available at the right quality and price.

However, **both groups of EU firms experienced problems in accessing the full range of manufactured inputs and products at international prices in the local market.** While South Africa boasts a relatively well diversified manufacturing sector, **there are few companies capable of producing the required volume of goods at global standards, and the high concentration of producers in most industrial sectors limits capacity and price competition.** This has raised production costs for EU manufacturers and the final prices of the goods and services that they offer in South Africa.

This situation is exacerbated by the recent decline in public infrastructure investment, and delays in the IPP process. **A lack of consistent and predictable demand has destroyed much of the local capacity that was developed, especially in the construction and renewable energy sectors.** Moreover, given past policy uncertainty, and South Africa's weak economic outlook, firms are unlikely to invest in new productive capacity in the near future. This will further limit the range and value of inputs that can now be sourced domestically, relative to what was possible several years ago.

EU firms have also raised concerns about the **design and implementation of local content regulations in South Africa.** For EU investors in the renewable sector, the imposition of multiple non-price criteria in the REIP4 process complicates procurement and investment decisions, ultimately leading to greatly inflated costs. Similarly, the justification for product designations in the PPPFA is unclear and there are some LCRs that are simply unattainable, given that the lack of capacity in the domestic market. Whereas exemptions are easily obtained, this further undermines the credibility of the policy framework.

Over and above local content regulations, EU investors must still comply with South Africa's complex B-BBEE policy. For both groups of firms, it is this additional layer of commitment that is particularly problematic, and a major deterrent to new investment. **To expect foreign firms to invest in developing local capacity, sourcing most of their inputs and skills from South Africa, and to then also transfer a significant amount of equity to a domestic partner, is a big ask in the relatively small South African market. It is for this reason that some international firms choose to sell their goods and services through a South African agent, further raising the price for domestic consumers.**

Recommendations

The South African Government is currently looking to extend and tighten local content regulations. Given the loss in domestic capacity that has occurred over recent years, this is likely to lead to a further escalation in prices in some sectors, benefiting a few entrenched manufacturers, while undermining exports and South Africa's long-term international competitiveness. To mitigate against these unintended consequences, the Government should urgently review its current approach to local content regulations, with the intention of inducing much needed international investment into the South African economy. Specifically:

The PPPFA designation process should be limited to those products where the economic benefits of localisation clearly exceed the costs. Localisation requirements should be sector and context specific, taking into account the availability of skills and demand within the sector, the potential for achieving market scale at competitive prices, and the cost of any additional government support or protection to the local industry.

In the REIP4, local content requirements should be limited to components that can be reasonably and competitively manufactured in South Africa. Given delays in the bid process, and

the loss in domestic capacity that has occurred in this sector in recent years, this would likely require some relaxation of LCR in Bid Window 5. Moreover, the overall cost implications of the economic development criteria on energy prices in South Africa should be closely monitored.

The interaction between local content regulations and B-BBEE deserves further exploration.

Firms that have invested heavily in localising production and employment, should receive some recognition for these efforts in their B-BBEE scoring, potentially offsetting some or all of the current ownership requirements. Moreover, stricter enforcement of fronting regulations may be needed to prevent local companies from laundering imported goods and services and presenting them as local through agency arrangements.

A regional agreement on government procurement or a common approach to local content within SACU, should be considered.

Strict country-level LCRs, that do not recognise regional content, may induce companies to disinvest and relocate to where LCRs are imposed. This would not only lead to the de-industrialisation of South Africa's smaller neighbours, but would undermine efforts to develop regional value chains. This is potentially an area where the region can learn from the EU experience, where member countries cannot discriminate against each other in government procurement.

1 Introduction

Local content requirements (LCRs) have proliferated since the 2009 global financial crisis, with many countries adopting preference policies to strengthen domestic supply chains (Deringer, Erixon, Lamprecht, & Marel, 2018; Leigland & Eberhard, 2018). By definition, localisation policies favour products that are manufactured in the domestic market versus imports, with the expectation that localisation will deliver on multiple policy objectives including employment creation, the transfer of technical knowledge and skills, industrial development and, ultimately, economic growth. This is certainly the case in South Africa, where the Government advocates for the use of local content to develop industrial capabilities, while encouraging meaningful broad-based economic participation.

Local content policies in South Africa date back to the late 1990s and make use of a combination of legislative and non-legislative procurement levers. In 1997, the **National Industrial Participation Programme (NIPP)**, and the subsequent **Defence Industrial Participation (DIP)**, were offset programmes that required participants in government and parastatal procurement, including lease agreements, with an imported content of at least US\$10 million, to invest 30% of the project value into the economy.³ The current status and use of the NIPP and the DIP is unclear.

Currently, procurement by almost all organs of the state is administered through the **Preferential Procurement Policy Framework Act (PPPFA) 2017**, which adopts a sectoral approach to local content.⁴ The only exception to this Policy Framework is the **Renewable Energy Independent Power Producer Procurement Programme (REIP4)**, launched in 2011, which outlines distinct minimum local content thresholds for different renewable energy technologies.⁵ These two policies form the focus of this paper and are discussed in more detail in Sections 3 and 4.

In some industries, private sector procurement is also directed by the state, through sector-level charters such as the **Mining Charter**, and specific incentive programmes such as the **Automotive Production and Development Programme**⁶ (soon to be replaced by the South African Automotive Masterplan, 2035). South Africa's **Broad-based Black Economic Empowerment (B-BBEE) policy** also encourages local development, by strongly incentivising black ownership and supplier and enterprise development through the government procurement system. Voluntary schemes such as **Proudly SA** also advocate for local procurement. These policies are summarised below in Table 1.

³ <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/national-industrial-participation-programme/>

⁴ <http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/>

⁵ <https://www.ipp-renewables.co.za/>

⁶ <http://www.thedtic.gov.za/wp-content/uploads/Automotives.pdf>

Table 1: Overview of the Localisation Policies

Type of legislation /programme	Policy/Programme	Incentives	Target industries
Laws & regulations	PPPFA	Market access	Designated manufacturing & services products
	REIP4	Tender criteria points under Economic Development	IRP renewable energy
	Mining Charter	Points contribution towards Local Procurement	Mining goods (excluding non-discretionary expenditure) and services
	B-BBEE	B-BBEE scorecard points	Embedded across all SA sectors
Incentive programme	APDP	Production incentive for tax breaks, subsidies, government loans, etc.	Automotive sector
Voluntary programmes	Proudly SA	Branding schemes	Various sectors
	Supplier Development Programmes	B-BBEE scorecard points	Various sectors
<i>Source: Author's analysis based on government documents</i>			

Despite these efforts to increase local production, the impact of the South African Government's localisation policies on achieving its intended objectives is ambiguous. **While there is evidence that the implementation of LCRs has contributed to new investment and created jobs, there are indications that these investments have come at a cost.** This is particularly evident among studies into the renewable energy and rail rolling sectors (Crompton & Kaziboni, 2020; Hansen, Nygaard, Morris, & Robbins, 2019; Eberhard & Naude, 2017).

In February 2020, the National Treasury announced plans to develop a single regulatory framework for public procurement, through the publication of a Draft Public Procurement Bill. The Draft Bill aims to establish regulatory institutions that will strengthen the integrity of the procurement system and address potential violations. Once finalised, the Draft Bill will repeal and replace the PPPFA, which currently determines how localisation policy is implemented. As it stands, the Draft Bill is silent on local content, but it does give the Minister of Finance the powers needed to develop regulations to prescribe how B-BBEE and local content regulations will be incorporated into the new framework (it is unclear what will happen if these regulations are not promulgated together with the Bill). In addition, the Bill allows National and Provincial authorities to implement different preferential point systems and different local content regulations to promote local production and advance economic opportunities for certain categories of persons.

EU companies appreciate South Africa's transformation and development objectives and contribute substantially to employment and skills creation, but many are already experiencing difficulties in adapting to South Africa's extensive B-BBEE and local content policies, and are likely to be strongly affected by any changes to existing programmes and regulations. **The main purpose of this paper is to:**

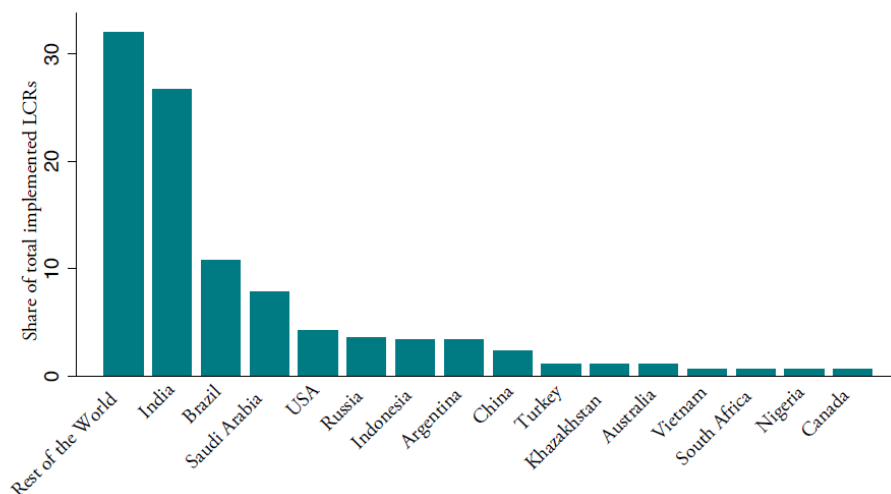
- **assess the impact of localisation policies on EU trade and investment in South Africa,**
- **identify the main constraints experienced by EU companies in complying with the current LCR framework, and**
- **recommend potential policy adjustments or reforms that foster investments and transformation in South Africa.**

The study was largely informed by interviews with 14 EU businesses, of which nine are operating in the renewable energy sector. These interviews were complemented by a review of the South African legislation and analysis from elsewhere on the effectiveness of local content policies.

2 International Experience

LCRs have been applied sporadically since the 1990s, largely in East Asia and Latin America, but their application spread more widely from 2009 as a policy tool to re-industrialise and create jobs after the devastating effects of the global financial crisis (Leigland & Eberhard, 2018). The use of LCRs extends across multiple sectors, from ICT, health and machinery and equipment sectors, to mineral extraction and energy (Hansen, Nygaard, Morris, & Robbins, 2019); and the Global Trade Alert database has recorded over 100 LCRs, primarily in India, Brazil, Saudi Arabia, and the USA (Figure 1).

Figure 1: LCR implementation by country (% of world total) in 2017/18



Source: (Deringer, Erixon, Lamprecht, & Marel, 2018)

Historically, LCRs have been more successful amongst East Asian economies, where they were complemented by government investment and education policies that targeted the development of local capabilities. Localisation policies have been less successful in resource-rich African economies, where the industrial base and capabilities are not sufficiently developed to meet the jump in demand for locally manufactured products (Rodrik, 2001).

2.1 Defining LCRs

Local content requirements are usually defined to include various mechanisms that favour domestic industry over foreign suppliers of goods and services (Leigland & Eberhard, 2018). They are generally imposed by governments to raise the participation of local suppliers in the economy (Hansen, Nygaard, Morris, & Robbins, 2019), while also pursuing wider policy objectives, such as employment creation, industrial development and technology transfer (Ramdoo, 2016).

LCRs can take various forms, with some focusing specifically on investment, and others on trade. Trade related LCRs are designed to limit the level of importation that producers and suppliers can undertake, whereas investment related LCRs require foreign investors or suppliers to establish a

local presence. Both forms can further compel foreign investors to take part in supplier and enterprise development initiatives that encourage knowledge and technology transfer (Stone, Messent, & Flaig, 2015).

More specifically, LCRs can include local assembly and product testing requirements, tax exemptions on products that meet certain local content levels, and preferential procurement regulations that set aside certain markets for locally produced goods (Deringer, Erixon, Lamprecht, & Marel, 2018). Government contracts reserved for locally manufactured products and import licensing procedures that limit importing also constitute LCRs. Broadly, this speaks to local sourcing, establishing local operations and sourcing local labour.

A case study of the heavy-duty vehicles (trucks, busses and coaches) industry among BRICS economies illustrates the varied application of LCRs (Deringer, Erixon, Lamprecht, & Marel, 2018). For instance, Brazil and China primarily used government procurement, while Russia and India mainly used financial support and export measures, respectively, to support the development of the motor vehicle industry. South Africa relied on government procurement and “other measures.” Importantly, the study found that the type of LCR can result in differing distortionary effects, with LCRs related to business operations, financial support and government procurement having the most significant cost-distorting effects.

2.2 The benefits, and costs, of LCRs

Assessing the impact of LCRs on the imposing countries, and on its trading partners, is difficult, because unlike tariffs and taxes, such measures are not applied in a consistent manner. Nonetheless, several qualitative and quantitative studies have been undertaken to assess their economic impact on a range of countries (Hansen, Nygaard, Morris, & Robbins, 2019; Ramdoo, 2016). These studies generally indicate that **there are significant benefits that can be derived from LCRs in the short-term, yet if not managed well, these can be eroded in the long-term. These impacts can be grouped into (i) domestic production, (ii) local prices, and (iii) trade.**

LCRs can increase industry output (or production) at several levels along the value chain. Firstly, output can increase within the industry in which they are applied due to the expansion of local production capacity. Secondly, the production of inputs and intermediate products can also increase to meet the growth in local manufacturing capacity. However, LCRs can drive the reallocation of domestic resources (labour, capital, and technology) from other sectors to LCR-supported industries, which can result in economic activity concentrating in sectors where LCRs are imposed (Deringer, Erixon, Lamprecht, & Marel, 2018). This can give rise to economic inefficiencies and potentially undermine the overall growth and innovation benefits that are derived from a diversified industrial base.

The greatest risk associated with LCRs is that they can have far-reaching price effects in the domestic market, from producers through to the end-users (Stone, Messent, & Flaig, 2015). The likely price increases arise from restricting access to alternative (import) markets, as well as from the cost of developing the capacity and competences to produce good quality products. An analysis of the motor vehicle sector in the BRICS economies indicated that the price of vehicles increased by between 0.5% and 5.4%, depending on the nature of the LCRs and the market (Deringer, Erixon, Lamprecht, & Marel, 2018). In the long run, such price increases can create a perverse incentive for local suppliers to inflate prices, thereby reducing any welfare gains.

LCRs can also induce a fall in trade by reducing imports and exports, especially of intermediate products. Stone, Messent and Flaig (2015) quantify the impact of LCRs on trade by using a multi-regional computable general equilibrium (CGE) model across OECD countries.⁷ The study finds that LCRs reduce imports in the short term, because of the import-displacement effect, while in the long run exports decline due to the erosion in competitiveness that stems from concentrating economic activity in a few sectors. Moreover, because the affected industries are not integrated into global value chains, the potential benefits from technology transfer and process upgrading are foregone.

South Africa is noted as having one of the most complex LCR frameworks (Korinek & Ramdoo, 2017), which includes both B-BBEE and the PPPFA. There is **currently limited evidence on their impact on the economy, though some studies point to increased investment, industrial capability development and employment creation. However, these gains seem to have been achieved at the cost of price increases and economic inefficiencies in some sectors** (Eberhard, Kolker, & Leigland, 2014; Hansen, Nygaard, Morris, & Robbins, 2019; Crompton & Kaziboni, 2020). For example, **a study on South Africa's renewable energy sector indicated that the LCRs increased the project price by 9.9% on average** (Ettmayr & Lloyd, 2017).⁸ These price increases tend to be **passed onto the energy consumer**, which diminishes any welfare gains created from increased production and employment. Consequently, the programme has not benefited the economy as intended (Leigland & Eberhard, 2018).

2.3 The pre-conditions for effective LCRs

Proponents of LCRs argue that domestic production is an important tool for creating jobs, diversifying the industrial base, and developing strong local capabilities. On the other hand, opponents argue that LCRs distort competition, decrease trade, and drive up consumer prices. While there are potential merits to both arguments, **the evidence suggests that some policies are more effective than others in maximising the gains and mitigating the costs**.

For LCRs to achieve their desired outcomes at an acceptable cost, certain pre-conditions must be in place. These conditions have been identified by numerous studies, including Kuntze & Moerenhout (2012) and Hansen, Nygaard, Morris, & Robbins (2019). The latter study summarises these pre-conditions, as illustrated below.

⁷ The database includes 20 aggregated sectors and 12 regions, plus the rest of the world. The countries in the study include Argentina, Brazil, India, Indonesia, Kazakhstan, Russia, Venezuela. In these countries, the industries affected by the local content regulations include insurance, mineral products, electricity, coal, oil and gas, motor vehicles and parts, and post and communications. The domestic share varies from as low as 16% to 100%. E.g. in Brazil, the domestic share for all motor vehicles and parts is 84.6%.

⁸ Due to data limitations, the study collected information from surveying engineering, procurement and construction firms, and Independent Power Producers involved in the first 4 rounds.

Table 2: Factors determining the effectiveness of LCRs

Factors	Characteristics
Market size and reliability	• The level of domestic market demand • The degree of predictability and long-term stability of the demand, for example, through target setting and political signals
Policy design and coherence	• The clarity and transparency of the rules and regulations pertaining to the LCRs, including definition and implementation procedures • The extent to which LCRs are aligned with and accompanied by complementary industrial policies supporting local manufacturing in the targeted sectors
Restrictiveness	• The level or percentage of locally produced content required under the LCRs
Industrial base	• The level of technological capabilities in the local supply base, including technical skills, specialisation, and the production capacity of domestic firms
<i>Source: (Hansen, Nygaard, Morris, & Robbins, 2019; Ettmayr & Lloyd, 2017)</i>	

The **availability of steady and significant demand** is critical in developing sustainable and competitive capacity domestically, and this requires government to send the right signals to potential investors and to stick to its plans. Likewise, **clear, and appropriate policy rules** are needed to encourage new investment, and **complementary interventions**, may be needed to strengthen technical know-how and production capacity. **Such policies are most likely to succeed in industrial sectors where skills and capabilities already exist.**

The preceding discussion highlights that **while there are potential short-term gains to localisation policies, the long-term effects can be detrimental, raising prices along the value chain and adversely affecting economic competitiveness across multiple industries. To mitigate against these adverse impacts, local content regulations need to be carefully designed and accompanied by other measures to ensure that there is sufficient demand, skills, and capacity available in-country to support a globally competitive supply chain.**

3 The Preferential Procurement Policy Framework Act, PPPFA

The Preferential Procurement Policy Framework Act (PPPFA) empowers the Department of Trade, Industry, and Competition (the DTIC, formerly the Department of Trade and Industry) to designate industries, sectors, and sub-sectors for local production at a specified level of local content. The PPPFA came into effect in December 2011 and was revised in 2017. The 2017 revisions aligned the PPPFA with the revised B-BBEE Codes of Good Practice and included amendments permitting the disqualification and blacklisting of bidders that submit false information related to BEE status, local content levels, among other violations (Crompton & Kaziboni, 2020).

3.1 Policy processes and procedures

The DTIC designated the first tranche of products and sectors including rail rolling stock, bus bodies, solar water heaters, and set-top boxes in 2011. Since then, the DTIC has broadened the list of designated sectors to include close to 100 products, as listed in Table 3. The DTIC believes that these designations will stimulate local demand, and provide the scale efficiencies required to develop the domestic manufacturing sector. The DTIC noted that there are still opportunities to designate further sectors once “thorough research and consultations have been concluded” (Department of Trade, Industry and Commerce, 2020). Moreover, the Preferential Procurement Regulations allow government entities to stipulate LCRs for sectors that are not included on the designated list in consultation with the DTIC.

Over time, the DTIC has amended the local content and production thresholds for some sectors, with a tendency to increase the local content levels. The DTIC has advocated for higher local content through increasing domestic manufacturing activities e.g. incorporating local fabrication or forging, or supporting local procurement of raw materials such as steel and plastic. For instance, working vessels were designated in 2014, and have since undergone two revisions: one in 2016, and again in 2018. The designation will be revised again in June 2023 to consider the localisation of complex products such as engines, generators, fuel purifiers, and navigational instruments. The designation for rail rolling stock was revised in 2016 following the initial designation in 2014 to include the local manufacture of primary steel-related products to support the steelmaking industry.

Once a sector has been designated, the National Treasury’s Office of the Chief Procurement Officer (OCPO) issues an instruction note legislating the designation and providing detailed procurement information.⁹ For example, in the case of firefighting engines, where local content of 30% is required, the OCPO’s instruction note specifies that the manufacture of the crew cabin and superstructure must be done locally, along with the assembly of the firefighting vehicle. The designation also recognises that there are parts that can be imported (such the engine, chassis, transmission, and braking system, axles, and prop-shafts) and assembled locally due to limited domestic capabilities.

⁹ http://ocpo.treasury.gov.za/Buyers_Area/Legislation/Pages/Practice-Notes.aspx

Table 3: Designated sectors

Industry/sector/sub-sector	Min LC %	Industry/sector/sub-sector	Min LC %	Industry/sector/sub-sector	Min LC %	Industry/sector/sub-sector	Min LC %
Steel Value-added Products:	100%	Rail Signalling:	65%	Pumps, Medium Voltage (MV) Motor and Associated Accessories:	70%	Air insulated MV Switch-gear	50%
Fabricated Structural Steel	100%	Components	40% – 100%	Casting or Frame Fabrication	100%	Instrument Transformers	15%
Joining/Connecting Components	100%	Rail Permanent Way:	90%	Fabrication and winding of the Rotor Core	100%	Busbars	5%
Frames	100%	Rails and rail joints	100%	Accessories	100%	Housing	25%
Roof and Cladding	100%	Ballasts	100%	Assembly and testing of the fully built unit	100%	Switching Devices	5%
Fasteners	100%	Ballastless	100%	Transformers and Shunt Reactors:		Solar PV Components:	
Wire Products	100%	Turnouts/switches and crossings	100%	Class 0	90%	Laminated PV Modules	15%
Ducting and Structural pipework	100%	Railway sleepers:	100%	Class 1	70%	Module Frame	65%
Gutters, downpipes & launders	100%	Rail fastening and accessories	100%	Class 2	70%	DC Combiner Boxes	65%
Steel Value-added Products	100%	Railway maintenance of way plant & equipment	70%	Class 3	45%	Mounting Structure	90%
Plates	100%	Assembly and testing of fully build units	100%	Class 4	10%	Inverter	40%
Sheets	100%	Bulk Material Handling	85%	Components and conversion activities	50% – 100%	Solar Water Heater Components	70%
Galvanised and Colour Coated Coils	100%	Conveyer Idlers	70%	Two Way Radio Terminals and Associated Equipment:		Industrial lead Acid Batteries	50%
Wire Rod and Drawn Wire	100%	Structural Steel	100%	Portable Radio	60%	Plastic Pipes	100%
Sections	100%	Rubber	100%	Mobile Radio	60%	Polyvinyl chloride (PVC) pipes	100%
Reinforcing bars	100%	Conveyor Belt	100%	Repeater	60%	High density polyethylene (HDPE) pipes	100%

Industry/sector/sub-sector	Min LC %	Industry/sector/sub-sector	Min LC %	Industry/sector/sub-sector	Min LC %	Industry/sector/sub-sector	Min LC %
Steel Power Pylons,	100%	Pulleys	60%	Components	20% – 100%	Polypropylene (PP) pipes	100%
Monopole Pylons,	100%	Fire Fighting Vehicle	30%	Set Top Boxes (STB)	30%	Glass reinforced plastic (GRP) pipes	100%
Steel Substation Structures,	100%	Crew Cabin	100%	Residential Electricity Meter:		Pharmaceutical Products:	
Powerline Hardware,	100%	Super Structure	100%	Prepaid Electricity Meters	70%	OSD Tender	70% (volumes)
Street Light Steel Poles,	100%	Assembly	100%	Post Paid Electricity Meters	70%	Family Planning Tender	50% value
Steel Lattice Towers	100%	Working Vessels/Boats (All types):	60%	SMART Meters	50%	Furniture Products:	
Electrical and telecom cables	90%	Components	10% – 100%	Wheely Bins	100%	Office Furniture	85%
Buses (Bus Body)	80%	Conveyance Pipes	80% – 100%	Textile, Clothing, Leather and Footwear	100%	School Furniture	100%
Rail Rolling Stock	65%	Valves products and actuators	70%	Canned / Processed Vegetables	80%	Base and Mattress	90%
Source: List of designated industries, sectors, and sub-sectors for local production (Department of Trade, Industry and Commerce, 2020)							

Bidders can **apply for an exemption** from the minimum LCRs for material that cannot be sourced in South Africa at any time (before tender adjudication, or after being awarded). Exemptions are considered in cases where required volumes are not available, local manufacturers cannot meet the order requirements, or if input materials or components are not available locally, among other exceptional circumstances. In such instances, the bidder submits a written request to the DTIC that includes the tender information along with the description of the product for which an exemption is requested, and supporting letters from local manufacturers and suppliers.¹⁰ The DTIC commits to process the exemptions within 5 days, except for rail rolling stock and boats/vessels that need 7 days.

In defining local content, the PPPFA adopts the South African Bureau of Standards (SABS) approved approach, as outlined in technical specification number SATS 1286:2011. This document defines local content as the “proportion of the tender price that is not included in the imported component provided that local manufacturing takes place,” and is calculated as follows:

$$\text{Local content} = \left(1 - \frac{\text{imported content}}{\text{tender price, excluding VAT}}\right) \times 100$$

The imported content includes the cost of imported components, parts, or materials plus any costs related to importing such as freight, insurance, handling fees, currency conversion, and if relevant, import duties. Importantly, the imported content refers to all the material, parts, and components imported by the bidder, suppliers, or third parties in the production of the goods or services supplied to the government. In other words, the bidder is required to trace all local content provided along the value chain, from the OEM back to the raw material suppliers. The information relating to local content calculations and exemptions are submitted as the bidder's Local Content Declaration once verified by the bidder's chief financial officer.

Verification of the Local Content Declaration is not mandatory. However, the procurement authority may require that the measurement of local content be independently verified. The verification can be undertaken by an accredited verification body or an independent registered auditor. Accredited verification bodies are qualified through the South African National Accreditation System (SANAS), and in 2019, there were over 1,600 accredited verification bodies, including calibration, testing and verification laboratories, certification bodies, inspection bodies, verification agencies.¹¹ Independent registered auditors must be approved by the Independent Regulatory Board of Auditors (IRBA), and in 2019, there were over 4,000 independent registered auditors.¹²

Tenders that meet the LCRs proceed to the evaluation phase, which is based on the 80/20 preferential point system (for tenders between R30,000 and R50 million) or the 90/10 preferential point system (for tenders over R50 million): the higher proportion is for the price (80 or 90), while the lower proportion (20 or 10) is based on the bidder's B-BBEE level of compliance. The PPPFA also makes provision for pre-qualification criteria, that effectively restrict procurement to small businesses with at least 51% black ownership, black woman owned businesses, black people living in rural or underdeveloped areas, military veterans or those living with disabilities.

¹⁰ http://www.dti.gov.za/industrial_development/docs/ip/Exemption_letters.pdf

¹¹ <https://www.sanas.co.za/Brochures%20and%20Reports/Annual%20Report%20for%202018%20-%202019.pdf>

¹² <https://www.irba.co.za/upload/Annual%20Report%202019%20Final.pdf>

3.2 The experience of EU investors

6 semi-structured interviews were conducted with EU-owned manufacturers, operation and maintenance companies, and exporters of transport equipment, pumps and motors, and PVC pipes. The respondents include companies that have significant experience and investment in South Africa dating to the early 2000s. For all of these businesses, municipalities, and state-owned companies e.g. Transnet and the Airports Company of South Africa, are key customers.

3.2.1 Localisation experience

As indicated above, the PPPFA requires that suppliers of designated products to government spend a specific percentage of the product's final value on local content and local production. In many cases the regulations go further to stipulate specific activities and materials that should be localised. Of the 4 local manufacturers interviewed, one company entered the local market after the LCRs were introduced, while the other three companies adjusted their business models to meet the LCRs. Despite these efforts to localise, two companies remain 10% to 20% shy of meeting the LCRs in their sector.

All respondents appreciate the importance of localisation policies in developing a strong industrial base. However, the **respondents argue that the way in which local capabilities are to be achieved through the existing localisation policy, is not sufficiently clear**. This is especially the case in industries where the market size is too small, or demand is too unstable, to support domestic production. It was suggested that a **'road map' should be developed to clarify the objectives of the PPPFA, and to explain how sector designations are expected to contribute towards industrial development in each sector**.

If we look at the firefighting vehicle industry, for example, the DTIC issued a local content designation at 30%, with the superstructure of the firefighting vehicle designated at 100% i.e. it should be wholly manufactured locally. The superstructure is effectively the entire body of the fire engine, including the water tank and pump, which is built on the back of the chassis. The respondent indicated that the superstructure is manufactured from aluminium, aluminium sheets, closures, plastics, among other parts and components, and is held together by screws and joints. The respondent indicated that it is well-known that local companies import screws and the aluminium sheets since there are no local manufacturers. As such, there are no local assemblers capable of meeting the stipulated 100% on the support structure.

Strategies to meet the LCRs

Of the 2 EU manufacturers that can meet the LCRs, **one company managed to ramp up local production on the back of substantial investment by the parent company**. The local subsidiary was acquired by the EU parent company in the early 2000s, and has received further technical injections since then. In 2014, the parent company was awarded a large government tender (amounting to close to R1 billion) to supply government with specialised equipment. This particular government tender was tied to the Department of Public Enterprises' Competitive Supplier Development Programme, and required the foreign investor to invest 25% of tender's value towards supplier development programmes, and skills development and transfer initiatives.

The second company entered the South African market through a joint venture with a local company. The EU investor brought in expertise and technology, and set up a manufacturing facility in one of SA's industrial development zones (IDZs). The company also sources raw materials from a domestic supplier of chemicals, and other inputs (moulds, tooling, and other consumables) from local suppliers. Accessing local materials allows the company to undertake all value addition activities locally. Before localising, the company used to export from the EU to South Africa, but changed

its strategy in order to compete effectively in the domestic market, while also attempting to fulfil local content and production requirements.

For the other companies, localisation has been more complex, and **they have adopted a modular approach to manufacturing i.e. importing components and assembling locally**. This is primarily because the designated products require skills and technology that are not available in South Africa. One company noted that the local plant does not house the robotic equipment that is required for the precision manufacturing that is undertaken at the European-based plant. While there are foundries in the local market that cast good quality products, domestic foundries do not manufacture to the firm's standard nor pricing requirements, when compared to their European and Asian counterparts. Thus far, the company has managed to localise the assembly of equipment, while sourcing local engineering expertise and consumables e.g. paints, nuts and bolts, grease, and packaging (wood and plastic). Despite these extensive efforts, the company can only achieve a local content level of 50%, and not the prescribed 70% to supply government entities.

Exemption application processes

All four companies have approached the DTIC for an exemption from the designations and indicated that the **process is straightforward**. Of these company, three have been granted an exemption by the DTIC for exceptional circumstances. For instance, one supplier was unable to source raw materials from the only local supplier because their factory had burnt down. The firms cited different response times from the DTIC: three companies found the process quick, while it was delayed for the other company.

A major area of concern is that exemptions are granted on a case-by-case basis; and are only applicable to the firm that applied. This despite the fact that in granting the exemption, the DTIC must have determined that there is no capacity in the domestic market to provide the product. **To ensure fair competition and reduce administrative costs, this information and the associated exemption should ideally be extended to all suppliers of the same product** (Crompton & Kaziboni, 2020).

3.2.2 Impact on the product price

In general, the respondents found it difficult to determine the cost of localisation on their businesses, though some estimations are provided (Table 4). **For two of the companies, the cost of localising was relatively modest, but for one OME, localisation could lead to an increase in production costs of 60%.** On the other hand, localising reduced the cost of producing standardised parts for two of the companies interviewed. The net impact differs by sector, and largely depends on the availability of competitive inputs in South Africa.

Table 4: Impact of cost of doing business in companies

	Cost change	Explanation	Pricing response
Assembler (1)	Increase by 3% to 4%	The cost difference between importing parts and sourcing local parts for assembly	Fully pass onto the customer
Assembler (2)	Decreased (no % assigned)	Importing components is cheaper than importing fully built product	Absorbed by the company to offset other costs of doing business
Manufacturer	Increase by 10%	Includes the high cost of local raw materials	Absorbed by the company given the industry's price competitiveness
OEM, subsidiary & parent company	Decreased by 30%	Manufacturing standard OEM parts have become cheaper over time compared to developed countries	Fully passed onto the customer to be competitive
	Increase by 60%	There are limited capabilities in SA to manufacture specialised equipment	Fully passed onto the customer
<i>Source: Responses from semi-structured interviews. 2 companies interviewed did not provide information related to costing.</i>			

The steel and plastics sectors are root industries for most manufacturing activities. However, **there are well documented structural inefficiencies in the local steel and chemical (for plastics) making industries**, which increases the cost of sourcing local raw materials. One of the companies managed to import polymer at 15% below the local price, including importing costs.

The two companies that managed to reduce the cost of production after localising benefited from long-term investments in developing local capabilities, and import protection. One of these companies invested in a strong supplier development programme, linked to a large government tender. The local companies involved received proprietary knowledge, and benefitted from technical and technology transfers. The other company localised assembly, given that the import duties on fully built products is higher than importing parts and components. As such, the company benefits from combining the domestic manufacture of standardised parts, to meet local content and production requirements, while continuing to import specialised parts.

3.2.3 Emerging successes

Based on these consultations, **there is evidence that EU firms have responded positively to the PPPFA and are investing in localising the assembly and/or manufacture of parts and components**, despite most of the design and engineering activities still occurring in Europe (and other subsidiaries in the Americas). This has led to the development of local manufacturers of OEM parts and components, and on-going technological and skills transfer.

But in these cases, **localisation only works on the back the complementary enterprise and supplier development initiatives that are undertaken by EU businesses.** For example, in the shipbuilding industry, an EU investor leveraged its expertise in the design and manufacture vessels to transfer technology and skills to bolster local capabilities. Specifically, the company developed suppliers within the fabrication, foundry, welding, carpentry, and electronic installation and hydraulic installation industries. Additionally, the company undertakes regular supplier audits to ensure that the quality of components continue to meet international standards. In doing so, the firm has developed a strong local base that supports the EU business to service the aftersales market in SA and exports to other countries across Sub-Saharan Africa.

Skills development and technology transfers are taking place. The introduction of advanced machinery and equipment requires companies to invest in skills development, including those required to maintain and operate equipment. Moreover, the localisation of advanced technology provides local suppliers with exposure to the latest industry developments, further enhancing their

knowledge and skills base. These skills can also be transferred to end-users, including in government entities and municipalities, to ensure that state-owned entities are equipped to maintain and operate the equipment without relying on the OEM.

There is also evidence from some companies that technology developed abroad is being adapted and designed for the local industry. One company indicated that they have established product development and fabrication facilities in SA. Another company is in the process of designing equipment that can disrupt the local industry and increase competition, by tailoring equipment designed for the EU market to meet South African requirements.

Finally, **EU firms are leveraging their position in South Africa to enter the Sub-Saharan market, and increasing exports from South Africa.** All of the companies interviewed indicated that they are exporting their products to the private sector and the public sector in the region. Being located in South Africa provides them with a competitive advantage in the region, where speed to market is important. For example, one company has reduced lead times from 8 to 10 weeks to less than a week from setting up in SA. Despite difficulties in supplying government entities, two companies have increased output over the last few years through exporting.

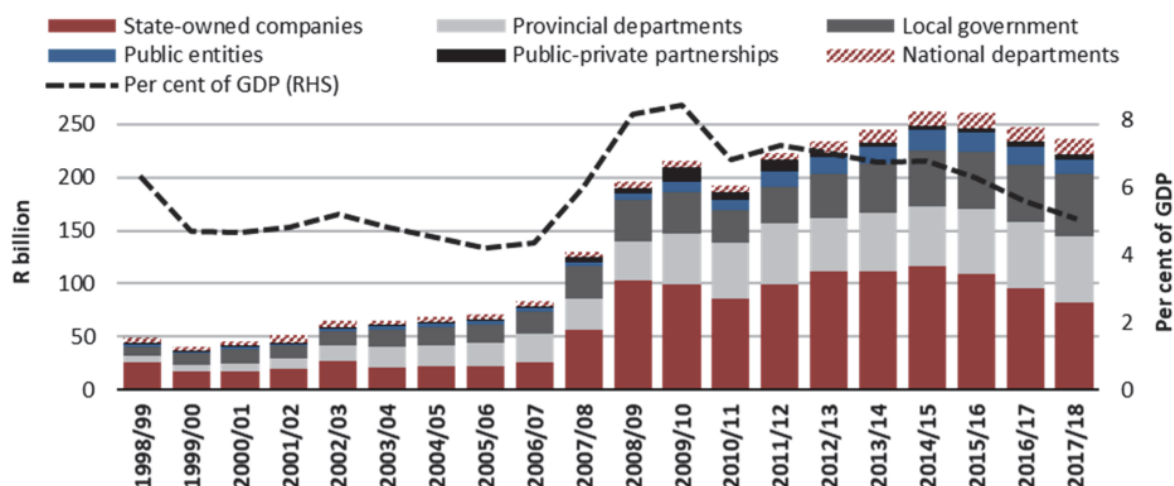
3.2.4 Key challenges and constraints

The most challenging aspect of the PPPFA raised by EU investors was the **lack of transparency in the determination of the minimum local content thresholds.** While the DTIC noted that the designations were informed following stakeholder consultations, there appears to be a limited understanding of industry capabilities, and the scope for localisation, within different sectors. None of the EU businesses were involved in these stakeholder consultations.

The second concern is the **decline in public sector infrastructure expenditure.** As indicated in Figure 2, state-owned entities have cut back in spending significantly, greatly reducing demand for some products. For instance, energy infrastructure investment amounted to about R110 million in 2014/15, yet reduced to about R80 million in 2017/8 (National Treasury, 2019). One company in the plastics industry closed down in 2018 as a result of reduced public sector demand, shedding 700 jobs.¹³ The firefighting vehicle sector has also recorded a decline in orders, noting that most procurement is for emergency needs.

¹³ <https://www.iol.co.za/business-report/companies/dawn-cuts-700-employees-in-six-months-18446574>

Figure 2: Public-sector infrastructure spending to date, R billions



Source: (National Treasury, 2019)

Third, **the volatility in procurement for certain products is problematic, with respondents indicating that localisation is better suited for industries with steady demand.** For instance, PVC pipes are purchased by government entities more frequently, compared to firefighting vehicles or rail rolling stock, that have life spans of 15 and 30 years, respectively, though there are opportunities to supply replacement parts more frequently.

To support domestic investment, and localisation, other supporting policies need to be in place. Respondents suggested that complementary policies are not applied consistently in some cases. One company benefitted from accessing the DTIC's Section 12i tax incentive, and from the benefits of being located in the Atlantis SEZ where it received tax incentives e.g. a building allowance, and customs relief for imported products. However, another company located in Richard's Bay Industrial Development Zone cited several challenges in accessing these same tax incentives. This business is struggling to break-even and cited various reasons for this, including the SEZ's failure to timeously honour its financial commitments.

A couple of companies noted that **pursuing local development through LCRs, can have negative consequences for regional development**, particularly within the Southern African Customs Union (SACU). For example, a key player in Botswana's PVC manufacturing industry relocated its manufacturing plant to the North West Province in South Africa, simply to comply with South Africa's LCRs. While regional strategies, including the SADC Industrialisation and Roadmap Agenda 2015-2063 highlight the importance of reducing the barriers related to local procurement, there is need to translate these into national policies.

B-BBEE requirements were also cited as another bottleneck to supplying state-owned entities and local government. Companies are expected to comply with South Africa's B-BBEE scorecard, which is used in the 80/20 or 90/10 preference point system for all government procurement, over and above any LCRs in place. In terms of this scoring system, international investors that are unable to obtain a reasonable B-BBEE score, struggle to supply government entities even when more price competitive than local suppliers. As noted earlier, the Draft Public Procurement Bill, which will replace the PPPFA, leaves the preference point system to be determined through future but unseen regulations, raising further concerns and uncertainty.

4 The Renewable Energy IPP Programme, REIP4

The Renewable Energy IPPP Programme (REIP4) contributes towards the Government's drive to (i) lower greenhouse gas emissions, (ii) complement the state's electricity generation and enhance energy generation from the private sector, and (iii) pursue secondary policy objectives such as job creation, social upliftment, and broad-based economic growth (DMRE, 2019). The REIPP Procurement Programme was established in 2010, and was granted an exemption from government's standard procurement processes. The exemption allowed IPP Projects to be evaluated based on a 70/30-point system, instead of the PPPFA's 90/10 or 80/20 preference point system.

4.1 Local content processes and procedures

REIP4 defines local content as the proportion of the total project value that represents products and services that have been sourced locally. By this, the total project value excludes the value of imported components, parts, or material (including freight, insurance, and other direct import costs) as well as services provided by persons or entities that are not paying tax in South Africa. Project bidders are expected to provide the breakdown of the costs of the products and services that will be localised. The local content requirements only apply to the project's construction phase, and is calculated as:

$$\text{Local content} = \frac{\text{Value of Local content spend}}{\text{Total project value}}$$

REIP4 projects are evaluated using a 70/30 weighting, where 70% is based on price, and 30% is accounted for by various Economic Development Criteria. The non-price criteria were introduced to encourage the development of remote areas, and bidders are required to identify opportunities to invest in skills development, local suppliers, and entrepreneurs, as well as providing ownership opportunities to local communities. Within the Economic Development criteria, local content accounts for 25% of the weighting, which is equivalent to 8% of the overall project score (Table 5).

Table 5: REIPPPP Economic Development Elements and effective contribution, in terms of total project value*

Element	Minimum threshold	Maximum target	Weight	Effective %
1. Job creation	12%-15%	20%-80%	25%	8%
2. Local content	40%-45%	65%	25%	8%
3. Ownership	B-BBEE: 12% Local Community: 2.5%	B-BBEE: 30% Local Community: 5%	15%	5%
4. Management Control	0%	40%	5%	2%
5. Preferential procurement	B-BBEE: 0% QSE & EME: 0% Women-owned: 0%	B-BBEE: 60% QSE & EME: 10% Women-owned: 5%	10%	3%
6. Enterprise development	0%	0.6%	5%	2%
7. Socio-economic development	1%	1.5%	15%	5%
			100%	30%
Source: (IPP Office, 2014). *The effective % based on author's calculation.				

A detailed explanation of the procurement process is provided in Appendix 2.

The required local content levels vary by technology, and these have been increasing through each Bid Window (Table 6). Moreover, in increasing local production, the government also identified components that should be manufactured locally, by technology. The comprehensive list of these components, by technology, is listed in Table 6. For wind, this included towers, masts, and blades, while for solar PV this included modules, mounting frames, and inverters.

Table 6: Local Content Thresholds and Targets* per technology and bid window (BW)

Technology	BW 1		BW 2		BW 3		BW 4	
	Min	Target	Min	Target	Min	Target	Min	Target
Solar PV	35%	50%	35%	60%	45%	65%	45%	65%
Solar CSP	35%	50%	35%	60%	45%	65%	45%	65%
Onshore wind	25%	45%	25%	60%	40%	65%	40%	65%
Biomass	25%	45%	25%	60%	40%	65%	40%	65%
Biogas	25%	45%	25%	60%	40%	65%	40%	65%
Landfill Gas	25%	45%	25%	60%	40%	65%	40%	65%
Small Hydro	25%	45%	25%	60%	40%	65%	40%	65%

Source: https://www.gsb.uct.ac.za/files/EberhardNaude_REIPPPReview_2017_1_1.pdf.

Table 7: Key components identified in the REIP4 Bid Window 4

Technology	Component	Technology	Component
Concentrated Solar Power (CSP)	Solar concentrators and mounting	Onshore Wind	Meteorological mast
	Heat receiver		Turbine tower
	Heat transfer fluid and handling system		Turbine nacelle (including interior fittings, exterior fittings and drive train)
	Electrical generation system (including generator, steam turbine and ancillary equipment)		Blade
	Condenser and cooling system	Small Hydro	Turbines
	Thermal storage system		Generators
	Distributed control system		Hydro-mechanical plant (penstock and steel gates)
	Pumps, motors and auxiliary steam cycle equipment	Biomass	Boilers
Solar Photovoltaic	Water treatment plant		Fuel storage and handling system (including conveyors)
	Solar modules		Electrical generation system (including generator, steam turbine and ancillary equipment)
	Mounting frames	Biogas	Water treatment plant
	Inverters		Gas Engine/turbine and generator
	Transformers		Digester tanks
Landfill Gas	Control and Tracking control for tracker frames		Flare
	Gas Engine and generator		
	Gas wells and piping		
	Flare		

Source: RFP for Bid Window 4

Notably, the key components under solar PV align with the components that have been designated by the DTIC under the PPPFA (see earlier Table 3). It should be stressed that **these lists serve as guidelines, and bidders are not required to source all of these components locally during the construction phase. The IPP can determine how to achieve the prescribed LCRs by using a combination of these products.**

4.2 REIP4 auctions and capacity

Since 2011, the DOE (now DMRE) implemented 5 Bid Windows amounting to close to 6 300 MW across 92 projects (Table 8). Other estimations, which place the RE capacity at 6 400 MW across 112 separate projects, may include small RE projects. Of this, 3 976 MW of electricity generation capacity had been connected to the national grid.

Table 8: Summary of renewable technologies projects, by bid window and technology

	Capacity (MW)					No. of projects
	Onshore wind	Solar PV	CSP with storage	Other	Grand Total	
Bid window 1	639,34	625,17	150,00	-	1 414,51	28
Bid window 2	555,13	414,00	50,00	14,22	1 033,35	19
Bid window 3	785,31	435,00	200,00	24,06	1 444,37	17
Bid window 3.5	-	-	200,00	-	200,00	2
Bid window 4	1 362,81	812,90	-	29,70	2 205,41	26
Grand Total	3 342,59	2 287,07	600,00	67,98	6 297,64	92
<i>Source: (IPP Office, 2020). * Other includes biomass, landfill gas and small hydro</i>						

Renewable energy projects are concentrated in the Cape Region, with the Northern Cape accounting for close to 45% and 65% of the onshore wind and the solar PV capacity generation, respectively. Wind projects are mainly located along the coastal regions of the Northern, Eastern and Western Cape where there is strong wind flow, while solar projects are in regions with high sun exposure.

Delays in RE programme

Following the last REIPP auction in 2014, Eskom indicated that it had surplus electricity capacity, which hindered it from taking on new capacity. This was despite the apparent energy shortages in South Africa, and the fact that significant investment had taken place. Subsequently, in 2018, the DOE directed Eskom to sign purchase power agreements (PPAs) with the 27 IPPs.

In 2019, the DOE released the revised IRP 2019 with targets up to 2030, which provides for significant additional investment in renewables, primarily in wind and solar.¹⁴ Table 9 shows South Africa's expected generation capacity by 2030, and the contribution of different sources to the total. From the anticipated total new capacity of about 30,000 MW, close to 50% will come from wind, while 20% will come from solar PV. By 2030, South Africa's wind and solar PV capacity will amount to 11.4 GW and 8.2 GW, respectively.

¹⁴ <http://www.energy.gov.za/IRP/2019/IRP-2019.pdf>.

Table 9: South Africa's capacity under the IRP 2019 for renewable energy and other sources

	Coal	Coal - D	Nu-clear	Hydro	Storage	Solar PV		Wind	CSP	Gas & diesel	Other
2018	37,149		1,860	2,100	2,912	1,474		1,980	300	3,830	499
2019	2,155	-2,373						244	300		Allocation for energy gap in the short term
2020	1,433	-557				114		300			
2021	711	-1,430				300		818			
2022	750	-844			513	400	1,000	1,600			
2023		-555				1,000		1,600			
2024			1,860					1,600		1,000	500
2025						1,000		1,600			500
2026		-1,219						1,600			500
2027	750	-847						1,600		2,000	500
2028		-475				1,000		1,600			500
2029		-1,694			1,575	1,000		1,600			500
2030		-1,050		2,500		1,000		1,600			500
Total Installed by 2030	33,364		1,860	4,600	5,000	8,288		11,442	600	6,380	
Installed capacity as % of total by 2030	43		2.36	5.84	6.35	10.52		22.53	0.76	8.1	8.1
% Annual energy contribution (MWh) by 2030	58.8		4.5	8.4	1.2	6.3		17.8	0.6	1.3	1.3
		Installed capacity									
		Committed / Already contracted capacity									
		De-commissioned capacity									
		New additional capacity (IRP Update)									
		Extension of Koeberg Plant Design Life									
		Includes distributed generation capacity for own use									
Source: (DMRE, 2019)											

The efforts to smooth demand for new generational capacity were welcome by the industry, though there is a need to quickly catch up to the auctions to avoid probable delays in future auctions. During February 2020's State of the National Address, the President directed the DOE and NERSA to expedite the auctions for Bid Window 5. NERSA is still in the process of reviewing the comments to the Ministerial Determinations, which should initiate the process of procuring new electricity generation capacity.¹⁵ Further uncertainty has however been created by an announcement made by Eskom's CEO on 21 May 2020, which indicated that the utility provider is considering renegotiating the 20-year PPAs, especially those from the first two bid windows.¹⁶

¹⁵ See updated Consultation Paper 1 (deadline was 14 April 2020) and updated Consultation Paper 2 (deadline was 7 May 2020) here: <http://nersa.org.za/invitation-to-comment/>.

¹⁶ <https://www.esi-africa.com/industry-sectors/generation/eskom-keen-to-renegotiate-ppa-contracts-with-ipp/>

4.3 The experience of EU investors

9 semi-structured interviews were conducted with EU-based businesses involved in the local RE value chain as foreign shareholders in IPPs, engineering, procurement, and construction companies (EPCs), service providers, manufacturers and consulting companies across wind, solar PV, solar CSP, and cogeneration (waste-to-energy). Of the 9 respondents, 7 have been involved in the REIP4 programme since 2012, and have significant experience and investment in the RE sector.

4.3.1 Localisation experience

Overall, the respondents acknowledged that localisation policies and programmes play a critical role in meeting South Africa's socio-economic imperatives, such as developing local industrialists, transferring technical know-how, and attracting investment. **However, the cost of localisation cannot be ignored.** These costs are either absorbed by the private sector, or passed onto the government in the form of higher energy prices. While some of the costs associated with LCRs are unavoidable, transactional costs could be lessened by clarifying processes and procedures.

Table 10 illustrates that the actual amount of local content submitted in bids has been increasing across all technologies. For instance, the actual level of LC has increased by almost 20% for on-shore wind, from 27.4% to 46.9% between Bid Windows 1 and 3. Similarly, the actual local content for solar PV and solar CSP have increased, by 15.4% and 9.7% respectively (Table 10). Despite the increase in actual LC levels, it appears that bidders continue to fall short of the Government's targets.

Table 10: Actual bid submissions of LCRS since Bid Window 1

Technology	Bid window 1			Bid window 2			Bid window 3			Bid window 4		
	Min	Target	Actual	Min	Target	Actual	Min	Target	Actual	Min	Target	Actual
Solar PV	35%	50%	38,4%	35%	60%	53,4%	45%	65%	53,8%	45%	65%	No data
Solar CSP	35%	50%	34,6%	35%	60%	43,8%	45%	65%	44,3%	45%	65%	No data
Onshore wind	25%	45%	27,4%	25%	60%	48,1%	40%	65%	46,9%	40%	65%	No data
Biomass	25%	45%	No bid	25%	60%	No bid	40%	65%	40,0%	40%	65%	No data
Biogas	25%	45%	No bid	25%	60%	No bid	40%	65%	No bid	40%	65%	No data
Landfill gas	25%	45%	No bid	25%	60%	No bid	40%	65%	41,9%	40%	65%	No data
Small Hydro	25%	45%	No bid	25%	60%	No bid	40%	65%	No bid	40%	65%	No data
Source: (Eberhard, Kolker, & Leigland, 2014)												

In addition to rising targets, the definition of local content has changed over this period. Since Bid Window 3, local content has been defined to exclude the IPP's costs related to distribution and transmission connections, and has placed more importance on sourcing local parts and components (Table 11). Bidding documents have also been revised to instruct IPPs to provide greater emphasis on how local content will be achieved

Table 11: Changes in local content requirements definition

Bid window	Changes per bid window	Exclusions from the local content definition
BW 1 in 2011	Not applicable	Finance fees, Land cost and Operator mobilisation fees
BW 2 in 2012	Total costs up to the commercial operation dates, limited to spending on South Africans and SA products. More information was required on components and activities required to achieve LC commitment. Certain components were identified as priority but without point adjustment for this BW.	In addition to BW1, additional exclusions were made on imported goods and services
BW 3 in 2015	All raw/unworked steel and aluminium used in local manufacture of components was deemed local. Increased detail required on types of goods and services that form local content, and the suppliers of the products and services. Bidders were also requested to differentiate between key components and balance of the plant	In addition to BW2, transmission and distribution costs of the private company were also excluded.
BW 4 in 2018	No major changes	Same as BW3
Source: (Eberhard & Naude, 2017)		

Bidders that have been involved in the REIP4 since Bid Window 1 concur that the ramping up of LCRs has required companies to increasingly consider the sourcing of locally manufactured (or assembled) components such as solar inverter stations, wind turbines and steel towers. Going forward, local manufacturers expect that subsequent ministerial determinations (specifically for Bid Window 5) will designate local steel in manufactured components, along with the manufacture and/or assembly of parts and components.

Ability to meet the LCRs

The REIP4 Programme requires bidders to meet the minimum local content threshold against the total project value, without prescribing the manner through which local content is achieved. This flexibility has enabled project developers to assign different local content requirements to suppliers of goods and services along the value chain. In general, project developers have placed the onus to meet the LCRs on construction services and locally available equipment such as transformers, cables, and construction. Less emphasis has been placed on higher value and complex manufactured components such as wind turbines and solar inverters. For instance, one service provider indicated that they were required to meet a LC level of 60%, while the local content requirement on manufacturers has been less strict.

The respondents' ability to meet the prescribed LCRs depends largely on where they are located in the RE value chain. The two construction and installation companies indicated that while it was fairly easier to meet the LCRs, this came at a higher cost. Given the remote location of the projects, and the cost of training and upskilling staff, investment in skills and training initiatives were necessary. Conversely, the two manufacturers in the wind and solar sectors indicated that achieving the LCRs (as prescribed in the PPPFA) through the local manufacture of wind towers was costly. In the case of the solar industry, local manufacturers fell about 10% short of their required LC.

Localisation was particularly challenging for solar components, given the availability of low-cost imports. As such, most of the local content in the solar sector is sourced through domestic assembly, testing and wiring activities of solar inverters. In the case of steel towers, the raw material is imported, given that local steel is of inferior quality and more expensive.

The respondents also highlighted the high degree of overlap between local content requirements, and the other bid elements included under Economic Development. Companies that

invest heavily in job creation, enterprise development and preferential procurement – are also likely to contribute significantly to local value added. This raises questions about the need for companies to meet local content requirements if they are already achieving the ultimate employment and transformation objectives of the programme directly through supplier and enterprise development.

Strategies implemented to meet the LCRs

In response to the increasing local content requirements from Bid Window 3, companies adopted several strategies. **The most common response was establishing a local presence in South Africa** through setting up production facilities, partnering with local firms (e.g. JV), or creating multiple companies under one holding company to participate at different activities along the value chain.¹⁷ These strategies enabled companies to establish a stronger local supply chain by investing in and developing local skills and suppliers, and sourcing raw material and components. With the ramping up of LCRs some companies are already positioning themselves to invest further in expanding local facilities.

Companies also sought to develop stronger relations with suppliers, such as local manufacturers of transformers and low voltage cables. This came with specific **challenges**. Incorporating local suppliers into one MNC's global supply chain required **significant investment in supplier development to ensure that the parts and equipment adhered to global standards**. Moreover, **for most products sourced locally, there remains significant imported value**. For example, steel towers and blades can be fabricated in SA, though the turbines are still imported from overseas. In the end, while companies are able to source equipment locally, it should be recognised that this equipment also includes foreign content.

Outsourcing certain activities and services to local companies was also identified as a measure to increase local content. One company was only able to supply an OEM by subcontracting 85% of its services to a local company. This was a significant departure from the investor's *modus operandi*, but it was required to meet the LCRs (as well as B-BBEE compliance). This approach **did expose the company to the risk that some of its technology and knowhow might be misappropriated by its local partner**.

The importance of using local staff, coupled with the well-documented skills shortage in the country, resulted in **companies investing significantly in training and skills development initiatives**. Moreover, some foreign investors retained international experts (at a high cost) for longer than anticipated, in order to develop the required local skills base. In certain instances, the suppliers used their socio-economic development 'budget' to invest in training local staff to work on the projects.

4.3.2 Impact on the energy price

There is strong evidence that companies have made a concerted effort to source local staff, machinery and equipment, and materials where possible. One would expect this to add onto the cost of production, and that these costs would be passed on down the value chain, and subsequently onto the energy tariff. However, **the competitive nature of the auction process, and the fact the price accounts for 70% of the final award, drives the IPPs to contain costs in order to offer**

¹⁷ Three respondents set up subsidiaries to perform different tasks along the RE value chain: for example, one company could undertake engineering, procurement and construction activities, while another company was incorporated as an IPP, all under one holding company.

a competitive energy price. The pricing dynamics along the RE value chain are reflected in Table 12.

Table 12: Impact of LCRs on cost for REIP4

Stakeholder	Cost change, %	Explanation	Pricing response
Developer	Increase by 25% - 30%	Not due to LCRs, but retaining international experts for longer. LCR-related cost may be 10%	Partially passed onto the IPP
O&M	None	No LCR at the operations phase	N/A
EPC (1)	Increase by 15% to 20%	High cost of sourcing local parts, components, equipment, and machinery	Fully passed on to the IPP
EPC (2)	Increase by 15% to 20%	Compliance costs related to BEE and Economic Development, including sourcing from local suppliers	Absorbs the cost
OEM	Increase by 40%	High cost of sourcing local goods and services, and lack of price competition	Limited cost pass through due to competitive bidding process
Service provider	Increase by 10%	High cost of doing business in SA, which includes setting up, BEE compliance and LCRs	Developing cost structure that passes on the costs to the OEM
Tier 1 (1)	Increase by 18% to 40%	High cost of sourcing local parts and components	Partially pass onto the OEM
Tier 1 (2)	Increase by 25%	Opportunity cost of failing to implement REIP4, including auction delays	Absorbed by the company
<i>Source: Responses from semi-structured interviews</i>			

Project developers tend to make use of international suppliers that can offer goods and services at globally competitive prices; restricting supply to the local market is likely to increase costs. There are benefits to localising that should not be discounted such as offsetting the foreign exchange risk and avoiding import duties, however these tend to be smaller in magnitude. As a result, **utilising local services and goods has increased project costs for one respondent by approximately 10%, with the cost differential increasing in latter rounds. This cost difference is partially passed onto the customer, resulting in a price increase.**

At the **OEM level**, the main challenge is that there are few domestic manufacturing companies that can meet the LCRs. This limits price competition and the OEM's bargaining power, which can result in **abnormal pricing of locally produced solar inverters and wind towers**. One company noted that the price difference between local and imported equipment can be as high as 40%. At present, OEMs have not made any efforts to localise the manufacture of wind turbines, which are currently being imported.

Companies involved in engineering and construction activities primarily offer their services to OEMs or directly to the IPPs. These companies estimate that **their costs are between 15% and 20% higher as a result of the economic development requirements in general**. These costs are associated with subcontracting and investing in skills development, over and above the normal project requirements to meet the LCRs. The cost of investment is exacerbated by the requirement to recruit local staff within a 50 km radius of IPP projects (and these staff cannot then be used on other projects, outside of this locality). For example, one company noted that it invests R15 000 per employee on basic safety training accredited by the Global Wind Organisation (GWO). These firms indicate that they pass on a significant proportion of these costs to the IPPs or OEMs.

Tier 1 suppliers of parts and components to the OEMs noted that there are different implications for localising, depending on the technology. South Africa does not have existing manufacturing capabilities for solar inverters and solar modules, despite several companies attempting to invest

in this area. This is primarily because Asian manufacturers have a significant cost-advantage (due to scale economics and government support). Therefore, most local companies focus on assembly. Though there is **some scope to localise further, this would likely result in production costs increasing by between 18% and 30%.**

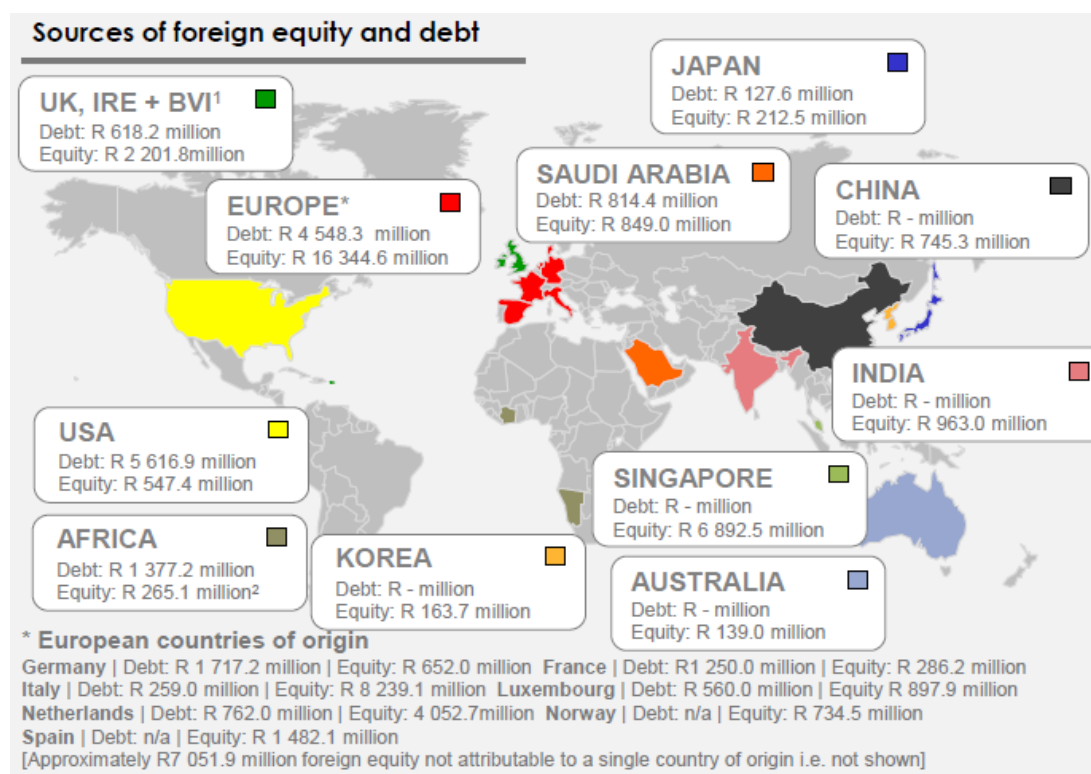
Wind generation brings together two key components: the steel (or concrete tower) and the wind turbine. Localising the production of wind turbines could potentially be undertaken on the back of capabilities in the automotive and rail sectors. However, significant investment would be required to assess whether existing engine manufacturing competencies in South Africa can be transferred to wind turbine manufacturing. Localising steel towers production has proven easier, though at a high cost. Two companies estimated that locally manufactured steel towers are between 20% and 40% more expensive due to limited economies of scale, and the lack of market competition.

Overall, the respondents emphasised that there is tension between the price of goods and services and LCRs. Increasing LCRs can directly result in higher production costs, however, the auction process ensures strong price competition. Inevitably, **IPPs and OEMs are compelled to push for lower prices from their local suppliers, which lack the scale and competitiveness of global producers. The net result is a margin-squeeze throughout the value chain, which can adversely impact the sustainability of many firms in an industry where orders are erratic.**

4.3.3 Emerging successes

The REIP4 programme has attracted significant investment and expertise into the local economy, and is contributing towards energy security and diversifying the energy mix (Eberhard, Kolker, & Leigland, 2014). The programme has contributed R200 billion in direct investment since Bid Window 1, of which R42 billion is accounted for by foreign direct investment. The EU accounts for just over 50% of the investment that was sourced from foreign investors and financiers (see Figure 3).

Figure 3: Foreign direct investment on the REIP4, equity and debt = R41.8 billion



Source: IPP Project 2019 Report, IPP Office

Access to local financing for projects has been instrumental in leveraging foreign investment. Two respondents noted that the projects would not have been feasible without financial support (in the form of equity) from the Industrial Development Corporation (IDC) and the Public Investment Corporation (PIC). The PIC and IDC either directly funded the projects, or funded the local shareholders in the IPPs.

Based on the interviews, this investment has resulted in (i) attracting investments along the RE value chain for services and production, (ii) skills transfer and quality improvements, and (iii) stimulated investment in remote areas. These outcomes are partially explained by the LCRs, which have required the IPPs to source a percentage of the total project value locally. **The respondents acknowledge that the LCRs will have a significant social impact, though it may take a long for them to fully materialise.**

The initial FDI has also served to attract additional participants into the South African RE sector. Two respondents noted that they located in South Africa following investments by international IPPs, and there is evidence that international Tier 2 companies are investing in South Africa to supply the OEMs and Tier 1 manufacturers. Through these investments, the two companies created approximately 325 direct jobs in South Africa, with scope to increase employment.

Furthermore, **foreign investment has been critical in developing local expertise through skills and technology transfer; especially in terms of the technical skills related to design, engineering, and the operation and maintenance of IPP projects.** For instance, most of the companies have implemented internal skills transfer initiatives that allow staff to learn from international experts locally, as well as attend training in Europe or the Americas. Two companies noted that they second local technicians abroad to develop the requisite skills needed to comply with international standards.

Finally, **because IPP projects are located in remote areas, the LCRs have also helped to facilitate investment and job creation in these areas.** For instance, new businesses are co-locating around the plants to offer specialised services (repairs and welding) and traditional services

e.g. cleaning and catering. Consequently, these efforts are introducing job and income opportunities in rural communities.

4.3.4 Key challenges and constraints

Most of the respondents noted that the **lack of clarity on the definition of local content has affected how companies approach localisation**. While the calculation of local content affords the project developers the flexibility to meet LCRs, it has created ambiguity on how LC should be achieved: project developers can have different standards across the value chain. This creates an uneven playing field for suppliers, thereby compromising the intended outcomes from localisation.

Second, efforts to localise have been severely undermined by the **volatile demand for RE projects, particularly with regards to delays in the fourth auction**. There was a significant ramping up in capacity by local manufacturers and assembling facilities to serve the wind and solar markets between 2013 and 2015 (Hansen, Nygaard, Morris, & Robbins, 2019), however, these are now being eroded, with factories closing down due to a lack of orders.

A notable example is DCD Wind Towers, which was established at the Coega Industrial Development Zone. In addition to receiving tax incentives from being located in the IDZ, the company received a capital injection from the IDC in 2016. Up until the company closed in 2019, the IDC was also covering the company's wage bill. Despite DCD Towers having a first-mover advantage in the market, and the financial support from government, a lack orders and uncertainty over future bid rounds resulted in the company's closure and 110 job losses.¹⁸

Lastly, the loss of Tier 1 companies, such as DCD Wind Towers, will make it difficult for IPP projects to meet the rising LCRs once the auctions and construction resume. In the wind sector, just one manufacturer remains with the capability to manufacture steel wind towers, with its capacity capped at 400 MW in projects per annum. From 2022 onwards, the expected new generation capacity in wind amounts to 1 600 MW per annum. At the moment, this company will not be able to meet the local demand, and it is therefore difficult to foresee how most wind related IPPs will meet the required LCRs.

¹⁸ <https://www.sabcnews.com/sabcnews/uncertainty-over-renewable-energy-results-in-job-losses-at-wind-turbine-company/>

5 Conclusions and recommendations

Local content requirements are increasingly used by governments, worldwide, to leverage public (and private) procurement in order to develop new industrial and technological capabilities. However, because LCRs intentionally limit competition and access to international markets, they can easily lead to economic distortions, raise prices, and reduce exports over the longer term. LCRs also tend to be opaque and complex, making them difficult to apply, let alone analyse their impact.

In South Africa, localisation policies have been employed to attract investment and develop industrial capacity, while also seeking to address historical injustices. **These objectives are acknowledged by EU investors, and in most cases, LCRs are not in themselves a problem.** To the contrary, localising has brought benefits to some EU firms in that it has reduced costs, enabled them to develop local supply chains, strengthened the available skills based and know-how in country, and enabled them to set up a competitive base for regional export markets.

However, the potential gains from localisation depend heavily on the nature of the sector; the extent to which local inputs are consistently and competitively available; the scale and frequency of demand; and the design and coherence of the policy framework in place.

In general, it is more challenging to localise the production of high-tech or specialised products that typically require advanced equipment, global economies of scale and skilled labour. Firms are also less likely to relocate their research and design services away from their head offices. On the other hand, across both localisation programmes, companies were willing and able to relocate less sophisticated manufacturing and assembly processes, or to source generic inputs from South African companies, if available at the right quality and price.

However, **both groups of EU firms experienced problems in accessing the full range of manufactured inputs and products at international prices in the local market.** While South Africa boasts a relatively well diversified manufacturing sector, **there are few companies capable of producing the required volume of goods at global standards, and the high concentration of producers in most industrial sectors limits capacity and price competition.** This has raised production costs for EU manufacturers and the final prices of the goods and services that they offer in South Africa.

This situation is exacerbated by the recent decline in public infrastructure investment, and delays in the IPP process. **A lack of consistent and predictable demand has destroyed much of the local capacity that was developed, especially in the construction and renewable energy sectors.** Moreover, given past policy uncertainty, and South Africa's weak economic outlook, firms are unlikely to invest in new productive capacity in the near future. This will further limit the range and value of inputs that can now be sourced domestically, relative to what was possible several years ago.

EU firms have also raised concerns about the **design and implementation of local content regulations in South Africa.** For EU investors in the renewable sector, the imposition of multiple non-price criteria in the REIP4 process complicates procurement and investment decisions, ultimately leading to greatly inflated costs. Similarly, the justification for product designations in the PPPFA is unclear and there are some LCRs that are simply unattainable, given that the lack of capacity in the domestic market. Whereas exemptions are easily obtained, this further undermines the credibility of the policy framework.

Over and above local content regulations, EU investors must still comply with South Africa's complex B-BBEE policy. For both groups of firms, it is this additional layer of commitment that is particularly problematic, and a major deterrent to new investment. **To expect foreign firms to invest in developing local capacity, sourcing most of their inputs and skills from South Africa, and to then also transfer a significant amount of equity to a domestic partner, is a big ask in the**

relatively small South African market. It is for this reason that some international firms choose to sell their goods and services through a South African agent, further raising the price for domestic consumers.

The evidence from this study suggests that well-considered LCRs can contribute to the development of local skills and industrial capacity, at least in the short-term. But in South Africa, the widescale implementation of multiple and complex regulations, coupled with weak demand and ongoing policy uncertainty, is unlikely to leverage new private investment in targeted sectors.

The South African Government is currently looking to extend and tighten local content regulations. Given the loss in domestic capacity that has occurred over recent years, this is likely to lead to a further escalation in prices in some sectors, benefiting a few entrenched manufacturers, while undermining exports and South Africa's long-term international competitiveness.

Instead, this study recommends that the Government reviews its current approach to local content regulations (and B-BBEE), with the intention of inducing much needed international investment into the South African economy. In the right sectors and under the right conditions, there are already significant gains to be had from being or sourcing local, and firms need not to be coerced through government policies. In the first instance, government should serve to communicate these opportunities to local and international investors; and should allow firms to work out how best to localise or provide them with appropriate incentives to do so. In instances where these opportunities depend on government procurement, such as the Integrated Resource Plan, the Government should signal to the market that they will not defer from the plan.

Local content regulations should only be necessary in extraordinary circumstances, where the market mechanism has somehow failed, and government wants to send a strong signal to investors to restore or create economically efficient capacity in an existing or new industry. To be effective, such interventions should be clearly defined, well-targeted, time-bound, and selective; and should only be considered where the potential costs are likely to be exceeded by the expected benefits. It follows that localisation requirements should be sector and context specific, taking into account the availability of skills within the sector, the potential for achieving market scale, and the cost of any additional government support to the development of the local industry.

In the PPPFA, this would require a rethink of the current broad-based approach; with designations limited to those products where there is strong and stable government demand, and a proven but untapped supply of competitive local inputs. Moreover, the onus should be on government to demonstrate why regulatory intervention is needed ex ante, and not on buyers and suppliers to explain why this intervention cannot work (and have to apply for exemptions) once it has already been implemented.

Similarly, in the REIP4, local content requirements should be limited to components that can be reasonably and competitively manufactured in South Africa; and the overall cost implications of the economic development criteria on energy prices in South Africa must be closely monitored. Given delays in the bid process, and the loss in domestic capacity that has occurred in this sector in recent years, this would likely require some relaxation of these criteria in Bid Window 5.

In both cases, the interaction between local content regulations and B-BBEE deserves further exploration. Specifically, firms that have invested heavily in localising production and employment, should receive some recognition for these efforts in their B-BBEE scoring, potentially offsetting some or all of the current ownership requirements. Moreover, stricter enforcement of fronting regulations may be needed to prevent local companies from laundering international goods and services and presenting them as local through agency arrangements.

Finally, **the lack of a regional agreement on government procurement or a common approach to local content, at least within SACU, could lead to a race to the bottom.** Strict country-level LCRs, that do not recognise regional content, may induce companies to disinvest and relocate to where LCRs are imposed. This would not only lead to the de-industrialisation of South Africa's smaller neighbours, but would undermine efforts to develop regional value chains. This is potentially an area where the region can learn from the EU experience, where member countries are not permitted to discriminate against each other in government procurement.

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APPENDIX 1 EU-SA INVESTMENT AND TRADE TRENDS

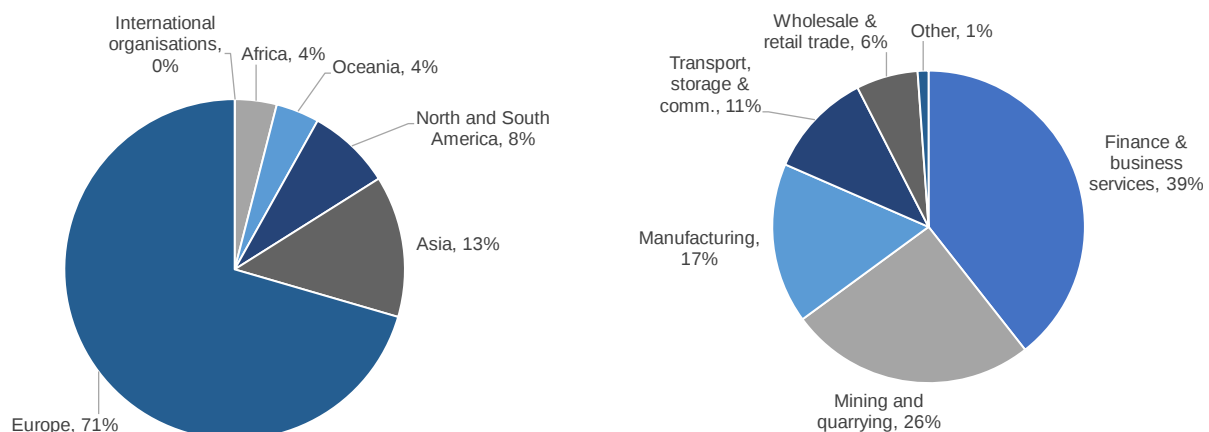
The EU remains South Africa's largest international investor and key trading partner. Many EU businesses are already major suppliers to the South African Government, either directly or as suppliers of inputs into goods and services procured by the state. The EU is also a substantive participant in the South African renewable energy and motor industry programmes. Any changes to the rules that govern domestic procurement or the participation of foreign firms in industry-specific programmes, may have a disproportionate impact on the ability of EU companies to invest or export into South Africa. The tightening of such rules may also prove harmful to existing businesses, though some may stand to benefit.

A 1.1 Investment patterns

At the end of 2018, SA's total direct investment amounted to approximately R2.0 trillion. FDI accumulation in SA has declined significantly over the last three years, with SA experiencing dis-investment in 2015. In 2018, Europe accounted for 70.5% of total direct investment and of this, the United Kingdom is the single largest contributor (29.4%) followed by Netherlands (19%), Belgium (10%) and Germany (5%). Asia's investment into South Africa is mostly from Japan (42%) and China (33%). At a sectoral level, most of the direct investment has been into Finance, insurance, real estate and business services (39%), Mining and quarrying (26%) and Manufacturing (17%) (

Figure A. 1).

Figure A. 1: South Africa's Foreign Direct Investment inflows (R2.0 trillion), by region and sector

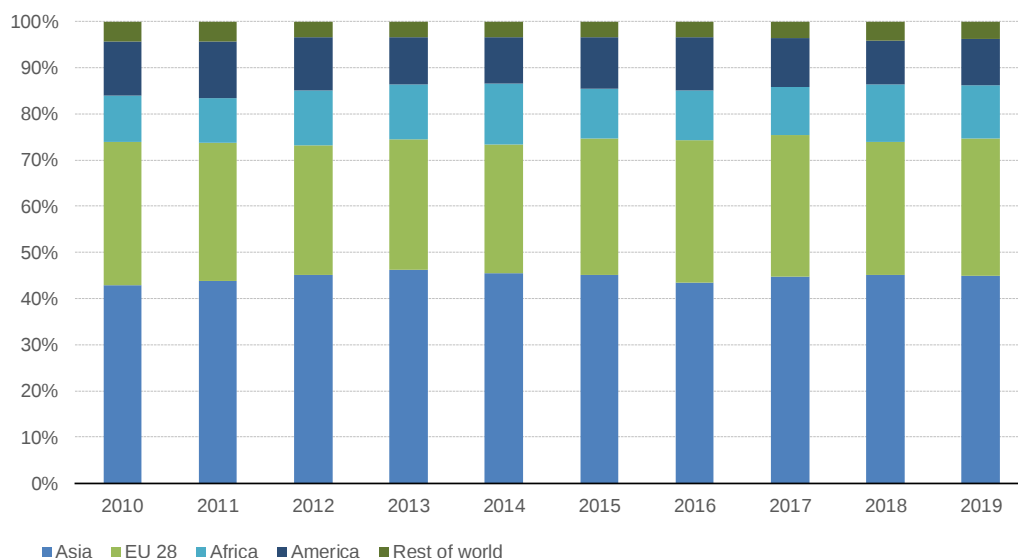


Source: (South African Reserve Bank, 2019)

A 1.2 Trade

Localisation policies are likely to affect international companies that export finished goods and intermediate products to South Africa, in sectors where there are local content regulations (refer to Section 4). The South African market is primarily dominated by products from Asia (48%) and Europe (31%), with the remainder split between the rest of the continent, America and the rest of the world. 15% of South Africa's imports are petroleum oils (crude and processed), while commodities that are not specified elsewhere amount to 9% of imports (US\$8 billion, mainly from Germany, Thailand and Japan). The remainder of the imports are distributed across manufactured products such as machinery and equipment, vehicles and electrical machinery, including parts thereof.

Figure A. 2: South Africa's import sources, by country, total imports equal to US\$88 billion



Source: Trade Map

Table A. 1: South Africa's top imports from the EU, total imports = US\$26.1 billion in 2019

Product	2017 US\$ mn	2018 US\$ mn	2019 US\$ mn
Commodities not elsewhere specified	4,051	4,104	4,202
Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof	4,245	4,091	4,128
Vehicles other than railway or tramway rolling stock, and parts and accessories thereof	3,408	3,270	3,413
Electrical machinery and equipment and parts thereof	1,778	1,533	1,568
Pharmaceutical products	1,258	1,394	1,363
Plastics and articles thereof	963	1,088	996
Printed books, newspapers, pictures and other print products	240	931	937
Optical, photographic, cinematographic, measuring prods	840	887	849
Miscellaneous chemical products	708	703	689
Mineral fuels, mineral oils and products of their distillation	915	1,060	617
Paper and paperboard; articles of paper	480	557	538
Essential oils and resinoids	393	456	448
Beverages, spirits and vinegar	342	399	441
Iron and steel	328	407	400
Other products	5,585	6,080	5,552
Total imports	25,535	26,692	26,141
Source: Trade Map			

South Africa's top three imports (excluding commodities not elsewhere specified) from the EU include products that are prescribed local content regulations and incentive programmes. The PPPFA has a strong focus on steel and steel products, pumps and motors, plastic pipes, while the REIP⁴ requires local content in components required in the manufacture of renewable energy equipment e.g. pumps, inverters, solar modules, and transformers. "Other products" accounting for 21% of imports include a wide range of products, and most notably railway and tramway locomotives, rolling stock and parts thereof (US\$32 million in 2018), which are designated under the

PPPFA. The procurement of the locomotives was meant to have significant impact on the local economy in terms of supplier development, and has been an area of interest for the government following issues of state-capture. As such, decisions by EU companies to export and invest will be affected by South Africa's efforts to localise production through government procurement.

APPENDIX 2 REIP4 TENDER PROCESS

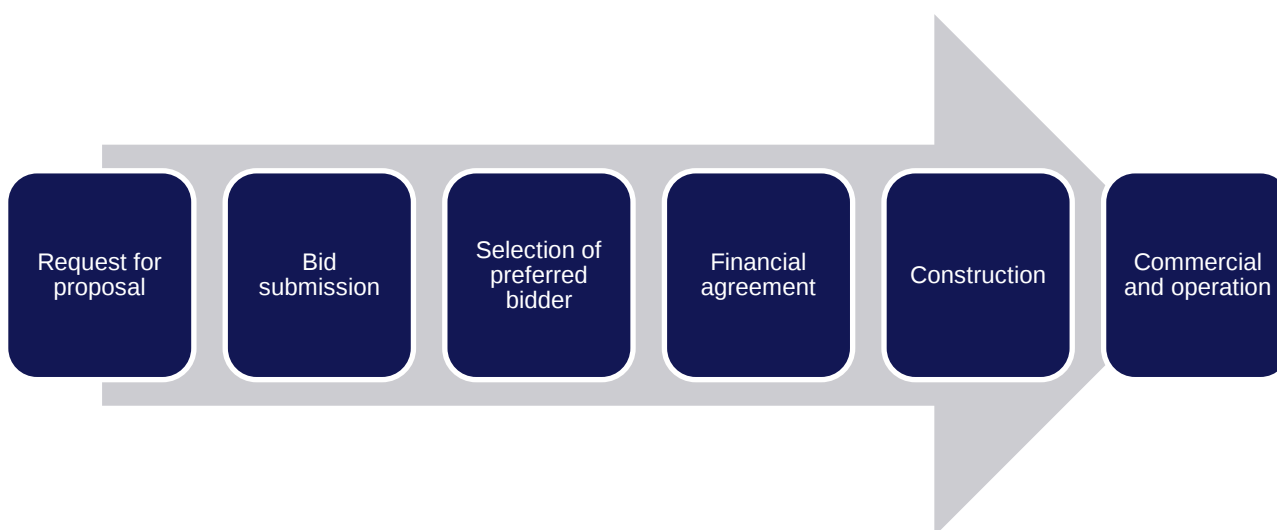
Whereas international practice has procured private energy generation through feed-in tariffs, the REIP4 was designed as a multiple single, closed-bid tender that allows independent power producers (IPPs) to go through a competitive tendering process through a series of bid windows. Renewable Energy auctions are increasingly becoming popular in ramping up RE sources, as well as ensuring greater participation among rural communities, smaller companies, new players and maximising the benefits of RE associated with socio-economic objective (IRENA, 2014).

The annual determined megawatts are procured through the bid windows, and the DOE committed to releasing at least once per annum or each subsequent year since 2011 (Eberhard, Kolker, & Leigland, 2014). Ministerial determinations are the first step in the process of procurement of new electricity generation capacity in SA. The ministerial determinations provide the IPP Office with the energy capacity information required to advertise the Request for Proposal, by technology in line with the National Energy Act and the Electricity Regulation Act

Management of the tender process

The IPP Office was established by the DOE, National Treasury, and the Development Bank of Southern Africa (DBSA) to deliver on the IPPPP programme, which includes managing energy procurement. The bid submission involves 6 stages, from submitting documentation at the Request for Proposal (RFP) stage to awarding of the bid to the preferred party **Error! Reference source not found..**

Figure A. 3: The REIP4 bidding process



Source: (IPP Office, 2014)

The requirements for being awarded an IPP project are articulated by the IPP Office through the RFP documentation. The IPP Office informs the potential bidders of the maximum capacity available for tender, maximum energy price (R/kWh) to ensure that tariffs are within acceptable limits and a schedule for the deadlines for each stage. Tenders are submitted based on the evaluation criteria, which include:

- Structure of the Project
- Legal Criteria and Evaluation
- Land acquisition and land-use
- Environmental Consent Criteria and Evaluation

- Financial Criterial and Evaluation
- Technical Criterial and Evaluation
- Economic development Criterial and Evaluation,
- Value for money
- Returning Compliant Bidders.

Bidders that are compliant and exhibit suitable experience, commitment, and resources progress to the evaluation stage. The tenders are then evaluated on the Price and Economic Development scoring criteria on a **comparative basis**, per technology. During the evaluation, price receives weight of 70% and Economic Development receive 30% (this weighting can be updated each bid window). Under Economic Development, local content accounts for 25%, which is equivalent to an effective 8% for the total project bid **Error! Reference source not found.**

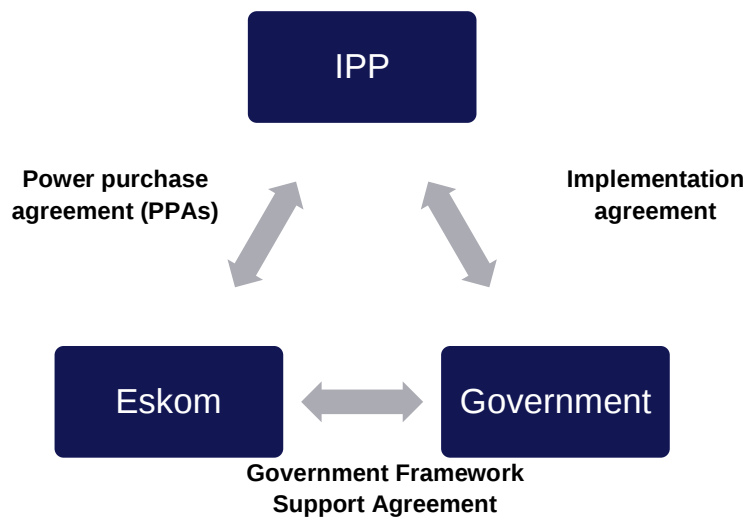
Table 13: REIPPPP Economic Development Elements and effective contribution*

Element	Minimum threshold	Maximum target	Weight	Effective %
8. Job creation	12%-15%	20%-80%	25%	8%
9. Local content	40%-45%	65%	25%	8%
10. Ownership	B-BBEE: 12% of project shareholding Local Community: 2.5% of project shareholding	B-BBEE: 30% of project shareholding Local Community: 5% of project shareholding	15%	5%
11. Management Control	0%	40%	5%	2%
12. Preferential procurement	B-BBEE: 0% QSE & EME: 0% Women-owned: 0%	B-BBEE: 60% QSE & EME: 10% Women-owned: 5%	10%	3%
13. Enterprise development	0%	0.6% of project revenue	5%	2%
14. Socio-economic development	1% of project revenue	1.5% of project revenue	15%	5%
			100%	30%
<i>Source: (IPP Office, 2014). *The effective % based on author's calculation.</i>				

The IPP Office's review team assesses the bidders across 6 consolidated streams: Legal Environment, Legal Land, Legal Commercial, Economic Development, Financial and Technical aspects. The preferred bidders are then submitted as to the DOE's Adjudication Committee which selects and appoints the preferred bidder. The DOE's evaluation consultants include international reviewers, project management consultants, legal evaluators (e.g. ENSAfrica and Bowman Gilfillan), Technical Evaluators and Financial Evaluators (e.g. PWC and Ernest & Young).

The preferred bidder requires four approvals in order to commence construction (see process summarised in Appendix X): (i) approval from Minister of Finance to bind the National Revenue Fund; (ii) the Government Support Framework Agreement (GSFA) in support of Eskom, signed by the Minister of Finance, Minister of Public Enterprises, Minister of Energy and Eskom; (iii) the letter from NERSA to Eskom confirming that bid windows / projects will be covered under the multi – year price determination (MYPD) methodology or Cost Recovery Mechanism; and (iv) the Eskom Board Approval for bid windows / projects and which Eskom confirms through a letter to Minister of Energy. In summary, the parties in the contractual agreement include the IPP, Eskom and Government as illustrated in the figure below.

Figure A. 4: IPP Contractual Structure



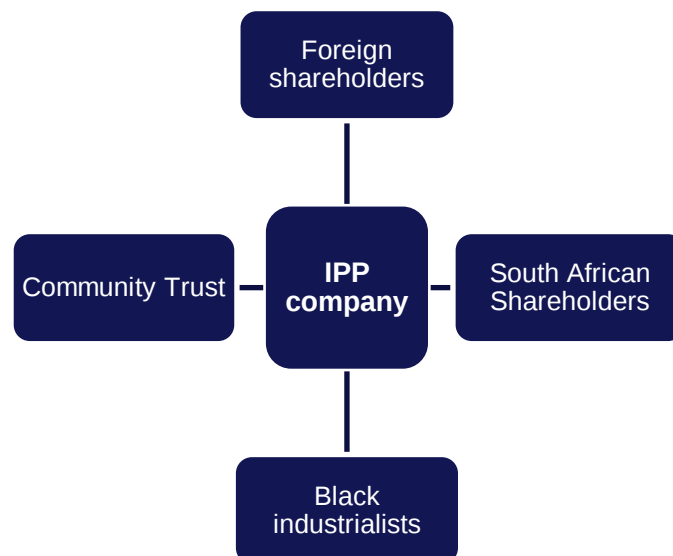
Source: (National Treasury, 2019)

Structure of the IPPs

Each IPP Company submits competitive bids to design, develop and operate renewable energy power plants across the country. The IPP company structure is made up of 4 players: foreign shareholders, local shareholders, black industrialists, and a community trust. By design, the IPP structure achieves B-BBEE compliance through the participation of local players, exempting the foreign investors from B-BBEE regulations. However, 40% of IPPs should be owned by South African entities contributing at least Level 5 B-BBEE status.

IPP's may also be privately held facilities, such as rural solar or wind energy producers, and non-energy industrial concerns generating electric power for on-site use and who may also be capable of feeding excess energy into the distribution or transmission grid system.

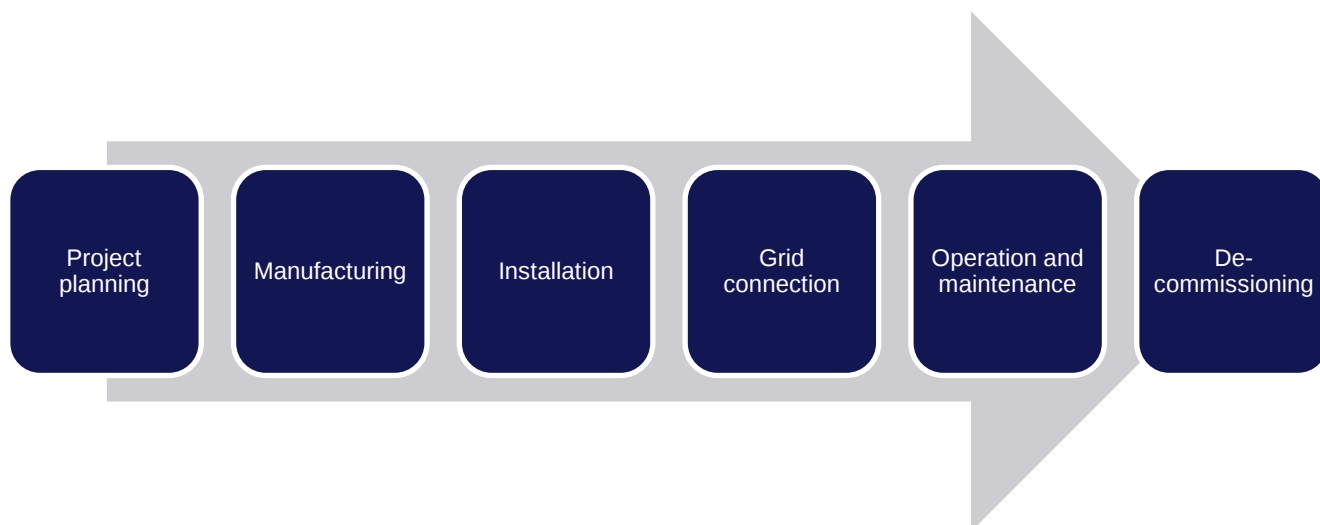
Figure A. 5: Independent Power Producer Company Structure



Source: (IPP Office, 2014)

The IPP company subcontracts project developers to implements the projects from development to de-commissioning. The IPP owns and/or operates facilities to generate electric power for sale to a utility, central government buyer and end users.

Figure A. 6: Renewable energy value chain



Source: (IRENA, 2014)

Engineering, procurement, and construction (EPC) companies are responsible for managing the various sub-contracts in the construction phase of a project and may also be involved in the design and development phase of the project. The OEMs possess significant distribution and service networks and manufacture machinery and equipment supplied to the IPP or EPC. OEMs source various components and parts e.g. engines, alternators and components from local manufacturers and international manufacturers through importers and distributors.

The IPP structure places the risk and the costs of RE projects on the IPP Company. As such, the IPP provides all the funding requirements from construction to operation through debt (mostly) and equity. This means that any delays and cost overruns are on the IPP's balance sheet. Furthermore, the IPP commits upfront to meet the targets related to economic development, including job creation, socio-economic development, and local content.

The IPP Office plays the critical role in ensuring that the local content commitments are adhered to, and fulfilled through the monitoring and evaluation of the Implementation Agreement. The monitoring and evaluation function of the IPP Office allows the office to collect information on a regular basis, and track performance against commitments.