



PEAT (Pyro/ Energy/ Agri for Tshwane)

An Agri Steel Investment Proposal

to the

THE CITY OF TSHWANE

Table of Contents	Page Number
1.Declaration	3
2.Abstract	5
3.Executive summary	6
4.Legal Framework	12
5.Project Overview	15
6.Demonstrable innovation through novel synergism	22
7.Project structure	24
8.Legal qualification	25
9.Technical Feasibility	31
10.Finance feasibility and costing	32
11.Proposed project milestones	36
12.Consortium partners	38
13.Conclusion	46

1.DECLARATIONS

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The information in this proposal is confidential and of a propriety nature and should not be made public
without the prior written consent of the Consortium.

No other South African institution has received this, or any similar, proposal.

The offering of this proposal was not made as result of any non-public information that was obtain from
officials of the CoT or any other institution.

1.1 This is an unsolicited property asset and electricity supply proposal to the City of Tshwane. It is made by a consortium of partners that have developed a unique propriety solution to meet not only the energy crisis, but the plethora of socio-economic issues that have arisen in its wake. This includes the deindustrialisation of the City of Tshwane, increased unemployment and the negation of the City of Tshwane's pursuit of an environmentally sustainable growth path.

- 1.2 This proposal provides a novel solution through a dynamic and unique synergism of energy generation that will rely on pyrometallurgical smelter gasification, biomethane production and a liquified natural gas input. It is in fact not one solution, but 3 exclusively interrelated projects that are each catalytic, but becomes a very powerful proposition when considered together – a real multiplier effect. As a consequence, the City of Tshwane (CoT) will be able to procure energy to meet its needs from a stable, environmentally friendly, source and be empowered to shed its reliance on the coal-based, precarious supply provided by Eskom.
- 1.3 The primary output of the proposal will ultimately see the supply of clean energy to the City of Tshwane; however, with that will come enumerable positive externalities from the creation of new-age industries, including bio-agricultural and unique metallurgic initiatives. These will ensure that the City of Tshwane becomes a capital city of the future, only today.

2. ABSTRACT

This is an unsolicited proposal focused on industrialization and a green economy for the City of Tshwane. The consortium partners are industry and subject matter specialists who have crafted an exclusive working arrangement that addresses the plethora of socio-economic issues that currently plague the City and the Republic. This includes the deindustrialisation of the City of Tshwane, increased unemployment, intermittent and unreliable supply of power and the negation of the City of Tshwane's pursuit of an environmentally sustainable growth path.

This proposal provides a novel solution through a dynamic and unique synergism of iron ore processing, agricultural production of bio-methane and hydrogen gas and the use of both gas and exhaust emissions to drive turbines for the production of clean energy that reduces the carbon footprint of the City significantly and also generates carbon credits and revenue through the trade of these. The industrial processes and expertise that we will rely on include pyrometallurgical smelter gasification, biomethane production through the cultivation of Vetiver grass and an initial piped liquified gas input. Not only will there be expansion of jobs and positioning of the City as an innovative leader that cares about it's citizens but it will be able to procure energy to meet its needs from a stable, environmentally friendly, source and be empowered to shed its reliance on the precarious supply provided by Eskom.

This program will fast-track our path to carbon neutral status to ensure that the City of Tshwane becomes a capital city of the future, only today.

3. EXECUTIVE SUMMARY

- 3.1 Local and international media, a host of analysts and the public commentariat at large are often quick to describe South Africa as being on "the precipice". By this they mean that the Republic, due to the very real social, economic and political challenges it faces, is all but predestined to fail; that solutions to these challenges are few and that the ability of innovation to turn things is all but negligible.
- 3.2 We do not share the view that the challenges facing the Republic at large and the CoT, in particular, are insurmountable. In fact, we are hopeful. We being the Consortium who have conceptualised and intend to successfully implement the Project. The Project is the subject matter of the present proposal and an initiative that will, with pressing urgency, steer the Republic away from the precipice and on a course to prosperity. To be clear, we are not naïve as to the obstacles in the way of our society becoming one that flourishes, absent of socio-economic hardship. Such obstacles and challenges do not, however, mean that South Africa is predestined to fail, but rather, that the Republic is at an inflection point.
- 3.3 It is at this point that the Republic, through its leaders at all levels, must make a choice; are they to rely on outmoded, obsolete and ineffective tools in order to address not only the needs of the country today, but the needs of the country tomorrow, or do they firmly and decisively embrace a new wave of innovation and ingenuity so as to future-proof the Republic from the continued threat of social instability, climate change and energy-insecurity?
- 3.4 The Project provides a resounding and affirmative answer to the latter question and provides a solution to the current challenges facing the CoT that is singularly novel, groundbreakingly innovative and truly representative of a new path to addressing the socio-economic challenges

facing the metropole. It is a Project that not only fits within, but aligns and exemplifies the goals articulated in the CoT's Vision 2055, being the realisation of "*future capital city*".

3.5 The Vision 2055 identifies the need for interventions that are "*transformative, bold, disruptive*" and in doing so has rightly set the benchmark for partnership at ingenuity. It is in line with these interventions that we wish to position **the uniqueness and innovation of our project**. The Consortium has identified three cardinal challenges to remaking South Africa's capital city in line with the Vision 2055, that it wishes to partner with the CoT in solving. These challenges being:

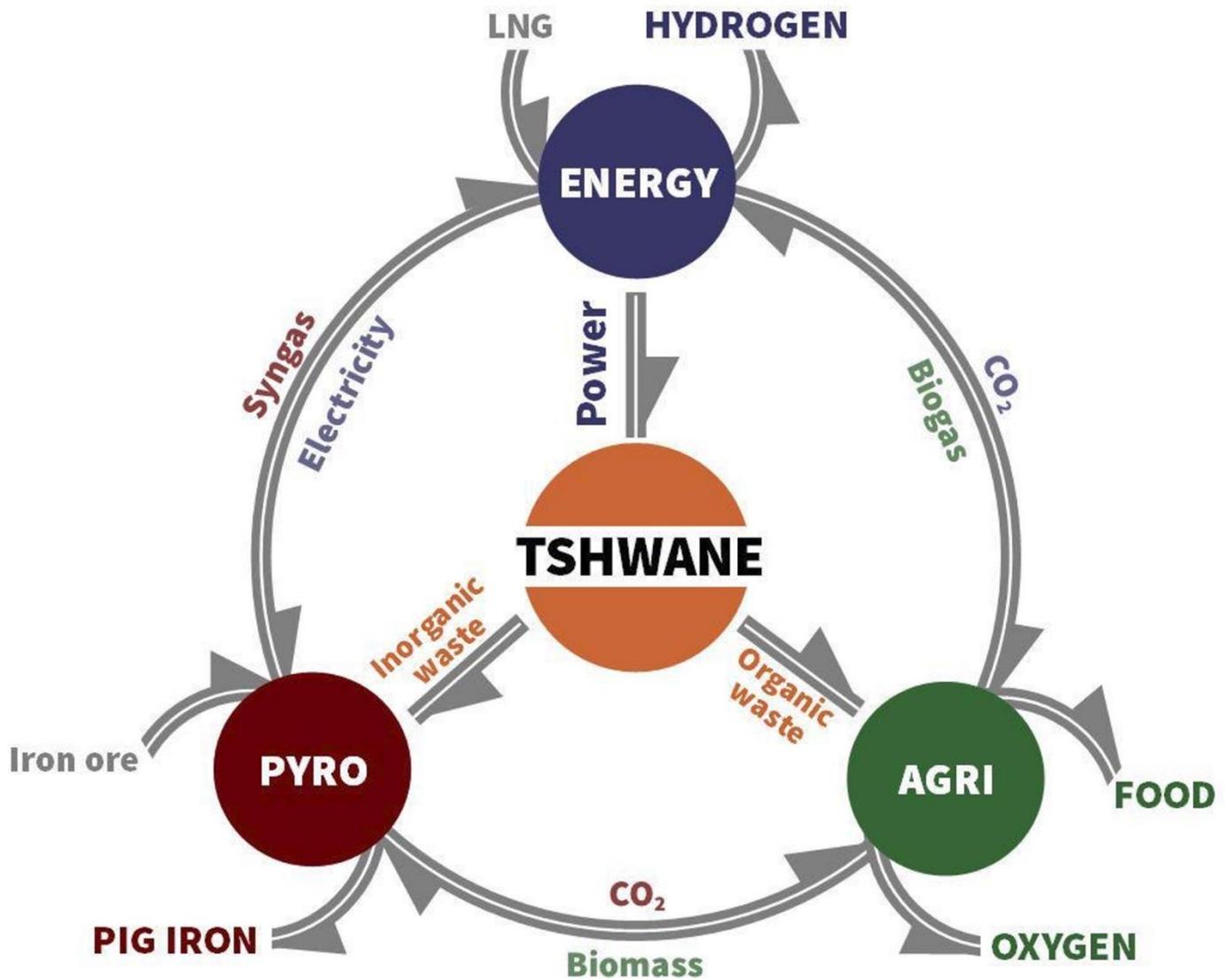
3.5.1 *First*, the CoT is currently, as is most of the Republic, facing low rates of growth and worryingly low levels of employment, ranging from between 16% and 24%. This challenge is compounded by the de-industrialisation of the CoT, not least due to the energy crisis mentioned above, but also the lack of private sector initiative in conceptualising fit-for-purpose solutions so as to bring industrial activity back to the CoT. This is particularly disheartening, as the economic outlook of the CoT should only be positive for, as discussed in greater detail below, the CoT is primely located to stand as a hub of economic activity in the Republic. It stands to reason that the metropole which conducts 90% of all research and development in the country should itself be the lodestar of innovation, progress and growth.

3.5.2 *Second*, the immediate need to address the current energy crisis facing the CoT. This includes, on the one hand, rolling blackouts caused by the regular waves of planned and unplanned shortages in electric supply and, on the other hand, the concomitant devastation caused to the economy of the metropole. An energy crisis, after all, is not just about a lack of energy supply but the, often irreparable, deleterious effects that arise as a result. Whilst this crisis finds its causes in difficulties and challenges located

elsewhere; namely those facing Eskom Holdings SOC Limited ("Eskom"), this does not and should not mean that there is no immediate answer to the problem, nor one that cannot be met by the CoT seeking strategic partnerships elsewhere. The Project is one such homegrown answer.

3.5.3 The third, and final challenge is the lack of a developed green economy that will ensure stable and resilient jobs which are protected against the pressing threat of climate instability. A green economy is a future-proofed diversified economy and one that is assured a steady growth path through the harnessing of new technologies and industries. Indeed, the evidence is now overwhelmingly clear, low-carbon economies drive down inefficiencies whilst actively embedding long term productivity and growth.

Within the consortium partners we have secured exclusive supply and working relations between the service providers working on the project. This includes exclusive suppliers along the value chain meaning that over and above the innovation contained in the overall plan, it would be impossible to replicate the scope and brevity of the project through any other group.



3.6 The Project meets these three challenges head on. It does so through seeking to repurpose, redefine and reimagine the Arcelor Mittal Steel Industry as well as the Rooiwal and Pretoria West Power station sites into state-of-the-art beneficiation complexes, the likes of which have yet to be seen in the Republic. We propose beneficiation of iron ore to finished products cast at foundry's long closed in the City.

3.7 The beneficiation complex will centre around the retrofitting of the current infrastructure to accommodate two state of the art closed cycle gas turbines. These will provide a much needed 900MW to the CoT and place the metropole on a path to full scale energy independence. This

will be done by leveraging two cutting-edge technologies in order to provide the required source material so that the energy may be produced locally, cleanly and sustainably.

3.8 Further beneficiation will be extended to the pyrometallurgical facility. Currently we have a once vibrant iron industry in the City that supported many families and industries on it's knees and in fact shut. Iron ore is trucked to either to Saldanha or Richards Bay where it is exported, processed and we purchase the finished products back at inflated prices. What we propose is to smelt iron ore and slime at the Arcelor Mittal plant in Pretoria West and to capture carbon in the ore in an enrichment proprietary process that produces Pig Iron which is much sought after with off-take agreements in place to supply local and international customers. The Pig Iron could also supply the (now defunct) Pretoria West steel foundry which could cast much needed products like railway tracks and water pipe infrastructure. This would complete beneficiation of our mineral wealth.

3.9 The first technological innovation will involve the creation of **a new-age pyrometallurgical facility** at the beneficiation complex that will, in the process of producing much in-demand Pig Iron, generate an export gas that will feed directly into the turbines for energy generation. The second source will come from the creation of **a biomethane plant and an attendant agricultural development zone**. Not only will this provide a bountiful source of energy production, but the previously unexplored synergy of using biomethane production, in tandem with smelter-gasification, will lead to a diversified energy solution that meets a wide array of the CoT's needs. It will be phased in and decrease and eventually remove our reliance on piped LNG.

3.10 This is because these sites of source material will create not only the gas required for the much-needed generation of power, but a wealth of products and ancillary industries that, on their own, are capable of catalysing the reindustrialisation of the CoT. **This will consequently**

release the CoT of being beholden to external supply side concerns and begin to place the security of its energy production safely in its own hands. The longevity and value of the Project is further fortified by the fact that the energy which is generated will, in time, generate carbon credits and a new income stream through the trading of these credits, by the reliance on forward thinking and innovative processes such as smelter-gasification and biomethane production. The upshot is an energy solution that is green, industry revitalising, sustainable and job creating.

3.11 **For these reasons, we don't see this as a solution to a power generation problem. It is a solution to intermittent electricity supply, unemployment, social-unrest, climate instability and economic recession.** It is the kind of intervention that is required by a modern government; it is one that seeks to solve not only the cause of the problem, but its already felt effects and in doing so provides a benefit that is greater than the sum of its parts.

A standout feature about the solution is that it will not cost the CoT any funding, but only a commitment to partner and assistance with the bureaucratic process in order to fully leverage the assets and unique opportunity we present.

4. LEGAL FRAMEWORK

4.1 A list of the applicable laws, statutes, regulations, policies and directives is set out in the main proposal.

4.2 Whilst this proposal has been compiled with due regard to the laws of South Africa, the following legal framework is noted as having specifically guided the formulation of this proposal.

Local Government: Municipal Finance Management Act 56 of 2003

4.3 Section 113 of the Local Government: Municipal Finance Management Act 45 of 2003 ("**MFMA**"), headed "*Unsolicited Bids*", states:

- "(1) *A municipality or municipal entity is not obliged to consider an unsolicited bid received outside its normal bidding process.*
- (2) *If a municipality or municipal entity decides to consider an unsolicited bid received outside a normal bidding process, it may do so only in accordance with a prescribed framework.*
- (3) *The framework must strictly regulate and limit the power of municipalities and municipal entities to approve unsolicited bids received outside their normal tendering or other bidding processes."*

Municipal Supply Chain Management Regulations

4.4 Regulation 37 of the Municipal Supply Chain Management Regulations published under General Notice 868 in *Government Gazette* 27635 of 30 May 2005, as amended ("**MFMA Regulations**"), headed "*Unsolicited Bids*", states:

- "(1) *A supply chain management policy must state that the municipality or municipal entity is in terms of section 113 of the Act not obliged to consider unsolicited bids received outside a normal bidding process.*
- (2) *If a municipality or municipal entity decides in terms of section 113(2) of the Act to consider an unsolicited bid, it may do so only if -*
 - (a) *the product or service offered in terms of the bid is a demonstrably or proven unique innovative concept;*

- (b) *the product or service will be exceptionally beneficial to, or have exceptional cost advantages for, the municipality or municipal entity;*
- (c) *the person who made the bid is the sole provider of the product or service; and*
- (d) *the reasons for not going through the normal bidding processes are found to be sound by the accounting officer."*

City of Tshwane Policy on Immovable Property Asset Transfer, Disposal and the Granting of a Right to use, Manage or Control a Property Asset Owned by the Municipality, 2019.

4.5 The City of Tshwane Policy on Immovable Property Asset Transfer, Disposal and the Granting of a Right to use, Manage or Control a Property Asset Owned by the Municipality as adopted on 28 March 2019 ("**the CoT Policy**") at Item 21.1, headed *Requirements for the considering of unsolicited bids*, provides that:

"The Accounting Officer may decide to consider an unsolicited bid for property assets only if:

- (a) *The property proposal involves a proven unique innovative design, approach and/or concept relating to a property asset or the manufacture or the delivery of a proven unique innovative design, approach and/or concept relating product or service which may be provided on the property asset which may include, but is not limited to, urban design, retrofitting, and property developments on City land that are in line with national and/or international best practice or first world development models that have not previously been introduced and will improve the economic benefit to the City; or*
- (b) *the proposal presents a new and cost-effective method of service delivery relating to the property asset; or*
- (c) *Is demonstrably a unique property asset proposal for the transfer, disposal or right to use, manage or control a property asset or only one potential developer can develop an immovable property asset in a particular unique manner, within a given period; or*
- (d) *Is demonstrably a proven unique innovative concept and only one potential tenant can utilize the property asset in the manufacture of a unique and innovative product or the product or item can only be produced or manufactured under specific unique requirements that are met by that particular municipal property asset; or*
- (e) *Only one potential developer or tenant carries the license or authorized permission of the Original Equipment Manufacturer (OEM) to produce the said product; or*

- (f) The proposal would result in the significant generation of new sustainable employment opportunities and ensures that a substantial portion of the employment opportunities created that are better or improve on the existing national and regional norms; or
- (g) The proposal will promote Black Economic Empowerment and/or employment opportunities for black people;
- (h) It translates into economic emancipation and empowerment of a significant number of people to be employed as part of the proposal which may include provision of skills to a wider base of City residents; or
- (i) *It contributes positively to the fixed investment figures and/or promotes the financial sustainability of the City; or*
- (j) *It promotes the supply of capital goods to expand the economy within the area of jurisdiction of the City; or*
- (k) The person, institution or legal entity that made the bid is the only developer, who can bring about such development of a property asset in the City within a given period or is the only user, who can utilize that property asset in the specific unique manner or for the specific unique ends as envisaged above; or
- (l) *The person or institution that made the bid holds the license or written permission from the original innovator or developer of such concept (e.g. Disneyland) or holds the intellectual property rights to such concept and further subject thereto that if the development is not carried out by the innovator or patent holder, the proponent must produce veritable proof that the development is appropriately authorized; or*
- (m) It positively enhances the brand and reputation of the City, **AND**
- (n) *A comprehensive and relevant project feasibility study has established that the unsolicited property asset proposal provides a clear business case that shows that there will either be an exceptional cost advantage or it will be exceptionally beneficial to COT. These claims should be supported by an in-depth study on the quantified benefits for the short term and also a projection on the medium to long term benefits or value to the Municipality or community." (Our emphasis).*

5. PROJECT OVERVIEW

Problem statement

5.1 The CoT is currently facing severe difficulties in achieving the Vision 2055 goal of a "*resilient and resource efficient city*". This is in large part due to a sustained lack of energy stability, caused by the metropole's total reliance on Eskom for its generation needs, which include a daily demand of 2000 MW. The energy crisis has resulted in a number of negative externalities; including, low growth, an inability to embrace a green economy, increasing unemployment and the deindustrialisation of the metropole. This distributed and interconnected web of obstacles has greatly undermined the CoT's efforts to meet its current and projected goals.

Objectives

5.2 The Project's objectives have been conceptualised to align with the objective set and developed by the CoT in the various and most current growth and development plans, such as the Vision 2055, the *City of Tshwane Integrated Development Plan 2016/2021* and the *City of Tshwane Metropolitan GAU*.

The key objectives of the Project are to:

- Provide the CoT with an energy supply that is stable, clean and cost-effective.
- Sell electricity to the CoT at a rate that is lower, or at the very most matches, the tariff currently set by Eskom.
- Ensure that the CoT does not bear the risk of incurring any capital expenditure through the implementation of the Project and, more specifically, the proposed solutions energy insecurity, unemployment and climate instability.

- Create a green circular economy that will provide evergreen value to the CoT in both employment, sustainability and new economic modalities, such as newfound value in carbon credits created by the operation of the Project.
- Revitalise the industrial sector in the CoT through the creation of a beneficiation complex that spans not only the cutting-edge use of pyrometallurgic industries, but leverages various manufacturing and agricultural projects to create both energy and employment.
- Upcycle the CoT's assets that are currently not being utilised and transforming them from a debit to credit item at no additional cost to the CoT.
- Provide the CoT with the capacity, in the long term, to generate its own stable, clean and cost-effective energy supply.

Site and scope of project

5.3 The Project will be located on two sites within the CoT. The first site will be within what is the current bounds of the Pretoria West Power Station, whilst the second will be in around the location of the Rooiwaal Power Station.

5.4 The central aim of the Project will be to tackle all facets of energy instability in a manner that utilises more than a single-source solution. The Project will, however, be focussed on the construction and operation of two open cycle turbines on the Rooiwal and Pretoria West sites. Whilst a conventional generation solution of this kind would utilities a single source material, ie LNG, the Project proposes to reimagine what gas power solutions can be. This will be by using three interrelated but distinct fuels with which to operate the open cycle turbines in a manner that is efficient, carbon-offsetting, job-creating and ultimately, ground-breaking.

5.5 The following provides a synopsis of how these three source materials will combine to provide innovative levers of energy production, greening and employment to the CoT. Further

information on the technical feasibility of the projects, along with a comprehensive data sheet that demonstrably shows a cost benefit to the CoT, are discussed below in Section 0, headed "*Technical Feasibility*" and under Section 0 below, headed "*Financial Feasibility and Costing*".

A new-age pyrometallurgic industry

5.6 The Consortium has identified what was the original South African Iron and Steel Corporation ("**ISCOR**") works site in Pretoria West as a prime location to develop a modern pyrometallurgical industry within the CoT ("**the pyrometallurgical solution**"). The proposed facilities will require between 100 to 300 hectares of space at the original ISCOR site, which is currently not being utilised by the CoT. In terms of the surrounds, the site is located adjacent to existing logistics and transport structure.

5.7 The infrastructure that is currently at the Pretoria West site has not been used in the past 20 years and at least since ISCOR ceased its own iron and steelmaking operations. This provides fertile ground for the revitalisation of these facilities and the Project intends to harness a significant portion of the exiting and surrounding infrastructure. By this process of upcycling, the capital and operating costs of the Project will be significantly minimised, whilst removing the blight of underutilised and inoperative municipal assets.

5.8 The pyrometallurgical solution will utilise a state-of-the-art smelter gasification ironmaking process, namely the "COREX Process" developed by Primetals Technologies ("**Primetals**"), itself an international leader in metallurgical plant development and construction. The pyrometallurgical solution will provide the following direct outputs:

5.9 The production of 2 mtpa of MPIG from iron ore tailings (being the residue that is left over after the primary extraction of the mineral has taken place). Such tailings are in plentiful supply from existing mines that are already networked to the proposed site.

5.10 The upgrade of 1 mtpa of furnace slag, being the by-product created by the operation of the pyrometallurgical solution itself and 4 mtpa of silica-rich clay into marketable products, which are currently in demand from a variety of construction and agricultural industries.

5.11 The true site of innovation, however, will be provided by the Consortium's proprietary use of the Primetals COREX process, which not only brings with it class-breaking efficiency in generating the material outputs listed above, but has the ability to produce high-quality industrial gas that can be utilised in a number of downstream process. It is this gas that will be fed into the open cycle turbine constructed as part of the Project, which in turn will generate a minimum of 900 MW of electricity for the CoT.

5.12 Remarkably, this energy rich source of high-quality gas will be created by the use of mineral waste that would otherwise be unutilised, along with the added boon of producing various marketable products in the process. As should be evident, however, the greening and efficiency potential of the pyrometallurgical solution are wholly dependent on the Consortiums ability to:

Utilise sole supplier propriety infrastructure; and

in doing so create the necessary linkages between the production of MPIG and the use of energy-rich export gas, created in the smelting process, to operate specialised open cycle turbines for the purpose of energy generation.

5.13 The pyrometallurgical solution is therefore one facet of the Project that is only viable should the other components be in place. These components can, of course only be provided by the Consortium as discussed below under the heading "*Novelty through untapped Synergy*".

5.14 The pyrometallurgical solution has further greening potential in that the smelting process may be fed by suitable municipal, industrial, biological and agricultural waste. This will in time, supplement

the metallurgical coal required for the iron making process and has the potential, when coupled to the biomethane aspects of the process, to offset significantly any carbon emissions.

5.15 The studies provided under sections 0 and 0 show clear evidence of not only the cost savings this will ultimately provide the CoT, at the very least, due to the energy produced as part of the pyrometallurgical solution; but moreover, the effect the solution will have on stimulating the CoT's growth trajectory in a way that builds a new green economy.

5.16 It is plain to see that in the process of producing energy-rich gas to meet a dire need, his process will further serve the dual purpose of creating plentiful and sustainable jobs. Not only this, but the export gas created by the Corex process has numerous applications apart from energy production. For example, it can be used in chemical processes, bio-fermentation, steam generation and gas powered direct reduced iron production. The solution is therefore primed to catalyse further industries and initiatives through the revitalisation of the CoT's currently stagnate ferro-metals industry.

A state of the art biomethane initiative

5.17 The second facet of the Project is the construction and operation of a state of the art biomethane plant. The plant will be fed by purpose grown biomass, being selectively sourced and cultivated Vetiver grass, which will ultimately provide the open cycle turbines with approximately 600MW of clean biogas.

5.18 This green alternative will involve the construction of decentralised biogas plants that will be situated in proximity to the already available gas pipelines discussed immediately below, under the heading "*The availability and utility of a modernised standard gas solution*".

- 5.19 The significance of the biomethane plant, as with the pyrometallurgical solution, extends far beyond the mere production of a source material for much needed energy production.
- 5.20 As part of this green initiative, the Proposal will require roughly 30 000 hectares of non-arable or marginal land that is within a 50km radius of the plant. This land will be used to plant Vetvier grass which has been purposefully developed by the Consortium to provide a biomass product that is maximally cost-effective and efficient. Some of the fit-for-purpose aspects of Vetvier are that it has been designed as a drought resistant crop, whilst still being tolerant to areas with sustained rainfall.
- 5.21 The production of Vetvier alone will create approximately 10 000 stable and locally sustainable jobs, whilst upskilling and transferring various farming skills and practices relating to the internationally prolific, but locally nascent, biomass industry.
- 5.22 The biomass will then be utilised in the Project's own anaerobic digesters which will produce clean, green biogas for consumption by the open cycle turbines. This presents year another value-add in the chain of energy production, as the production of biogas itself is projected to bring in over 10 000 jobs whilst providing the CoT with ZAR 500,000,000.00 of carbon credits per annum. Of course, the generation costs created by this mode of energy production are also far less than that currently experienced through the CoT's reliance on Eskom.
- 5.23 A further benefit of the gas produced by the Project's biomethane initiative is that it can be stored and later fed into the pipelines that will serve the open cycle turbines at the Rooiwal and Pretoria West sites. This will provide sustained insulation from any disruption in supply, either from the export gas created by the pyrometallurgical solution, or through the newly conceptualised liquified natural gas inputs.

The availability and utility of a modernised standard gas solution

- 5.24 Rounding off the input sources to the open cycle turbines is the supply of LNG that will utilise project ready infrastructure that already exists around the Pretoria West and Rooiwal Power stations.
- 5.25 The availability of a stable LNG source will provide a fail-safe backbone to the operation capabilities of the Project and ensure that there will never be a moment when generation is not readily available. TotalEnergies has already partnered with the Consortium in order to provide the CoT with a sustainable source of LNG by integrating the ROMPCO pipeline into the already existing infrastructure in the CoT.
- 5.26 The CoT is currently served by a network of approximately 3000 km of pipelines owned and operated by Sasol Limited ("**Sasol**"). The current pipeline runs within 6 km of both the Pretoria West and Rooiwaal power stations and so is suitably located to connect to the Project infrastructure.

6. DEMONSTRABLE INNOVATION THROUGH A NOVEL SYNERGISM

6.1 The Project represents a new way in conceptualising solutions to how private actors can provide public services providers with the resources they need to deliver on their mandate. It does so by moving deliberately away from the single-problem single-solution perspective of the past and into the future whereby an array of skills, technologies and people can be harnessed together to provide value to state entities in their provision of basic services.

6.2 This is particularly useful at a municipal level, where the problems are known or knowable, the needs of the state-entity are clear-cut and so those, like the Consortium, that can harness specialised levers of innovation are able to present one-of-a-kind bespoke solutions to an array of problems.

6.3 The Project's product offering to the CoT is truly unique as it rests on combining a triad of technologies, being pyrometallurgic based smelter gasification, biomethane gas production and novel LNG linkages, so as to meet a conspectus of the CoT's needs. As is further made clear in Section 0 below, under the heading "*Legal Qualification*", the Consortium has come together as the single-source supplier of this product offering.

6.4 The Consortium therefore represents a unique and once-off blend of entities, expertise and experience to conceive and implement of a product offering that is greater than the sum of its parts. Innovation can only be found through synergy. The inevitable consequence of which are tailor-made solutions to problems that would have otherwise not existed. The Consortium has therefore come together to provide a solution to the CoT's energy crisis in a manner that is not marketing leading, but instead, seeks to disrupt the very way in which the market operates.

6.5 By relying on a novel synergism of a pyrometallurgic solution, a biomethane initiative and the harnessing of a hitherto untapped LNG potential, so as to bring a new manner of energy production to the CoT, the Consortium intends to fundamentally alter the way in which products are offered to the public sector in the future.

6.6 Of course, this synergism can only be conducted by the Consortium, via the use of its own propriety intellectual property, coupled with its experience and track-record, along with the tapping of its network of sole provider partners. These aspects are dealt with more pressingly in the sections below that cover the legal, technical and financial feasibility of the Project as a whole; although, at this juncture the following is evidence enough that only the Consortium was necessarily constituted to conceive and implement the various Project components:

6.7 Siemens Energy (Pty) Limited ("**Siemens**") has signed an unconditional letter of intent with the lead members of the Consortium to be the exclusive technology partner for the Project. This includes the developments of the two combined-cycle gas turbines that sit in the centre of the Project proposal.

6.8 TotalEnergies has committed to being the exclusive partner to the Consortium for the supply of LNG to the project;

7. PROJECT STRUCTURE

The Project will be structured through various agreements between the CoT in favour of the Consortium.

7.1 The first agreement will allow for the Consortium to refurbish, operate and maintain the infrastructure at the Pretoria West and Rooiwal Power station sites for a period of 30 years. This will be down on an off-balance sheet basis with the CoT bearing no capital expenditure in respect of the stations, although it will maintain ownership of the premises through-out the agreement.

7.2 The second agreement is a suitable power purchase agreement ("**PPA**") in terms of which the electricity generated by the Project will be supplied to the CoT, or the requisite contracting authority. This will allow the CoT to purchase the 900 MW produced, so that it may satisfy its current daily need of 2000 MW. This will be 900 MW of stable, secured and increasingly green energy, produced within the CoT itself. The gas produced will allow it to service the entire requirement of 2000MW.

Ultimately, at the end of the 30-year period, the CoT will continue to utilise the Project infrastructure to its benefit well into the future.

8. LEGAL QUALIFICATION

8.1 The CoT Policy sets out various threshold criteria for when an unsolicited bid may be considered by the Accounting Officer (the municipal manager), as stated above in section 4. It is worth highlighting that, of the thirteen qualification grounds listed in Item 21.1 of the CoT Policy, the Project need only satisfy a single threshold consideration for it to be considered. As seen in the following, the Project handily meets most, if not all, of the qualification grounds.

The property proposal involves a proven unique innovative design, approach and/or concept relating to a property asset or the manufacture or the delivery of a proven unique innovative design, approach and/or concept relating product or service which may be provided on the property asset which may include, but is not limited to, urban design, retrofitting, and property developments on City land that are in line with national and/or international best practice or first world development models that have not previously been introduced and will improve the economic benefit to the City

8.2 The Project is a singularly maverick proposal in that seeks to leverage the existing property and infrastructure assets of the CoT in a manner that has never been conceived of before. It does so through its reliance on not only a single-source fuel, but a triad of source materials, that when interconnected are able to provide the CoT with a source of clean sustainable energy; whilst at the same time, allowing for the development of novel nodes of economic activity.

8.3 The combination of biogas, pyrometallurgical smelter gasification and a novel LNG solution can only be harnessed by seeing the introduction of techniques, skills and developments that are not currently available to the CoT, or to anyone else for that matter. These techniques, skills and developments are in line with international best practice and have, as a matter of practically, only become available due to an array of cutting-edge technological developments and the Consortium's own ability to harness these technologies together.

8.4 The Project is therefore provenly unique in its design and approach to providing a new and evergreen source of energy to the CoT.

The proposal presents a new and cost-effective method of service delivery relating to the property asset

8.5 The Project is self-evidently new, as has been outlined above. A full costing model is provided in section 0.

[O]nly one potential developer can develop an immovable property asset in a particular unique manner, within a given period

8.6 The Consortium is the only group that can provide the bespoke development that is envisaged at the various Project sites. That is because each of the Consortium's partners have been carefully curated to develop a project of this nature. Not only that, but the Consortium's partners are simply the only entities with the technological know-how and proven capacity to execute the various Project components. As the Project is a distinct break from the past, seeing the development of a multi-modal solution to the problems caused by energy instability, it stands to reason that no other developer is placed to implement the Project.

8.7 The Consortium partners and affiliates have also bound themselves to be the sole suppliers of each of the component parts of the Project, as listed above.

The proposal would result in the significant generation of new sustainable employment opportunities and ensures that a substantial portion of the employment opportunities created that are better or improve on the existing national and regional norms

8.8 The Project will create directly approximately 5643 secure and sustainable job over the first five years.

This includes:

- 300 jobs at the Rooiwaal project site;
- 200 jobs at the Pretoria West project site;
- 550 jobs at the Biomethane plants;
- 4 293 jobs through the biomass farming initiatives; and
- 500 jobs through the implementation of the pyrometallurgical solution.
- The official unemployment rate at a national level was 32.6% in the first quarter of 2021. The Project will therefore provide a bulwark against the rampant increase of unemployment, not least that wrought by the COVID-19 pandemic, through its propriety multi-model approach to solving the current energy crisis.

8.9 The independent yet interrelated facets of the Project also have numerous positive externalities and possibilities of providing greater employment opportunities in the future. This is not least by the re-development of a ferro-industry within the CoT and the initiation of a burgeoning biomethane industry.

The proposal will promote Black Economic Empowerment and/or employment opportunities for black people

8.10 The Consortium partners, as well as their affiliates, meet the threshold of Broad-Based Black Economic Empowerment ("**BBBEE**") and the Project itself intends to create a plethora of jobs for black people, through the upskilling and introduction of a new labour market. The BBBEE credentials of the Consortium partners are given in the main proposal.

It translates into economic emancipation and empowerment of a significant number of people to be employed as part of the proposal which may include provision of skills to a wider base of City residents

8.11 The multi-modal nature of the project is a direct catalyst for empowering not only those employed within the Project structure, but those who stand to benefit from its outputs.

8.12 The pyrometallurgical solution, for instance, will not only produce the source material to provide energy to the CoT, but will create a number of ferro products that can then be subjected to downstream beneficiation.

The wider value of the Project, through the generation of a variety of value laden outputs, can also be seen in the biomethane initiative, which has the capability of ushering in a new biomass industry within the CoT. This will include the transfer of numerous skills and farming practices. Ultimately, this will see the creation of further industrial and agricultural development that can rely on the products generated by biomass farming and biogas production.

8.13 As stated above, at paragraph 0, the export gas created by the pyrometallurgical solution can be utilised in numerous other industrial processes and is not constrained to energy generation.

8.14 As opposed to a single-source solution, the Project will stimulate a number of different sites of industry and so will have the greatest possibility to see a transfer of skills to a wide base of the CoT's residents.

8.15 Given the novelty of the project, those that are employed directly will necessarily experience a significant upskilling. This will simply be the upskilling of knowledge, techniques and skills that are already commonplace in the market; but, the transfer of skills that will be of great value in the future.

The person, institution or legal entity that made the bid is the only developer, who can bring about such development of a property asset in the City within a given period

- 8.16 The Consortium is the only entity that can provide the services rendered by the Project to the CoT. It stands to reason therefore, that the Consortium is the only entity that could implement the Project within a given time period.
- 8.17 Nevertheless, the Consortium is able to offer the CoT a significant value-add in having the Project up and running in the shortest time horizon available. The Consortium envisages that the Project will be fully operational by the first quarter of 2025, assuming a contracting period begins in the second quarter of 2021.
- 8.18 Although, given the Consortium's use of propriety technology, along with their sole supplier partnership with Siemens, it is envisaged that energy generation and supply will already be possible by the fourth quarter of 2023.

It positively enhances the brand and reputation of the City

- 8.19 The aspiration of Vision 2055 is to see the CoT become a capital city of the future. The Project is a clear steppingstone to that reality and would necessarily add significantly to the brand and reputation of the CoT. This is not least because it will harness a number of novel and class-breaking technologies that would be a coup for any major city the world over.
- 8.20 Even more so, the Project seeks to provide the CoT with numerous future-proofed solutions to a number of issues facing metropolises throughout the Republic, that are uniquely prestigious in their own right. This spans the eventual utilisation of green energy, which no other metropole has sought to achieve in the manner proposed, through to the re-vitalisation of a previously stagnant ferro-industry, along with the introduction of a biomethane initiative.

8.21 All of these are elements would enhance the reputation of the CoT and put it firmly on the map as a forward-thinking metropole that is responsive not only to the challenges of today, but to the challenges of tomorrow.

8.22 It is therefore clear that the Project is ripe for consideration as it need only meet one of the abovementioned threshold criteria. It not only meets these threshold considerations, but as is outlined above and in what remains, exceeds much of what is required.

9. TECHNICAL FEASIBILITY

9.1 A full technical feasibility study was conducted in August 2014 and provides a comprehensive analysis of the viability of refurbishing the Rooiwal and Pretoria West power stations. Some of the inputs were used and a new study was performed at the end of 2020 with the technical feasibility study evidencing that the Project is viable and that its assumptions are sound.

9.2 The technical feasibility study remains relevant and useful as the Beneficiation Complex intends to operate on sites that have remained unchanged since the date on which the feasibility study was conducted. A copy of the technical feasibility study is attached.

9.3 Over and above the comprehensive 2014 report, the Consortium undertook further analyses to ensure that each of the component parts of the Project met the specific technical requirements needed. These documents provide a confluence of evidence that the project is technically feasible and will be operational according to the specifications in this proposal.

Included in these analyses are:

- a high-level power proposal;
- a detailed briefing note;
- a biomass to power presentation;
- a gas turbine explanatory note compiled by General Electric (Pty) Limited;
- an investment proposal detailing the COREX process; and
- various technical documents provided by Siemens detailing the technical feasibility of the project.
- All the above is contained in the main proposal.

10. FINANCIAL FEASIBILITY AND COSTING

10.1 The Consortium has undertaken rigorous financial modelling to ensure that the Project is not only viable but presents a significant cost saving to the CoT. In headline, the Project will offer the CoT:

10.2 Significant price security in that, as things currently stand, the CoT has faced an average tariff increase in excess of 512% in the past fourteen years due to its reliance on energy production from Eskom. This is almost five times that of inflation;

10.3 The Project will attract local investment of over ZAR 28 billion over the course of the first five years, whilst at the same time generation in excess of ZAR 1.03 billion of annual revenue for the rural agricultural development zones;

10.4 Through the leveraging of assets already owned by the CoT, the Project will offer the city a 10% reduction in their current costs of energy production and so will automatically generate an additional revenue stream of approximately ZAR 930 million by the year 2025. This is because these assets currently pose significant operational costs to the CoT, even though they are sitting idle, due to the expenses incurred in needless and wasteful care and maintenance; and

10.5 The Project will facilitate the entry of an entirely new revenue stream for the CoT through the reduction of carbon emissions by 6.75 tons per annum. The potential value of this carbon reduction, due to the sale of carbon credits, is worth approximately ZAR 810 million per annum.

10.6 The sale of electricity to the CoT will also never be for an amount more than what currently charged by Eskom and, in actuality, will be much less.

10.7 It is worth bearing in mind that the CoT will incur no capital expenditure through the implementation of the Proposal. That is because the Project structure will be facilitated by the signing of agreements with the CoT that will enable the Consortium to sell electricity and other products, including MPIG, to the CoT and the market. The estimated capital expenditure of the project includes:

- expenditure of R11.5 billion for the Rooiwal site;
- expenditure of R5.9 billion for the Pretoria west site;
- expenditure of R7.2 billion for the Biomethane initiative;
- expenditure of R1.5 billion for the biomass production; and
- expenditure of R22.5 billion for the pyrometallurgical solution.

10.8 This yields a total estimated expenditure of R48.6 billion. The Consortium is well financed and covered in this regard with large institutional funders having provided Letters of Intent and support and supported by the following.

Rooiwal site

10.9 The initial capital outlay of R1.5 billion will be project financed on a 70/30 debt to equity ratio. The indicative terms of the senior debt utilised for the project will be as follows:

- a ten year, fully amortising, term;
- an interest rate of three-month Johannesburg Interbank Average Rate ("**JIBAR**") plus 350 basis points (plus a 100 basis point interest rate hedge);
- and a debt service cover ratio of 1.41.

10.10 With an expected project internal rate of return ("**IRR**") of 14.34%, the above funding structure will result in an equity IRR of 19.7%. The full financials and model inputs of this component of the Project are attached in the main proposal.

Pretoria West site

10.11 The initial capital outlay of R5.9 billion will be project finance on a 70/30 debt to equity ratio. The indicative terms of the senior debt utilised for the project will be as follows:

- a ten year, fully amortising, term;
- an interest rate of three-month JIBAR plus 350 basis points (plus a 100 basis point interest rate hedge);
- and a debt service cover ratio of 1.32

10.12 With an expected project IRR of 13.52%, the above funding structure will result in an equity IRR of 17.92%. The full financials and model inputs of this component of the Project are attached in the main proposal.

Biomethane initiative

10.13 The initial capital outlay of R7.2 billion will be project finance on a 70/30 debt to equity ratio. The indicative terms of the senior debt utilised for the project will be as follows:

- a ten year, fully amortising, term;
- an interest rate of three-month JIBAR plus 350 basis points (plus a 100 basis point interest rate hedge);
- and a debt service cover ratio of 1.42

10.14 With an expected project IRR of 14.72%, the above funding structure will result in an equity IRR of 20.29%. The full financials and model inputs of this component of the Project are attached in the main proposal.

A full costing study that evidences the value add to the CoT is provided in the main proposal.

11. PROPOSED PROJECT MILESTONES

11.1 The projected milestones of the Project have been set in such a way to optimise the time with which power can be generated and sold to the CoT. This too will mean that the concomitant environmental, socio-economic and reputational advantages to the CoT will come online in the shortest timeline possible. This can only be achieved by the Consortium.

11.2 The phases for each of the Project components are as follows:

Rooiwal gas-to-power plant

11.3 Phase 1 will see Project critical manufacturing taking place along with the installation of the ACC, the SGT-800 closed cycle gas turbines, as well as other core components that will allow 140 MW peak ("**MWp**"), being the maximum potential output, to be available within twenty months of financial close (which is assumed to take place at sometime within the first quarter of 2022).

11.4 Phase 2 will see 280 MWp, in total, being operational by the commissioning of the second Block at the Rooiwal site, within thirty-three months from financial close.

11.5 Phase 3 and 4 will then see 560 MWp, in total, being made available within thirty-five months from financial close.

11.6 A Gantt chart representing the key milestones for the Rooiwal site is attached in the proposal.

Pretoria West gas-to-power plant

11.7 The Pretoria West site will follow a similar progression to that of the Rooiwal site, except that this component of the project will be constructed in two phases. More specifically:

11.8 Phase 1 will see the introduction of 140 MWp being operational within twenty months from financial close;

11.9 Phase 2 will see 280 MWp, in total, being operational within thirty-three months from financial close;
and

11.10 A Gantt chart representing the key milestones for the Pretoria West site is attached in the main proposal.

Biomethane initiative and biomass agricultural industry

11.11 The biomethane initiative and biomass agricultural development will be comprised of five component biomethane facilities that will be connected to the existing Sasol transmission lines.

11.12 The various sites will come online in a staggered fashion, so that:

11.13 Site one will produce 6 PJ of biomethane within twenty-four months from financial close;

11.14 Site two will produce 12 PJ of biomethane within thirty-six months from financial close; and

11.15 Site three to five will produce 30 PJ of biomethane within seventy-two months from financial close.

11.16 A Gantt chart representing the key milestones for the biomethane initiative and attendant biomass farming is attached in the main proposal.

12. CONSORTIUM PARTNERS

The Consortium Partners include the direct stakeholders / lead partners, the sole-supplier technology providers and an array of internationally renowned technical consultants and implementing partners with vast experience in executing similar projects in the country, on the continent and globally.

Consortium stakeholders / lead partners

The lead partners of the Consortium include **Kratos Energy** and **Uhuru Africa Energy**.

12.1 Kratos Energy

Kratos Energy is an empowered special purpose vehicle that was created to lead this project and which will be used as the entity to see the executive partners come together through the signing of various executive agreements, so that their interrelated expertise and synergies can be leveraged for collective success. The consortium lead is Dr Raymond Campbell who has led successful projects with Treasury and National Departments and previously with the City of Tshwane.

12.2 Uhuru Africa Energy

Uhuru Africa Energy ("**Uhuru**") is a joint venture between Uhuru Energy and SolarAfrica Energy (Pty) Ltd. Uhuru develop, finance, install, commission, own and operate integrated renewable energy solutions.

Uhuru has a long-standing and industry leading track record in implementing renewable energy solutions that includes, but is not limited, to:

- large scale solar PV;
- gas-to-power plants;
- co-generation, including the replacement of fossil steam from coal-fire boilers with sustainable and environmentally produced steam;

- job creation and local economic development through the farming of biomass;
- converting all non-recyclable waste to energy; and
- the recycling of wastewater using solar power and cogeneration.

Technology providers

The Consortium has partnered with world-leading technology providers on a sole-supplier basis in order to bring the Project from conception to construction. The Consortium has placed a premium on partnering with technology providers who are predominantly black-owned enterprises, wherever possible.

The technology providers include:

12.3. Siemens Energy

Siemens Energy is a global team of more than 91,000 dedicated employees. Together as one team across 90 countries, Siemens Energy are committed to making sustainable, reliable and affordable energy possible. By innovative and efficient utilisation of conventional and renewable energy sources, they are effectively addressing global issues of urbanization, growing scarcity of resources, and reducing CO² emissions therefore the impact on climate change. Siemens Energy's strength is that their product and service portfolios cover the complete energy value chain bringing 150 years of experience and know how. Siemens Energy rank in the top 4% on the Environmental, Social and Governance index, and are driven through innovation, extensive experience and transformation to decarbonize global energy systems.

12.4. Total Energies

Total Energies is a broad energy company that produces and markets fuels, natural gas and electricity. Our 100,000 employees are committed to better energy that is more affordable, more reliable, cleaner

and accessible to as many people as possible. Active in more than 130 countries, our ambition is to become the responsible energy major.

12.5. En|Power Trading

A critical partner to the success of the consortium, as an energy trading business they are the catalyst to private public partnership. Whilst protecting the City's margin they enable the private sector to invest and grow the renewables industry without the credit risk of the municipalities. Having already signed 2 use-of systems agreements with the municipality of George and Overstand En|Power are paving the way for energy trading in South Africa promoting transparency and the growth of cheaper cleaner energy.

12.6. SolarAfrica Energy

Founded in 2011, SolarAfrica has evolved into a dynamic team passionate about providing simple sustainable savings to our customers. Their Capex-free solution encourages businesses to go-green with the advantage of reducing their electricity costs from day one. As industry experts in Power Purchase Agreements, they offer a finance solution that delivers long term savings to businesses. Their turnkey solar service provides peace of mind that the solar system on your roof is always maintained, monitored, insured and performing at its optimum to provide the highest savings With over R600 million invested and 110 systems under ownership/ management SolarAfrica is one of the leaders in the B2B Solar PPA sector.

12.7. AFGRI Agri Services

AFGRI Agri Services is a leading agricultural services company and as a partner in agriculture we provide services across the entire grain production and storage cycle. We offer financial support and solutions as well as inputs and hi-tech equipment, supported by a large retail footprint. Our passion for the

development of new era farmers, through the Lemang Agricultural Services training programme, established in 2012, is developing strong future farmers.

12.8. Lemang Agricultural services

As an agricultural bastion that has celebrated 97 years in business, AFGRI Agri Services understands what it takes to be a successful farmer. It is for this reason we launched our new era farmer initiative in 2012, now known as Lemang Agricultural Services. Lemang Agricultural Services offers both farmers and corporates a variety of training and development choices, with the aim of supporting new era farmers in a way that ensures they are viable, independent and economically successful. Our approach draws on almost a century of experience in agriculture in support of continued food security, prosperity and sustainability across South Africa. Lemang unlocks the potential of new era farmers and their land through training, mentorship, technical assistance and exposure, increasing agricultural productivity and access to markets.

12.9. Weltec BioPower

The WELTEC Group from Vechta, Germany, has developed into a globally leading specialist for the construction and operation of Biomethane and biomethane plants since it was founded back in 2001. They have developed into one of the world's leading specialists in the construction and operation of Biomethane and biomethane plants. To date, we have implemented over 350 energy plants in 25 countries on 5 continents for our customers from the waste and food business, agriculture and the wastewater industry. With the conception, planning and construction of anaerobic digestion plants, permanent and temporary plant operation, 24/7 service and sustainable usage concepts for the output flows, our company group covers the entire Biomethane value chain.

12.10. Wiefferink

Wiefferink, from humble beginnings in 1956 making sails, manufactured their first manure silo cover in 1988. With the obligation for manure silos to be covered, Wiefferink quickly became the market leader in the Netherlands and then a global leader in silo covers. With the silo market reaching saturation by the nineties and with all silos being covered, the idea of providing a double foil to capture and store the Biogas was developed. This idea turned out to be a great success as European countries were starting to incentivise green energy. By 2008, Wiefferink was forced to expand to meet market demand and developed a large manufacturing facility in Poland. Wiefferink's field of operations has been constantly expanded and products for the agricultural, biogas, water treatment and industrial markets are supplied all over the world.

12.11. Flexxolutions

Established in 2012, Flexxolutions is a manufacturing company specialising in the development and supply of innovative textile solutions for gas and liquid cover and storage systems. The strength of Flexxolutions is the customer specific development, production and assembly of standardized cover systems such as silo roofs in normal and gas-tight design, air and double-layer roofs for the biogas industry, and also storage systems in the form of flexible tanks for water and fuels and high-quality bags for the storage of manure, gases and combinations thereof. They have all the necessary production techniques in the areas of design, assembly and welding. This way, the quality of the products can be guaranteed, and the system can be designed, manufactured and assembled as quickly as possible. Flexxolutions holds the KIWA KOMO certification ISO-9001:2015 for silo roofs, manure bags and the KIWA process certificate for PVC film processing.

12.12. University of Wisconsin – OSHKOSH

The ERIC lab at the University of Wisconsin Oshkosh serves as a research and testing centre for environmental health professionals, industries looking to evaluate materials for biogas potential, and conducting a variety of customized research projects. Consultation with their biogas system experts through the Environmental Research and Innovation Centre (ERIC) is beneficial to any organization looking to optimize biogas production. Every step of the anaerobic digestion (AD) process, from the acquisition of feedstocks to the analysis of digestate, can be examined in detail to find the most efficient method of biogas production.

Further information on the various technology providers, including their BBBEE status, please consult the main proposal

Consultants

The Consortium has utilised a number of consultants, both based locally and internationally, in order to ensure that the Project meets the international standards of best practice whilst conforming and responding to particular home-grown challenges. The Consortium has again strived to utilised the serve of predominantly, if not exclusively, black-owned enterprises.

12.13 Bokamoso

Bokamoso Environmental Consultants specializes in the fields of Architecture and all aspects of Environmental Management and Planning. Bokamoso was founded in 1992 and has shown growth by continually meeting the needs of our clients. Our area of expertise stretches throughout the whole of South Africa. Our projects reflect the competence of our well compiled team. The diversity of our members enables us to tend to a variety of needs. At Bokamoso Environmental we stand on a firm basis of

environmental investigation in order to find unique solutions to the requirements of our clients and add value to their operations.

12.14. Lungiswa Energy

Economic consultant and energy regulatory expert Ms Teljeur established Lungiswa Energy with Ms Fathima Sheik to form a majority black and 100% woman-owned professional energy consulting company. The company undertakes bespoke energy licensing, pricing and market assessments or research projects. Where larger teams are required the company Weltec BioPower;

12.15. Energas

Energas' core focus is to supply engineered solutions and equipment to the oil and gas industry in sub-Saharan Africa. Our products and services find application from the gas well, through the distribution and reticulation network up to the end user. We specialise in the design and supply of skid mounted pressure reduction, metering and heating skids for easy installation in remote areas. We offer solutions to generate electric power from various gas sources. Alternative power generation and waste heat recovery has become a priority to the industry and we have many solutions to offer. Energas Technologies is a member of the Southern African Gas Association NPC. Energas Technologies is ISO 9001 accredited and currently holds BEE level 4 status.

12. 16. DSP Consulting

DSP is a forward-thinking, consulting engineering company. Specialising in electrical, mechanical, fire, and eco-engineering, we are equipped to provide a full spectrum of customisable consulting and engineering services, geared to bring our clients' vision to life. Committed to sustainable excellence, regardless of the size of the project, our quality of work and service delivery remains uncompromised.

Our level 3 BBBEE allows us to collaborate with major corporations, meeting their requirements and developing effective engineering projects together.

Further information on the consultants, including their BBBEE status, is attached in the main proposal.

13. CONCLUSION

13.1 The Project proposed by the Consortium offers a once-off and one-of-a-kind opportunity to the CoT to meet the development goals set in the Vision 2055. Through the Project, the CoT will obtain a clean and environmentally friendly source of energy with the added benefits brought by establishing the Beneficiation Complex. This includes the revitalisation of a currently stagnant ferro-industry and the creation of a novel biomethane industry within the CoT. The concomitant benefits of skills-transfer, greening, employment and reputation enhancement can only be achieved through the Consortium's novel proposal.

13.2 If the CoT intends to be a future capital city, it will need to embrace future-proofed solutions to the age-old problems it faces. The Project is such a solution, being one that upends the traditional paradigm of using single-modalities to address problems that cause a distributed and multifaceted array of negative effects.

13.3 Through the harnessing of cutting-edge technologies the Project presents a steppingstone to the CoT so that it may become a capacity city of the future, not tomorrow, but today.