THE CRITICALITY OF A HOLISTIC JUST ENERGY TRANSITION PLAN IN SOUTH AFRICA

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1 INTRODUCTION AND BACKGROUND

Energy security remains a concern for the South African economy. This holds true for South Africa's economic powerhouse given that at 34% [1], Gauteng is the biggest contributor to the country's GDP relative to other provinces, and it is ranked Africa's 7th biggest economy [2]. National electricity shortages and the implementation of load shedding in 2008 motivated Gauteng Provincial Government (GPG) to initiate a strategic planning process to address provincial energy risks. Gauteng has since developed the Gauteng Integrated Energy Plan in 2008, the Gauteng Integrated Energy Strategy (GIES) in 2010 and the Gauteng Energy Security Strategy (GESS) in 2016, as part of managing provincial energy security and to address provincial energy risks. To this effect, the 5th GPG administration identified energy security as one of its 8 game changers that can fast-track economic growth, which was also adopted by the 6th administration.

The GESS vision is to have "A resilient and energy secure province that invests in diversified low-carbon energy sources and innovative technologies, that delivers reliable and affordable energy services to all citizens and contributes to an economically transformed and modernized and re-industrialized Gauteng City Region" [3]. Gauteng province has undertaken to create an enabling environment to achieve this energy vision and GESS identified six enablers that will assist in making Gauteng an energy secure province with a sustainable energy system.

Although South Africa is still largely dominated by coal-based electricity, with more than 85% generated from coal, a global trend towards environmental concerns and the impact on climate change has resulted in a move to transition the energy sector. With the massive global investment in renewable energy over recent years, the substantial impact on driving down the costs of these technologies has placed RE at the centre of this transition. However, utilities and governments alike need to ensure the transition is just and no one is left behind.

Energy efficiency (EE) and renewable energy (RE) are fundamental to sustainable urban development and the transition of the energy sector to combat the impact of greenhouse gases (GHG) on climate change. With the massive global investment in renewable energy over recent years, the substantial impact on driving down the costs of these technologies has placed RE at the centre of the transition in the energy sector.

The compilation of the State of Energy Outlook Study primarily addresses the GESS "information and knowledge dissemination" enablers but also gives effect to the "provision of guidance by government" and "knowledge development and capacity building" enablers. Furthermore, as one of the key interventions for Gauteng province to achieve the energy vision as outlined in the GESS, the State of Energy Outlook Study focuses on understanding the energy landscape in the province, and renewable energy and energy efficiency projects, much in line with the global energy transition. The study and project covered the 9 Gauteng Province municipalities.

2 GAUTENG ENERGY OUTLOOK

2.1 Gauteng Baseline Energy

It is critical to understand the holistic energy landscape to better plan for the just energy transition. The Gauteng province energy supply is dominated by electricity which constitutes 40%, followed by diesel with 23% and petrol with 18%, that is a total of 81%. The rest of the supply, i.e., Jet Fuel, Aviation Gasoline, Paraffin, Furnace Oil, LPG, LNG, coal, and wood, constitute for the remaining 19% of the energy supply in Gauteng province. The split within each local municipality (LM) largely follows the same trend, with exception of Lesedi LM, Merafong City LM (MeCLM) and Rand West City LM (RWCLM) where electricity constitutes 6%, 94% and 89%, respectively.

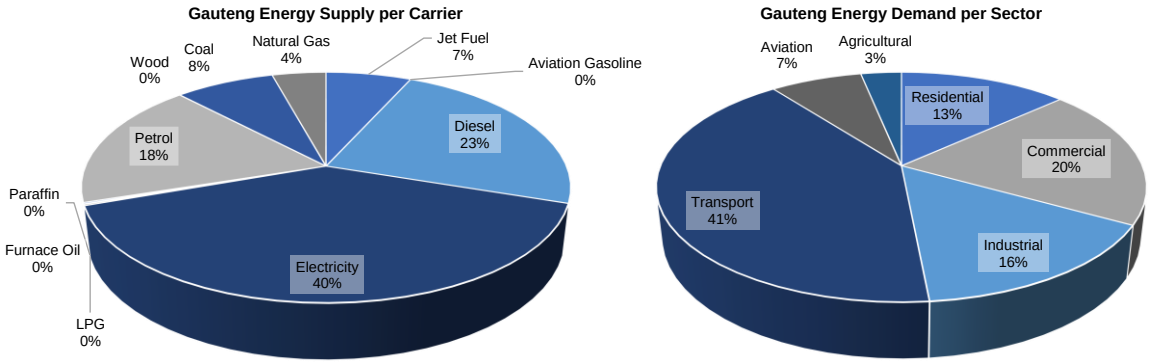


Figure 1: GP Energy Supply by Carrier and Demand by Sector

Electricity in Gauteng province is split between Eskom and Municipal areas, which is generally the case throughout municipalities in South Africa. A significant portion of the Gauteng province is supplied by Eskom. However, the municipal areas of supply are more built-up than the Eskom areas of supply. Hence the municipalities have a bigger share of the electricity supply.

Overall, the three Metros, City of Ekurhuleni (CoE), City of Johannesburg (CoJ) and City of Tshwane (CoT) make up two-third (67%) of Gauteng's Electrical Demand, each contributing 24%, 27% and 16%, respectively. However, considering only the municipal areas of supply, the three Metros make up 91% of the electrical demand, each contributing 32%, 33% and 26%, respectively.

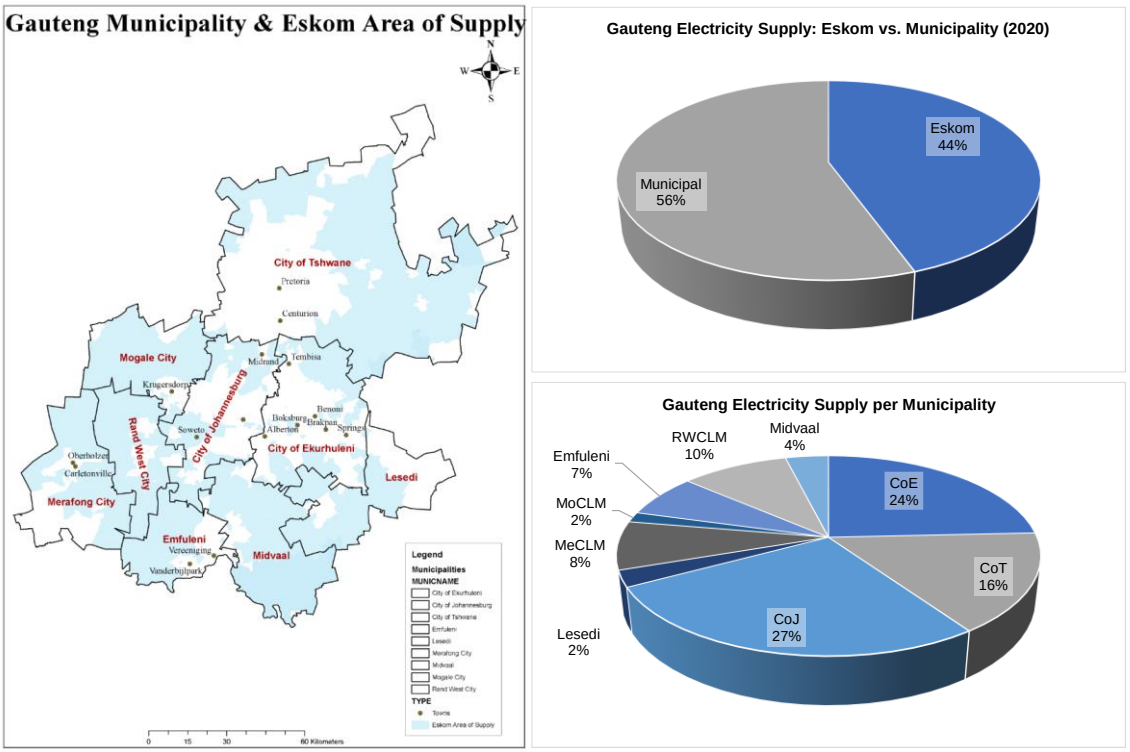


Figure 2: GP Electricity Supply – Municipality vs. Eskom

Gauteng province electricity demand constitutes 35% of South Africa's demand and it is the densest relative to all other regions in Sub-Sahara Africa. Gauteng's peak Demand in 2020 was about 13,000 MVA versus about 14,000 MVA for the SADC's (excluding RSA) peak demand. Moreover, the peak demands of the three Metros in Gauteng are comparable to some of the neighbouring countries peak demands.

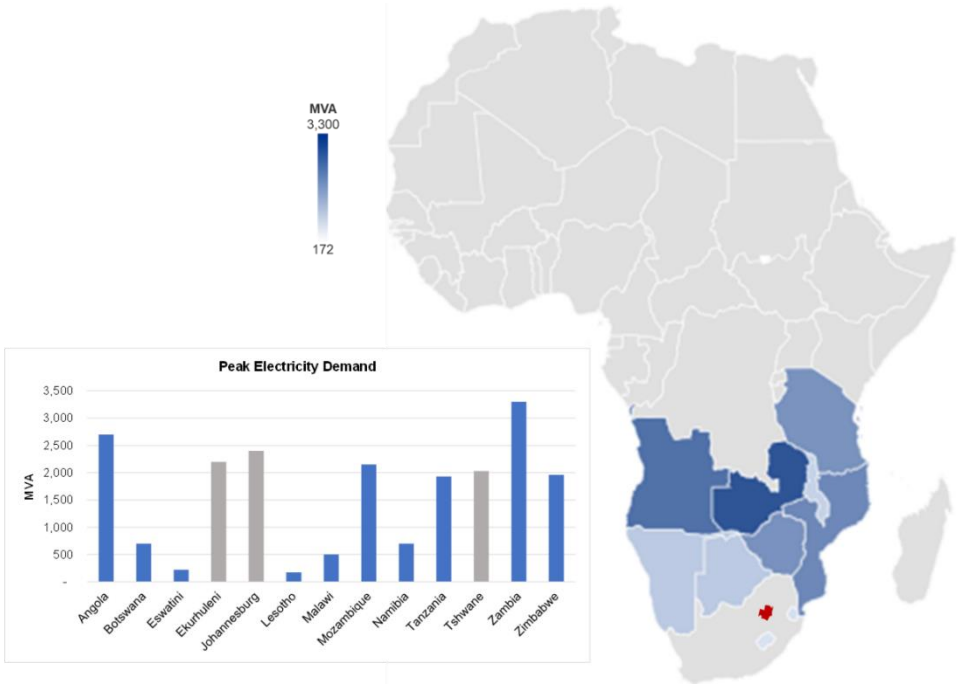


Figure 3: GP Metros Peak Demands vs. SADC Countries

The liquid fuels supply in Gauteng province are dominated by diesel and petrol, respectively, contributing 45% and 40%. The sector with the dominant energy demand is transport sector contributing 57% of the overall energy consumption in the province. The rest of the demand is shared amongst commercial, residential, industrial, aviation and agricultural sectors contributing 6%, 1%, 21%, 11% and 5%, respectively.

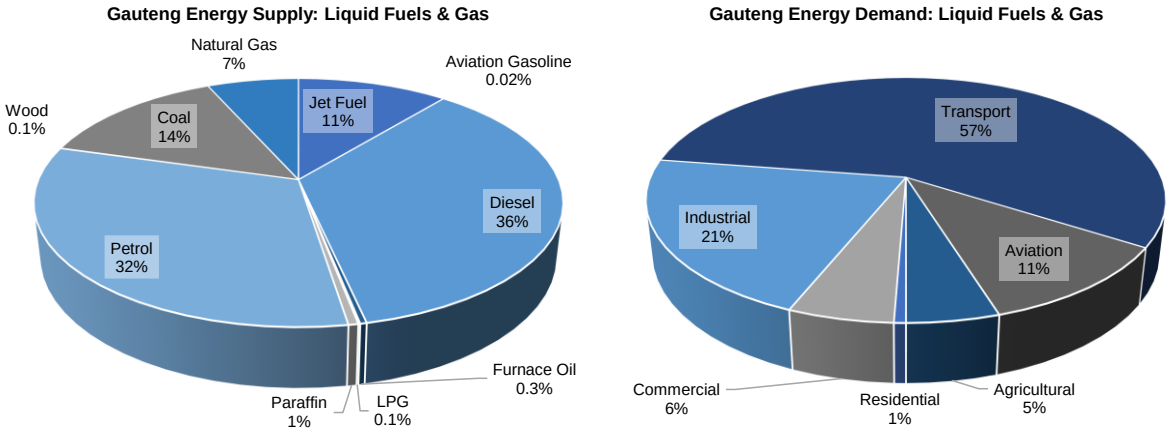
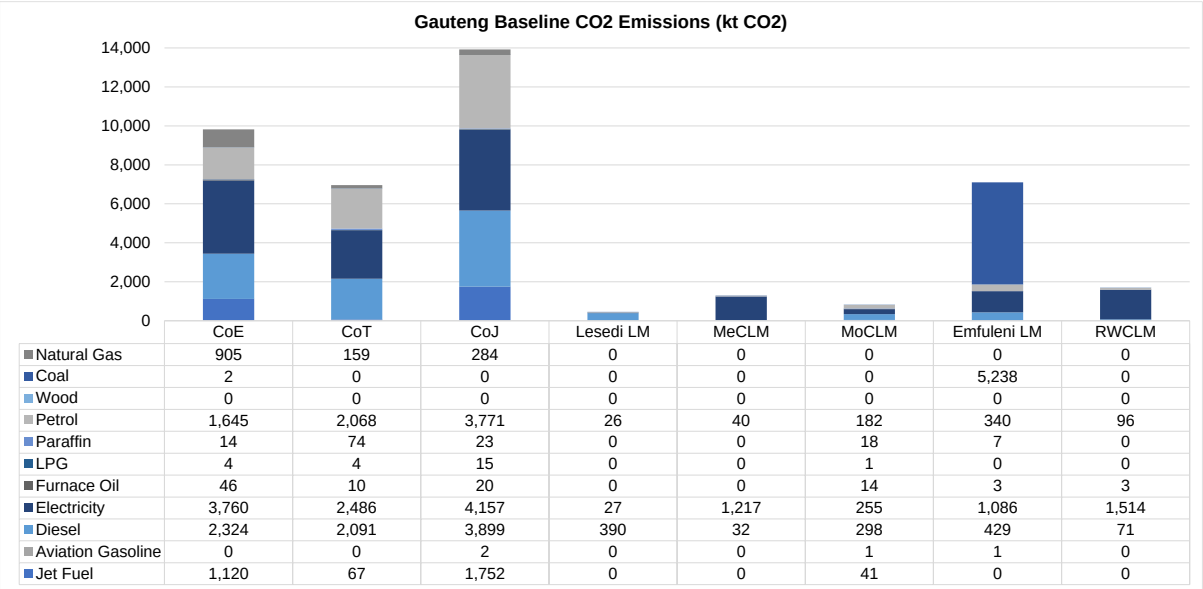


Figure 4: GP Liquid Fuels & Gas Supply and Demand

The conventional method of quantifying the Greenhouse Gases (GHG) applied for this study was the determination of the Carbon Dioxide Equivalent (CO_{2e}) values, that accounts for the Global Warming Potential (GWP) of each emission and converts theses into a common carbon dioxide equivalent denominator.

The Intergovernmental Panel on Climate Change (IPCC) emission factors associated with each energy carrier were applied for consistency of the analysis. The CO_{2e} emissions show the three metros (City of Johannesburg, City of Ekurhuleni, and City of Tshwane) and Emfuleni municipality to have the greatest contribution to the emissions. The Emfuleni municipality also has a significant GHG emissions

impact, due to the highly industrial nature of the municipality, specifically the steel making industry within the municipality.



	CoE	CoT	CoJ	Lesedi LM	MeCLM	MoCLM	Emfuleni LM	RWCLM
Natural Gas	905	159	284	0	0	0	0	0
Coal	2	0	0	0	0	0	5,238	0
Wood	0	0	0	0	0	0	0	0
Petrol	1,645	2,068	3,771	26	40	182	340	96
Paraffin	14	74	23	0	0	18	7	0
LPG	4	4	15	0	0	1	0	0
Furnace Oil	46	10	20	0	0	14	3	3
Electricity	3,760	2,486	4,157	27	1,217	255	1,086	1,514
Diesel	2,324	2,091	3,899	390	32	298	429	71
Aviation Gasoline	0	0	2	0	0	1	1	0
Jet Fuel	1,120	67	1,752	0	0	41	0	0

Figure 5: GP Baseline CO_2 Emissions

This has thus far been an overview of the baseline for Gauteng. However, the study provides the state of energy in Gauteng province through a high-level projection for energy demand and supply over a 5-year period.

2.2 Key Drivers Impacting Future Energy Demand

Gauteng is a highly urbanized province in South Africa. The province contributed to more than a third of the country's GDP in 2017. The Gauteng City Region acts as not only an economical and financial hub, but as a network of connectivity within itself while acting as a gateway to the surrounding provinces.

It is therefore a place of opportunity for many. This is proven through the population statistics for the province. The province has the highest percentage of total population in the country [4] despite being the smallest province in terms of land area. The province has also seen the highest total of migrants into the province between 2016-2020. All of these statistics make Gauteng a prime candidate for creating smart city projects to help cater for this ever-growing population.

To this end the province has developed itself as a City-Region and is still emerging to be one of the largest mega-cities in the continent. To facilitate development in a structured and coordinated manner, the province has developed plans and strategies that inform change and growth. These are:

- Gauteng Spatial Development Framework, 2030;
- Gauteng Spatial Perspective, 2030;
- Gauteng Integrated Transport Master Plan, 2013;
- The Development of an Industrial Policy for Gauteng Province, Draft 2010;
- Gauteng Growth Management Perspective, 2014;
- Five developmental corridors of Gauteng;
- The Mega Cities.

Additionally, technologies such as Green Hydrogen, Electric Mobility and Small-Scale Embedded Generation (SSEG) are considered on how they impact the demand of some of the energy sources.

2.3 Demand and Energy Forecast

Electricity is expected to continue to be the biggest contributor to Gauteng's future energy outlook. A spatial electricity demand forecast was developed. The demand forecast is deterministic in nature and was performed within the PowerGLF application, which is a spatially based application where the

existing and predicted future load areas are zoned. The predicted future load areas are informed by the strategies outlined above, such as the Gauteng Spatial Development Framework (GSDF).

The electricity forecast data was received from the Network Planning department of the Gauteng Operating Unit (GOU) of Eskom Distribution Division. For each network supply point, a split between Eskom and Municipal demand was also provided for each municipal area. This was subsequently reconciled with data received from some of the municipalities.

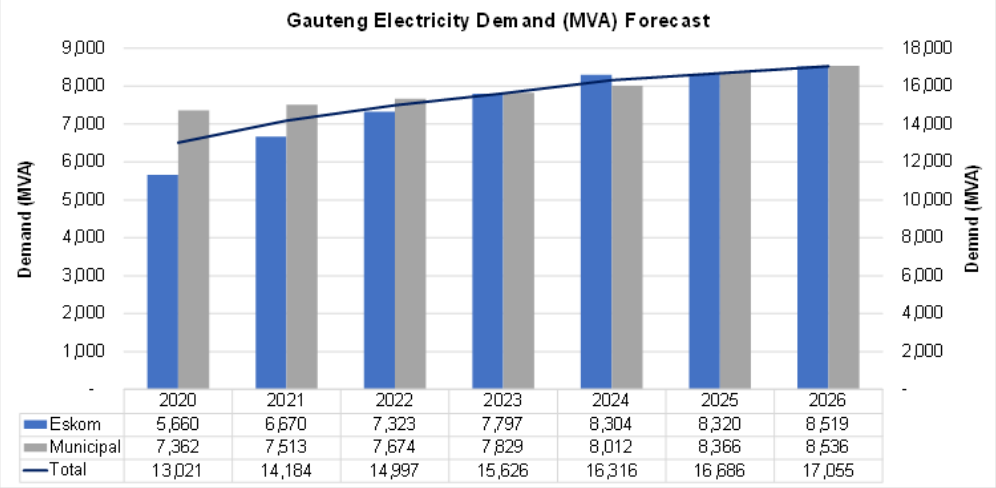


Figure 6: GP Electricity Demand [MVA] Forecast

Similarly, the associated electrical energy forecast was received from Energy Trading department of the Gauteng Operating Unit (GOU) of Eskom Distribution Division. The electrical energy is forecasted to grow at a higher rate for Eskom's areas of supply than for the municipalities. This is largely because municipal areas of supply have reached saturation, and there is limited land available for future developments. For year 2025, the electricity supply is split almost evenly between Eskom and Municipalities, at 51% and 49%; respectively, compared to the 44% and 56% split in 2020.

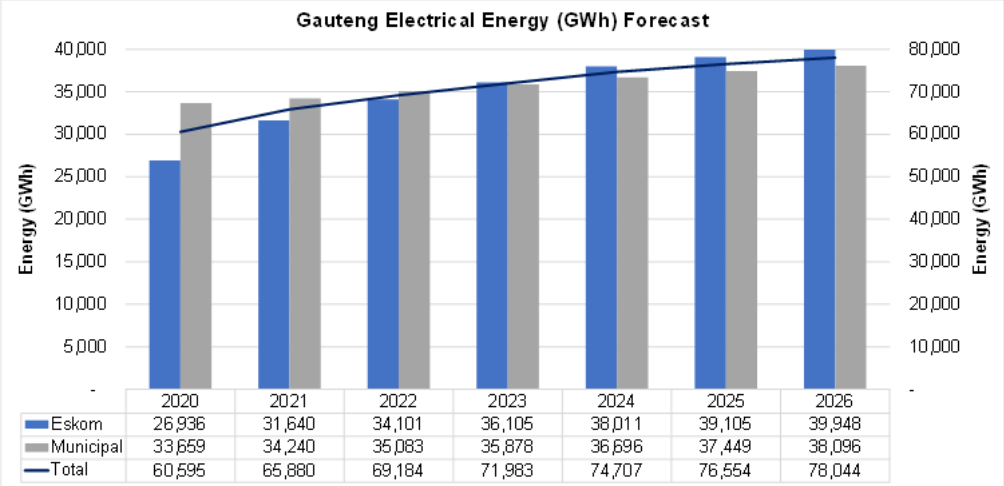
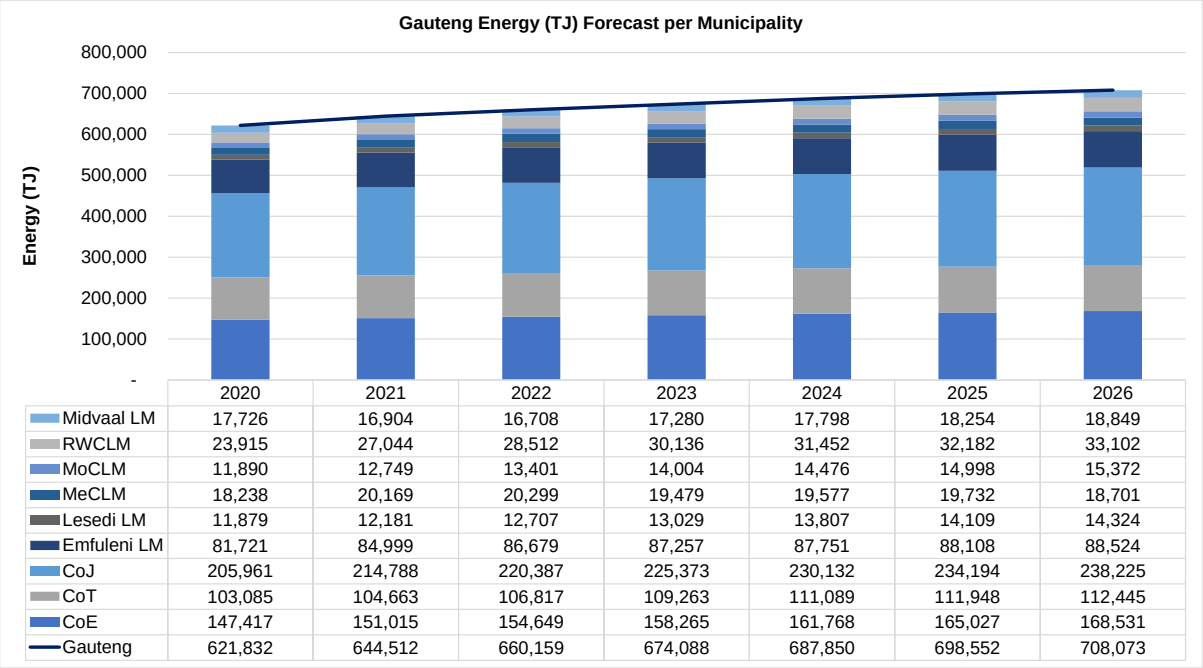


Figure 7: GP Electricity Energy [GWh] Forecast

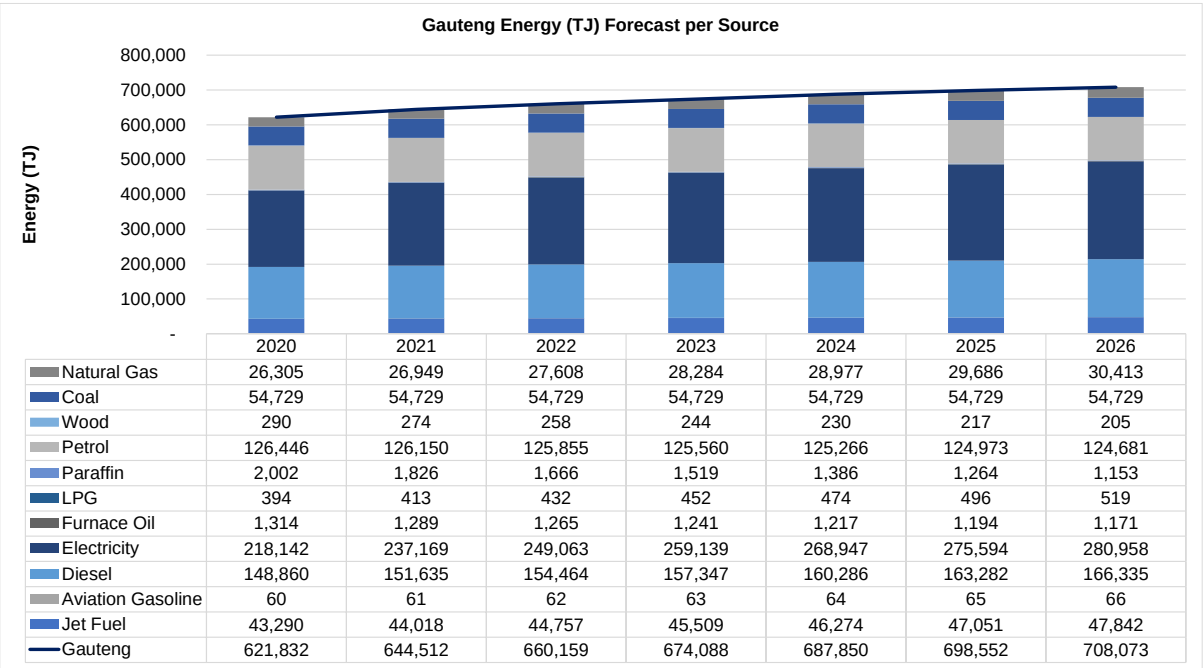
Overall, the Gauteng energy is envisaged to grow from 657,000 TJ to 740,000 TJ in 2025. The three metros, CoJ, CoE, and CoT, and Emfuleni LM contribute to 87% of the overall energy. CoJ remains the highest overall consumer, followed by the CoE, Emfuleni LM and CoT, respectively. The rest of the local municipalities contribute less than 5% each.



	2020	2021	2022	2023	2024	2025	2026
Midvaal LM	17,726	16,904	16,708	17,280	17,798	18,254	18,849
RWCLM	23,915	27,044	28,512	30,136	31,452	32,182	33,102
MoCLM	11,890	12,749	13,401	14,004	14,476	14,998	15,372
MeCLM	18,238	20,169	20,299	19,479	19,577	19,732	18,701
Lesedi LM	11,879	12,181	12,707	13,029	13,807	14,109	14,324
Emfuleni LM	81,721	84,999	86,679	87,257	87,751	88,108	88,524
CoJ	205,961	214,788	220,387	225,373	230,132	234,194	238,225
CoT	103,085	104,663	106,817	109,263	111,089	111,948	112,445
CoE	147,417	151,015	154,649	158,265	161,768	165,027	168,531
Gauteng	621,832	644,512	660,159	674,088	687,850	698,552	708,073

Figure 8: GP Energy [TJ] Forecast

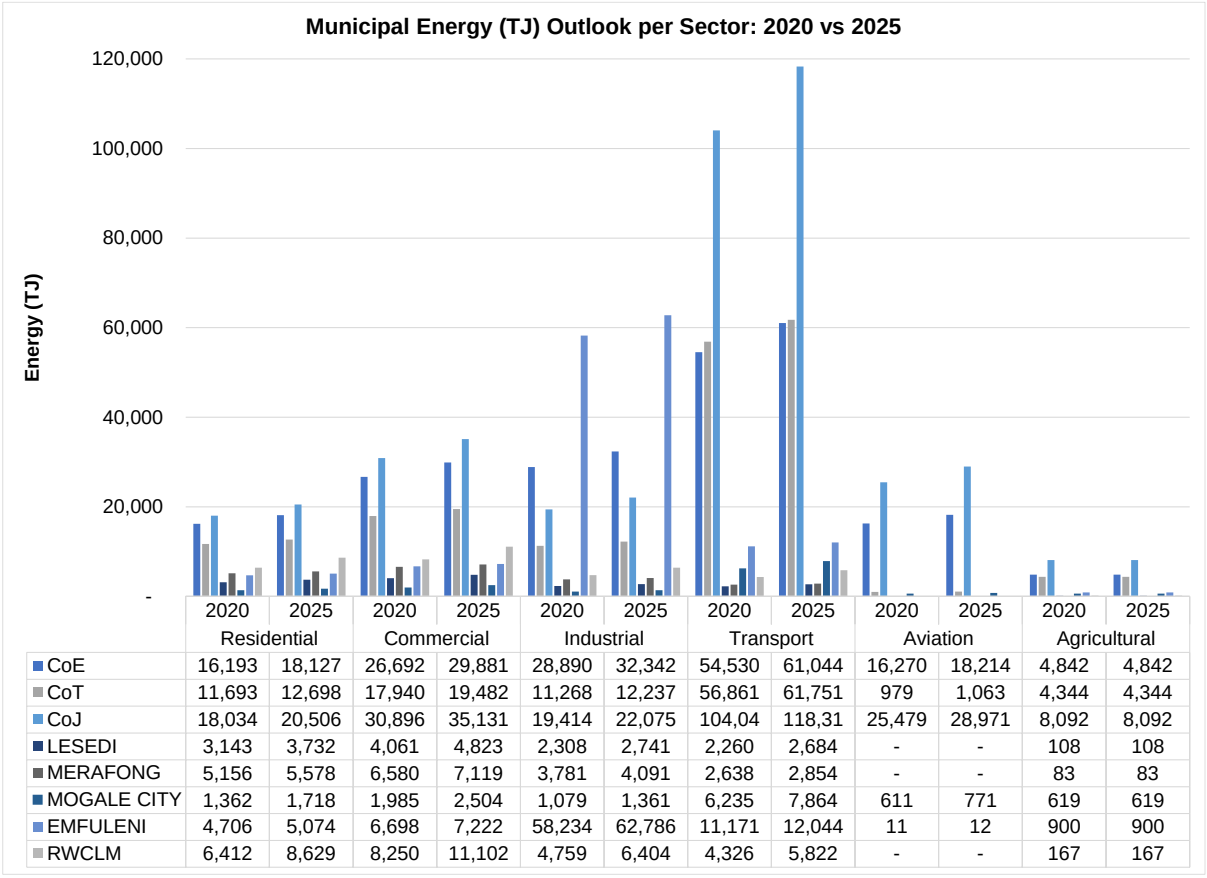
The details of the overall energy forecast were developed with a bottom-up approach from the various energy sources. The demand for wood, paraffin, petrol, and furnace oil is forecasted to reduce. This is expected as wood and paraffin are replaced by an uptake of LPG as well as increased household electrification.



	2020	2021	2022	2023	2024	2025	2026
Natural Gas	26,305	26,949	27,608	28,284	28,977	29,686	30,413
Coal	54,729	54,729	54,729	54,729	54,729	54,729	54,729
Wood	290	274	258	244	230	217	205
Petrol	126,446	126,150	125,855	125,560	125,266	124,973	124,681
Paraffin	2,002	1,826	1,666	1,519	1,386	1,264	1,153
LPG	394	413	432	452	474	496	519
Furnace Oil	1,314	1,289	1,265	1,241	1,217	1,194	1,171
Electricity	218,142	237,169	249,063	259,139	268,947	275,594	280,958
Diesel	148,860	151,635	154,464	157,347	160,286	163,282	166,335
Aviation Gasoline	60	61	62	63	64	65	66
Jet Fuel	43,290	44,018	44,757	45,509	46,274	47,051	47,842
Gauteng	621,832	644,512	660,159	674,088	687,850	698,552	708,073

Figure 9: GP Energy [TJ] Forecast per Source

Comparing the dominant energy consumption sectors per municipality for year 2020 base line and year 2025, it is evident that the CoJ has the biggest share energy usage, and the transport sector remains the most energy intense sector. This can be attributed to population growth, economic activities and mainly the people from neighbouring municipalities commuting in and out of CoJ for economic activities. The second observation, however counterintuitive, is in the industrial sector where Emfuleni LM has the highest energy usage than other municipalities. However, this is attributed to the coal usage at ArcelorMittal. Apart from that, the CoE has a significant share of the industrial demand, as expected.



	2020	2025	2020	2025	2020	2025	2020	2025	2020	2025	2020	2025
	Residential		Commercial		Industrial		Transport		Aviation		Agricultural	
CoE	16,193	18,127	26,692	29,881	28,890	32,342	54,530	61,044	16,270	18,214	4,842	4,842
CoT	11,693	12,698	17,940	19,482	11,268	12,237	56,861	61,751	979	1,063	4,344	4,344
CoJ	18,034	20,506	30,896	35,131	19,414	22,075	104,04	118,31	25,479	28,971	8,092	8,092
LESEDI	3,143	3,732	4,061	4,823	2,308	2,741	2,260	2,684	-	-	108	108
MERAFONG	5,156	5,578	6,580	7,119	3,781	4,091	2,638	2,854	-	-	83	83
MOGALE CITY	1,362	1,718	1,985	2,504	1,079	1,361	6,235	7,864	611	771	619	619
EMFULENI	4,706	5,074	6,698	7,222	58,234	62,786	11,171	12,044	11	12	900	900
RWCLM	6,412	8,629	8,250	11,102	4,759	6,404	4,326	5,822	-	-	167	167

Figure 10: GP Municipal Energy [TJ] Outlook per Sector: 2020 vs. 2025

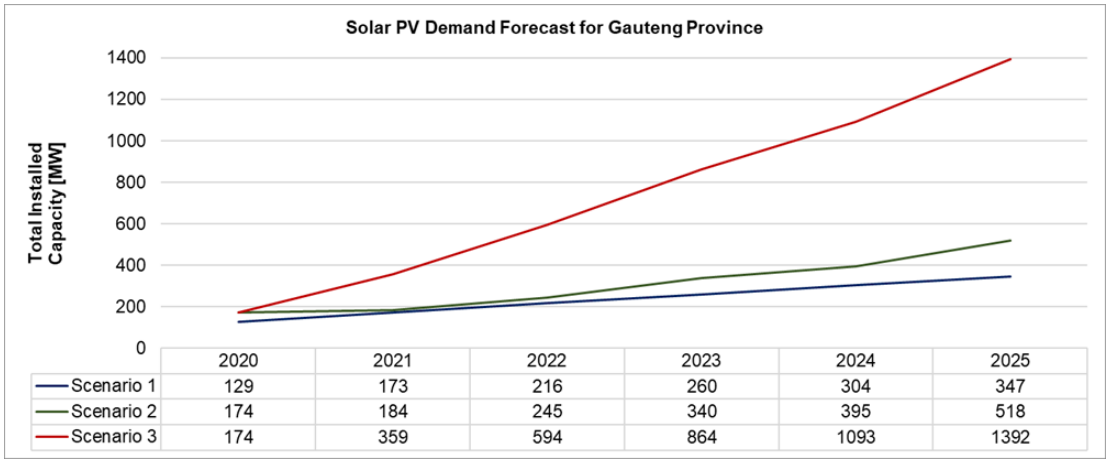
3 GAUTENG RENEWABLE ENERGY AND ENERGY EFFICIENCY PROJECTS AND OPPORTUNITIES

Although the overall study considered aspects of electric mobility and green hydrogen, amongst other things, a greater emphasis was placed on RE and EE as it relates to electricity and how municipalities could procure directly from IPPs.

Gauteng, contributing about 44% of the installations, has the highest installed capacity of renewable energy distributed generation amongst the provinces in South Africa. Reports such as “Empowering cities with data- Practicalities of climate data management in cities-June 2021” (which was a study based in Johannesburg) suggest that the installed capacity might even be higher than what is currently reported as most installations are not registered with the municipality [4].

SAPVIA has recommended a 100 MW p.a. Solar PV penetration for South Africa. This is based on the growth of installations and the declining price of Solar PVs [5]. The draft IRP suggested a maximum penetration of Solar PV of 500 MW p.a. (As opposed to the final gazetted IRP proposing ~ 1,000 MW p.a.). The 500 MW was also used by SAPVIA for Solar PV Job forecasting for South Africa [6]. It is assumed that Gauteng would continue contributing 44% of the future installed capacity in the short-medium term. Furthermore, considering the future projects planned by CoJ (City Power), the following scenarios are developed to describe the Solar PV Forecast for Gauteng Province:

- **Scenario 1**: 44 % growth from 100 MW p.a. installations (44 MW p.a.)
- **Scenario 2**: 44 % growth from 100 MW p.a. installations (44 MW p.a.) + CoJ Solar PV projects
- **Scenario 3**: 44 % growth from 500 MW p.a. installations (220 MW p.a.) + CoJ Solar PV projects

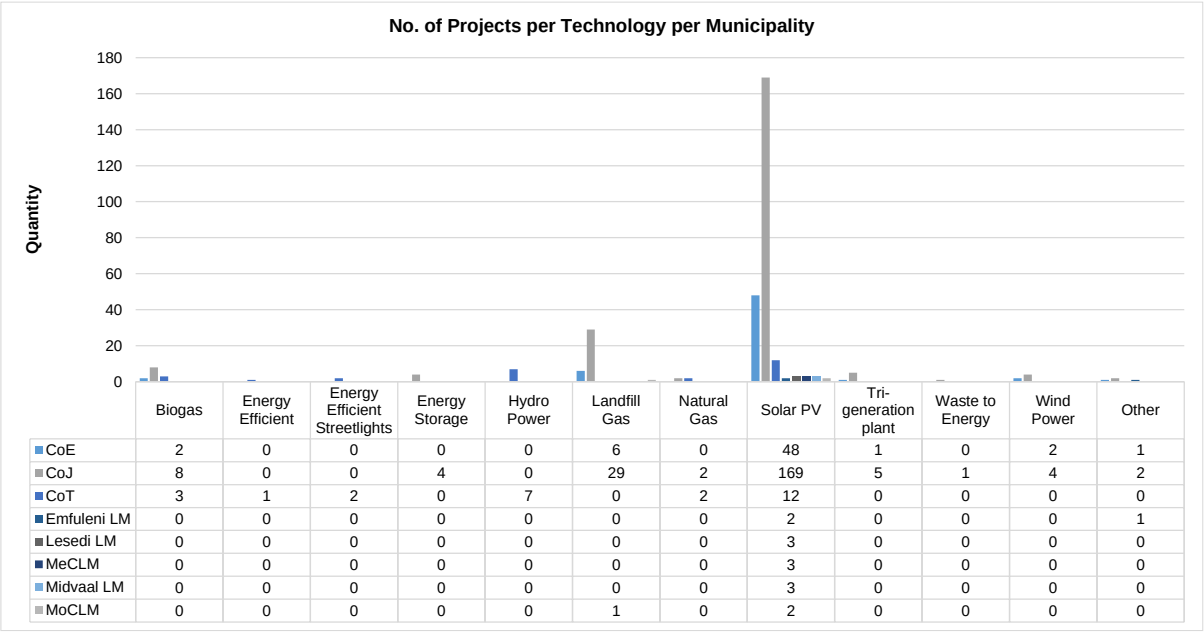


	2020	2021	2022	2023	2024	2025
Scenario 1	129	173	216	260	304	347
Scenario 2	174	184	245	340	395	518
Scenario 3	174	359	594	864	1093	1392

Figure 11: GP Solar PV Forecast

The recent announcement by Department of Mineral Resources and Energy (DMRE) for exemption of License for generation projects below 100 MW will allow most bulk Large Power User (LPU) in the commercial sector to generate their own energy, this will increase the installation growth rate within Gauteng. This makes Scenario 3 more likely than it would otherwise be. This supports Gauteng Integrated Energy Strategy (GIES) which has predicted that by 2025 the province will have 16 % of its energy demand supplied by renewable energy.

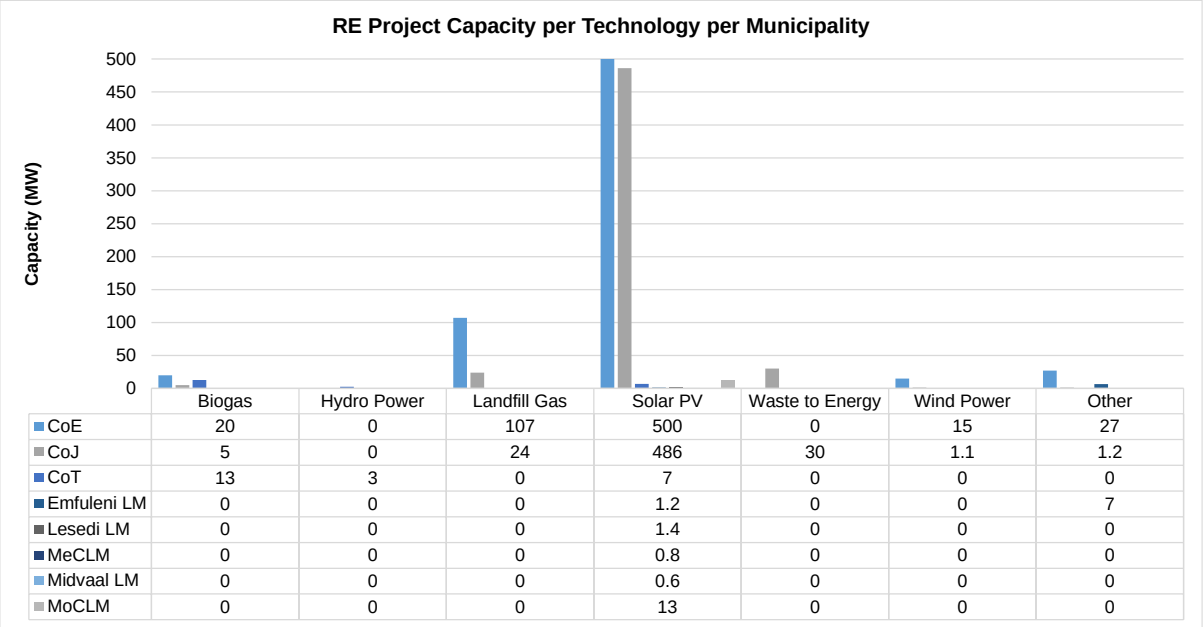
Gauteng currently has at least 328 recorded energy projects at various stages of the project life cycle. However, it is anticipated that the actual number of projects would be significantly greater than the recorded quantities if municipalities diligently trace, track, and document all energy projects within their areas of jurisdiction. Solar PV technology dominates the energy project list in Gauteng as observed throughout South Africa in the form of SSEGs.



	Biogas	Energy Efficient	Energy Efficient Streetlights	Energy Storage	Hydro Power	Landfill Gas	Natural Gas	Solar PV	Tri-generation plant	Waste to Energy	Wind Power	Other
CoE	2	0	0	0	0	6	0	48	1	0	2	1
CoJ	8	0	0	4	0	29	2	169	5	1	4	2
CoT	3	1	2	0	7	0	2	12	0	0	0	0
Emfuleni LM	0	0	0	0	0	0	0	2	0	0	0	1
Lesedi LM	0	0	0	0	0	0	0	3	0	0	0	0
MeCLM	0	0	0	0	0	0	0	3	0	0	0	0
Midvaal LM	0	0	0	0	0	0	0	3	0	0	0	0
MoCLM	0	0	0	0	0	1	0	2	0	0	0	0

Figure 12: GP Energy Projects per Technology

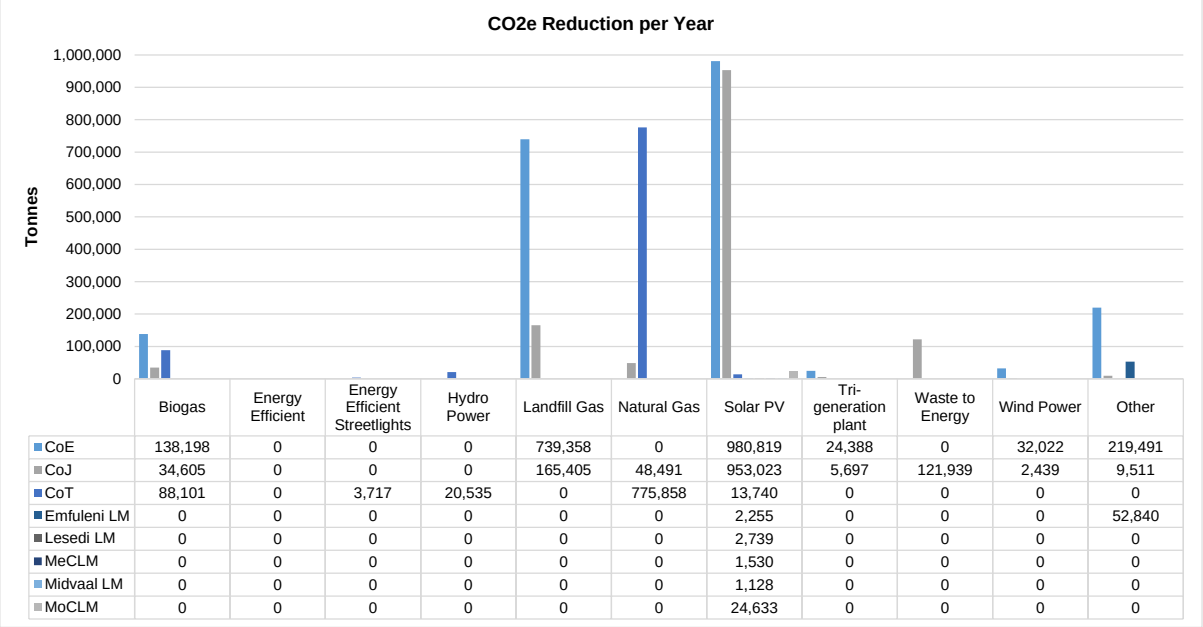
Using the capacity factors, corresponding estimated yearly potential energy generation were calculated per technology. Seasonal capacity factors for Solar PV and Wind Power were used to take into consideration the seasonal weather impact on these technologies.



	Biogas	Hydro Power	Landfill Gas	Solar PV	Waste to Energy	Wind Power	Other
CoE	20	0	107	500	0	15	27
CoJ	5	0	24	486	30	1.1	1.2
CoT	13	3	0	7	0	0	0
Emfuleni LM	0	0	0	1.2	0	0	7
Lesedi LM	0	0	0	1.4	0	0	0
MeCLM	0	0	0	0.8	0	0	0
Midvaal LM	0	0	0	0.6	0	0	0
MoCLM	0	0	0	13	0	0	0

Figure 13: GP RE Project Capacities

The corresponding CO_2 emission reduction in tonnes per annum were also calculated which assumed an emission reduction factor of 0.928 $kgCO_{2e}$ for each kWh avoided from the national grid by using renewable energy sources and taking other energy efficiency initiatives. For natural gas projects, an emission reduction factor of 0.443 $kgCO_{2e}$ for each kWh [7] avoided was applied as calculated from intergovernmental estimates.



	Biogas	Energy Efficient	Energy Efficient Streetlights	Hydro Power	Landfill Gas	Natural Gas	Solar PV	Tri-generation plant	Waste to Energy	Wind Power	Other
CoE	138,198	0	0	0	739,358	0	980,819	24,388	0	32,022	219,491
CoJ	34,605	0	0	0	165,405	48,491	953,023	5,697	121,939	2,439	9,511
CoT	88,101	0	3,717	20,535	0	775,858	13,740	0	0	0	0
Emfuleni LM	0	0	0	0	0	0	2,255	0	0	0	52,840
Lesedi LM	0	0	0	0	0	0	2,739	0	0	0	0
MeCLM	0	0	0	0	0	0	1,530	0	0	0	0
Midvaal LM	0	0	0	0	0	0	1,128	0	0	0	0
MoCLM	0	0	0	0	0	0	24,633	0	0	0	0

Figure 14: GP CO_{2e} Reduction per Year

4 WEB-ENABLED MANAGEMENT SYSTEM

To facilitate “knowledge development”, a web application was developed to record, process, and visualise information about the different renewable energy and energy efficiency projects, and to also allow for collaboration amongst the different stakeholders. The system has a public-facing external website and an internal website.

The external website was developed to serve the public. The public and prospective investors can access the website without the need to register or sign in. Public users will have no editing privileges and will only see fields earmarked for public consumption.

Gauteng COGTA and Municipal users will register and sign-in before accessing the internal application. In addition to displaying detailed project related information, a signed-in user could also be granted data upload, export, editing and reporting privileges.

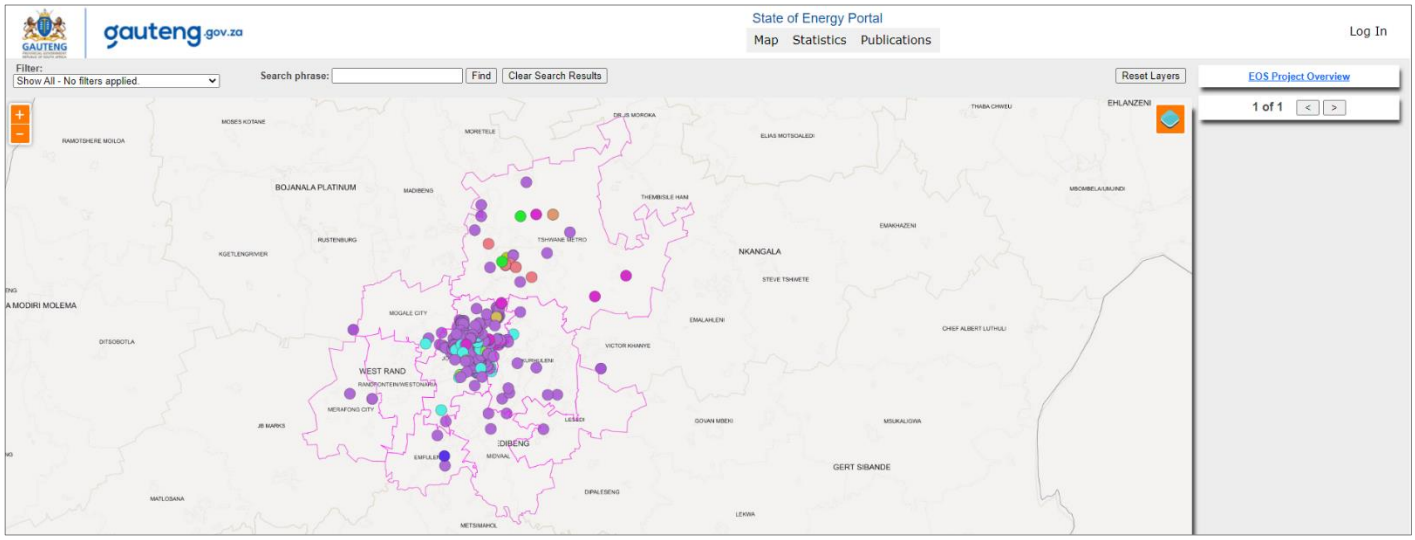


Figure 15: GP RE Projects Web-Enabled System

5 FINANCIAL MODEL AND FUNDING APPROACH

Municipalities in Gauteng have already been approached by potential SSEG (small-scale embedded generation) project and distributed IPP (independent power projects) developers. In some cases, proposals are well developed and comprehensive, but in other cases municipalities receive potentially attractive proposals which are lacking in some respects and for which the commercial case has not been sufficiently explained. It is especially for these underdone proposals that a template financial assessment was developed. The financial model serves as a checklist that all the main variables have been considered, is a tool to bring together the (financial) components of a proposal and assist the municipality to judge the attractiveness of the proposal.

The Municipal Finance Management Act (MFMA) governs the procurement of PPPs (public-private partnerships). It prescribes a specific procedure to evaluate potential PPPs against service provision by the municipality itself (i.e., how to determine “affordability” and assess “value for money”) which should be provided for in the template energy project model.

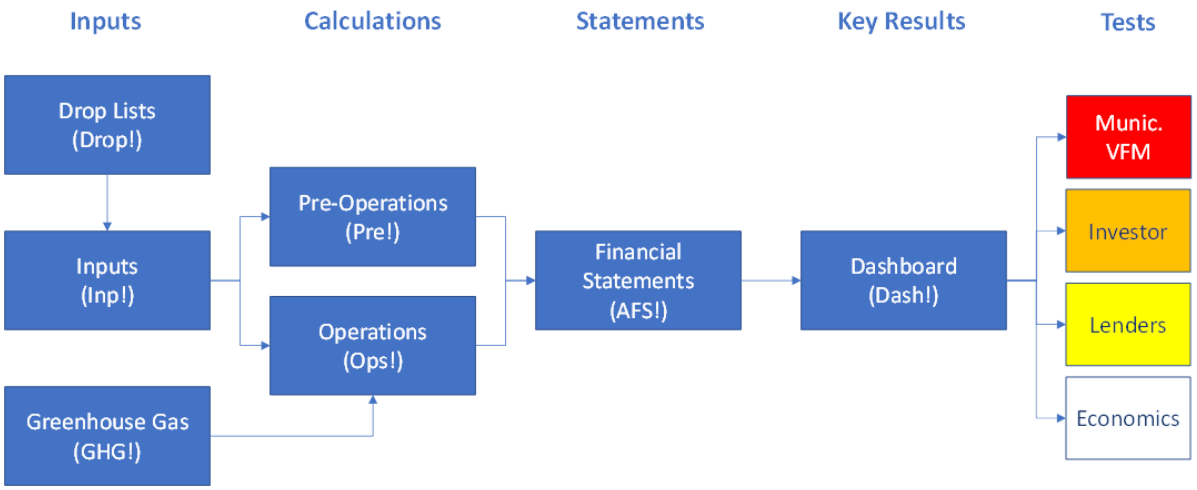


Figure 16: Financial Model Overview

Apart from the financial model itself, we investigated the broader possibilities of supporting the municipalities to procure IPPs. Such support must evidently reflect the legal framework and parameters which apply to municipal-level IPPs.

There are broadly two types of support, i.e., direct project support and “programmatic support”. Direct project support focuses on a specific IPP at a time; however, this approach may not be that useful or effective. The programmatic support is more wide-ranging, and it is anticipated that the PPP approach is likely to become more prevalent at the municipal level, and that arranging these in the form of a PPP programme rather than as individual projects will “commoditise” these contracts and speed up delivery. It is further suggested that the general approach and instruments developed under the Renewable Energy Independent Power Producer Programme (REIPPP) programme provide a useful point of reference for such support.

There are two areas of potential project-specific support, i.e., non-financial and financial support. The possible areas of non-financial encouragement could include Connection and Enabling Agreement; Contribution/s in Kind, and Support Agreement. These could range from facilitating IPP connection to municipality distribution network, providing land/rooftops, off-taker guarantee agreement, etc. Although these types of support do not entail outright, direct financial transfers, they still have “value”.

There could also be monetary transfers proper in support of the IPP. These could be up-front (when the project is being developed) or during the operation of the project. On an ongoing basis Government could avail Tax reductions, exemptions, or accelerations**,** Operating Subsidy, and Tariff Support. All these forms of financial assistance to an IPP would also be considered in the calculation of the project Value-for-money (VFM).

However, Government would be somewhat reluctant to provide direct fiscal transfers or other financial support to municipal IPPs. Furthermore, it has already been demonstrated that there is much interest in private power generation without these types of support being available or being required by developers. Also, there are a variety of non-government financing facilities that can be tapped for concessionary financing or low-cost equity participation.

On the other hand, the concept of programmatic support is to create an environment for municipal IPPs in general to prosper rather than assisting a project on its specific merits. The municipal IPP is decidedly required to be procured as a PPP, following the procedure as set out in the MFMA. However, this is an intense and complex process. For starters, the Municipal Service Delivery and PPP Guidelines – the PPP “manual” for municipalities – is a document of 501 pages. It requires substantial understanding and experience by the municipality (in the form of a project officer and project secretariat) to oversee an advisory team and to successfully navigate the various decision gates.

The REIPPP procured national IPPs under a structured manner following the logic of PPP, but in a “PPP-lite” fashion. The REIPP follows the broad PPP sequence but is front-loaded in terms of creating an IPP projects environment, thus avoids the reviews and approvals en route, and concludes cleanly without (potentially) protracted contract negotiation. REIPPP procured IPP PPPs at the national level outside of the standard PPP framework and has undoubtably been successful in achieving its objectives.

Considering the bureaucratic, skills and cost implications of the standard PPP process on the one hand, and the success of a programmatic support approach such as provided by the national REIPPP, a provincial REIPPP (“GREIPPP) approach is proposed. This echoes the sentiments of National Treasury of the concept of an IPP Cities Support Programme.

However, with recent events regarding new capacity determination (October 2020) seem to have overtaken the National Treasury’s “framework” requirement. To this end, municipalities that comply with the Determination can clearly proceed and engage in an IPP procurement process, and not just the Metros as it would seem was envisaged by National Treasury.

This is therefore a situation where Provincial Government can play a facilitating role. The GREIPPP could initially be hosted in an existing facility such as Gauteng Infrastructure Financing Agency (GIFA) before considering the viability of a dedicated office. The activities that a provincial IPP office could carry out would be like that of the national REIPPP at its inception (standard contract documents, standard bidding process, identifying capacity requirements per municipality, etc.).

Although there are national opportunities to provide direct financial and non-financial support to a specific project, we propose that the best results may be achieved if Gauteng Province follows a

programmatic support approach. A “GREIPP”-type approach would greatly simplify and shorten the standard PPP process currently foreseen in the New Generation Determination.

6 CONCLUDING REMARKS

- To have a holistic just energy transition plan, it is critical to understand the existing sources and demand of energy, and how much energy is consumed.
- Data availability is generally a challenge in most municipalities, however, when there is little to no buy-in from key stakeholders, the task of gathering the necessary data becomes increasingly difficult. As such, it is essential to have buy-in from key municipal stakeholders and better understanding of the benefits of the project to the respective Municipality.
- The methodology for aviation fuel data collection needs to be discussed within a broad stakeholder forum, that would include COGTA, DMRE, Environment, SAPIA, Transnet, Natref, SASOL and other parties. The current approach of attributing fuel consumption to the same locality where the sales volumes were reported leads to significant anomalies in the final energy outlook patterns.
- With the increase of the threshold for embedded generation from 1 MW to 100 MW without requiring a license, it is recommended that COGTA assist Municipalities to develop policies and processes in this regard.
- Not all Municipalities have a small-scale embedded generation (SSEG) policy and/or SSEG tariff. However, increasing penetration of SSEG could erode municipal income if not regulated and charged accordingly. As such, it is recommended that COGTA assists or facilitate the development of the SSEG policy and associated tariff.
- Municipal IPPs are decidedly required to be procured as a PPP, following the procedure as set out in the MFMA. However, standard PPP process is time-consuming (FS, shortlist, bid) and expensive. On the other hand, the REIPPP procured national IPPs under a structured manner following the logic of PPP, but in a “PPP-lite” fashion. As such, the province should consider a broad, programme-based support to municipal IPPs taking learnings available from the national REIPPP and setup a Gauteng REIPPP (GREIPPP).
- The GREIPPP would require proper legal standing, specifically if the intention is to move outside the formal PPP procurement process. The GREIPPP can initially be hosted in public institutions like GIFA and Gauteng Treasury (both who have PPP and energy sector experience).
- The Auditor General made a finding for the financial year 2018/19 that only one of the 11 municipalities in Gauteng can be categorised as being in good financial health while the remaining 10 are either “of concern” or “requiring intervention”. This situation is unlikely to have improved dramatically in the last two years. A starting point for the GREIPPP would be to agree with National Treasury and other stakeholders what the measurement tool is to establish “good financial standing”. To this end the province should develop a standard financial standing checklist that can be used by municipalities.
- The relationship between municipalities as contracting agency and the IPPs is structured in a Power Purchase Agreement (PPA). The province should develop a standard PPA that can be used as a template across the municipalities.

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