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EAST LONDON IDZ

MULTI MODEL ORIGINAL EQUIPMENT MANUFACTURER

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Table of Contents

1	Introduction	20
1.1	Background	20
1.2	The Value Proposition	20
2	Industry Overview	21
2.1	Local Sales	21
2.2	Export Sales	21
3	Government Incentive	22
4	The MMOEM	23
5	Implementation	27
6	MMOEM Location	28
7	Financing the MMOEM	28
7.1	Investment Structure	28
7.2	Financial considerations	29
8	The Way forward	29
8.1	Invitation to participate	29
8.2	Timelines	30

Table of Tables

Table 1: Total Capital Equipment Budget	25
Table 2: Production buildings and sizes.....	26
Table 3: Building and Infrastructure Budget	26

Table of Figures

Figure 1 Vehicle assembly Process Flow.....	24
Figure 2: Plant layout illustrating process flow	27
Figure 3: Geographic location of East London and aerial view of ASP and MMOEM location.....	28
Figure 4: Proposed Investment Structure	29

1 Introduction

1.1 Background

The East London Industrial Development Zone (EL IDZ) in Buffalo City, Eastern Cape developed a Multi-Model Original Equipment Manufacturer (MMOEM) concept as a strategic initiative to build on the successes of the local automotive industry and utilise the highly beneficial automotive incentive programme offerings of the South African Government. The vision of the MMOEM, as conceived by the EL IDZ, is to establish an efficient passenger and light commercial vehicle assembly facility using world-class, appropriate technology and equipment that will enable cost effective assembly of different platform low volume passenger and light commercial vehicles to world standards on behalf of OEMs, using Complete Knock Down (CKD) kits supplied by the client OEMs as input.

The MMOEM concept is not new. It has been tried and tested with much success - contract vehicle assemblers, such as Magna Steyr Fahrzeugtechnik Ag & Co.(based in Austria with operating facilities in Graz as well as Canada) and Valmet Automotive Inc. (a world class contract assembler based in Finland), have been manufacturing low volume models on behalf of OEMs for many years. The proposed MMOEM would, however, be the only such facility in the Southern Hemisphere.

The EL IDZ appointed a team of local and international experts to conduct a feasibility study to verify the economic viability of a MMOEM assembly plant that can assemble up to 70,000 units per annum comprising an array of niche vehicles and to make qualified assumptions in respect of throughput, investment, operating costs and volumes. The outcome of the study indicates that there is a strong business case for such a MMOEM. The government incentive programme, the Automotive Production Development Programme (APDP), includes a cash grant of up to 20% of eligible capital investment and substantial reduction in import duties on imported components. The subsequent saving on import duties on comparative fully built units, more than covers the assembly fee of the MMOEM. Following the conclusion of the study, the South African Department of Trade and Industry (the Dti) and the Industrial Development Corporation of South Africa Ltd (IDC of SA) have pledged substantial financial support towards the establishment of the MMOEM.

The MMOEM and its benefits are now being promoted to international OEMs with an established interest in the South African automotive industry as well as investors and potential plant operators, in order to secure the required volume off-take and strategic partners to implement the project.

1.2 The Value Proposition

The MMOEM will present investors and OEMs with the opportunity to participate in a modern, flexible vehicle assembly facility in South Africa with the following benefits:

- The substantial government support for the establishment of the infrastructure and the duty benefits of local assembled vehicles enables the cost effective assembly of low volume vehicles destined for the South African and African automotive markets. The beneficial trade agreements between South Africa and a number of its trading partners will enable OEMs exporting from South Africa to utilise reduced preference duty tariffs on exported vehicles;
- For the participating OEMs ,the only investment will be in model-specific jigs and fixtures required for the assembly of their specific models.

- The government investment in the building and infrastructure will benefit OEMs in reduced assembly fees;
- Products assembled using current best practices in automotive vehicle assembly; and
- For the investors and MMOEM operator, the project offers good returns on investment in a growing economy and industry sector that is of key importance to the South African government.

2 Industry Overview

The South African automotive industry and components-manufacturing supply chain are vital contributing elements to the success of the national economy and the sustainable growth of the country at large. The automotive sector is regarded as the leading manufacturing sector in South Africa, as it contributed 6.8% to the country's gross domestic product in 2011 with a total local production of just over 532,545 vehicles in that year. Industry aggregate sales of new vehicles reached 623,914 units (US\$21 billion) in 2012 and is projected to grow to ca 685,000 units in 2013. During 2012 the South African Automotive Industry exported 277,844 vehicles to 87 countries internationally but the number of destinations is expected to grow in line with Ford's intention to export its Ford Ranger to 148 countries. On a continental basis America, Europe and Africa represented the major destinations Africa accounting for 80,221 units or 28,9% of exported vehicles, Europe accounting for 31,5% and America for 66,220 or 23,8% of exported vehicles. Exports to African countries showed the strongest growth with approximately 18,9% year-on-year improvement over 2011. Light commercial vehicle exports to African countries excelled and at 69,187 units exported in 2012, this represented more than 86% of the total vehicle exports to Africa. The value of exported vehicles to international markets is estimated at US\$6billion in 2012. Assuming continued demand in most export countries and factoring in the light commercial vehicle export programme, NAAMSA projects industry export sales to grow by about 30% in 2013, or ca 83,000 units to more than 360,000 units.

2.1 Local Sales

The local automotive sales of passenger vehicles and light commercial vehicles reached just over 492,000 units in 2011 (NAAMSA). Recent statistics released indicate that growth of 6% was achieved in 2012. The total imported vehicles which are in these categories accounted for 57% of local sales (70% of passenger vehicle sales and 30% of light commercial vehicle sales).

2.2 Export Sales

The SADC market for passenger and light commercial vehicles is projected to grow to ca 142,000 units in 2013. Local OEMs make extensive use of the government incentives such as the MIDP (terminated in 2012) and the new APDP (which commenced in 2013) to establish a presence on the African continent. These incentives also provide the OEMs with a cost advantage to sell their products into the African markets. This strategy is benefitting local OEMs as is evidenced by the 60% and 18,9% growth in export of passenger and light commercial vehicles to African countries in 2011 and 2012 respectively.

OEMs that assemble vehicles locally benefit from beneficial trade agreements between South Africa, USA, Europe and other African countries in respect of favourable import duties on their vehicles manufactured in South Africa.

The South African automotive industry enjoys advantages when compared to some exporting countries. Its flexible production capacity, abundance of raw materials, government support measures, access to advanced technology and emerging-market proximity and cost advantages ensure the local industry increasingly adds value to multinational OEMs through competitively priced material, component, assembly and marketing costs. The South African and Southern African markets and economies also provide a sound and growing base market for OEMs while enjoying the benefits of first world transport, communication and finance infrastructure.

The combined effect of these initiatives is borne out by the performance of local OEMs such as:

- **Nissan:** In 2011 Nissan South Africa exported nearly 14,000 right-hand-drive and left-hand-drive vehicles assembled in their SA-based Rosslyn plant, largely into African countries;
- **Mercedes Benz SA:** MBSA Mercedes-Benz spent US\$235 million on upgrading its manufacturing plant in East London and now produces both right- and left-hand-drive vehicles for domestic and export markets;
- **BMW:** The BMW plant in Rosslyn secured the contract for the local manufacture and export of the BMW 3-series to local and international markets; and
- **Ford:** Ford SA invested US\$350 million in its assembly plant and is projected to manufacture up to 110,000 Ford Ranger pickup trucks per annum for the local and international markets;
- **Volkswagen:** VWSA manufactures the right-hand-drive Polo for the local and export markets; and
- **Toyota SA:** Toyota invested US\$1million in Prospecton/Durban to assemble the Toyota Ses'fikile minibus taxi from SKD kits. The company is also a leader in export of local assembled vehicles and approximately half of the cars exported by South Africa in 2011 were Toyotas.

NAAMSA expected US\$580 million to be invested by the South African motor industry during 2012.

3 Government Incentive

The government is committed to fast-tracking the growth and development of the local automotive industry with its Automotive Production Development Programme (APDP), which will replace the Motor Industry Development Programme from January 2013. The vision of the APDP, shared by government and industry, is to double passenger and light commercial vehicle production in South Africa from about 600,000 units in 2013 to 1.2-million units by 2020. The APDP strategy is intended to raise SA's profile as a viable destination for foreign industrial investment and development.

The APDP programme supports the local assembly of vehicles through a combination of benefits:

- **Favourable import tariffs:** An import duty regime of 25% and 18% respectively on the import value of fully built units (FBU) with the latter applying to imported vehicles from Europe, and a 20% duty on the value of imported components for local assembly.

- **A duty free allowance:** Local assemblers will be allowed to import a percentage of their automotive components duty free. This Vehicle Assembly Allowance (VAA) will start at 20% in 2013 and will be reduced each year thereafter to reach 18% in 2015 and remains at that level;
- **A production incentive (PI)** based on vehicle sales and local value added. The incentive refunds 20% of the local value added component of local assembled vehicle sales as a duty rebate; and
- **An Automotive Investment Scheme (AIS):** A capital investment incentive (non-refundable grant) of up to 30% of capital investment, paid over 3 years.

In terms of the current regulations, these incentives are subject to the local assembler achieving a minimum production of 50,000 units per annum within a 2-year ramp up period. The incentive programmes mentioned above are structured such that upon the achievement of these economies of scale, the import duty reductions exceed component importation and local assembly costs.

As such, there is a sound foundation and motivation for importers with established markets in South Africa to assemble their vehicles locally and sell to the South African and African markets. Local assembled vehicles will also be considered as manufactured in SA and can therefore be exported internationally using the beneficial trade arrangements that South Africa has with many of its major trading partners. However, many of the OEMs selling vehicles in South Africa cannot achieve the required scale of production independently. The establishment of the MMOEM as a single entity will, however, achieve the minimum scale, and those importers which participate, will enjoy the same benefits as the larger OEM's in South Africa.

The strategy is intended to raise SA's profile as a viable destination for foreign industrial investment and development. Furthermore, the government's goal of creating 5-million jobs by 2020 under the New Growth Path, as well as the National Planning Commission's National Development Plan (NDP) aspiration to create 11-million jobs by 2030 and bring unemployment down to 15%, will largely depend on the continuous successes of priority sectors, such as the local automotive sector.

4 The MMOEM

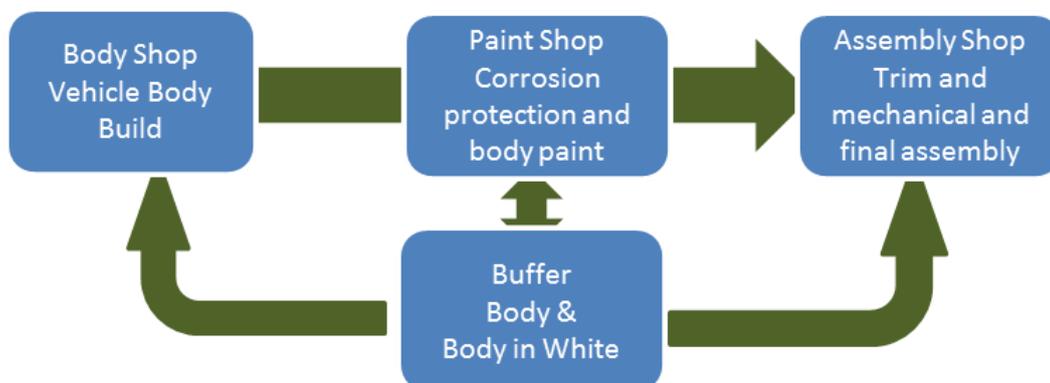
The MMOEM model entails the establishment of a flexible assembly facility, operated by a contract assembler that contracts with OEMs for the assembly of their vehicles. The MMOEM undertakes to assemble vehicles on behalf of OEMs to their requirements according to a time, volume and price service level agreement. In contrast to the single platform high-volume assembly plants of OEMs worldwide, the MMOEM was designed to cater for a high level of flexibility while maintaining OEM quality standards and cost efficient assembly of a number of different platforms in relatively low volumes. The local assembly of as little as 2,500 units per annum of a single model in the MMOEM will therefore give the contracting OEMs the same benefits as the existing OEMs that have assembly plants in South Africa.

The technical design of the proposed MMOEM was developed as part of the detail techno-economic feasibility study. The feasibility study team, comprising experts from local and international companies in the automotive industry and vehicle assembly technology fields, participated in the execution of a detailed facility design study to confirm the financial and technical viability of the proposed MMOEM. The team included advisors from Valmet

Automotive Inc. as an expert MMOEM assembler with an established international reputation amongst the leading OEMs. The South African team comprised individuals that have extensive experience in the local OEM industry with companies such as Ford, BMW and MBSA. The local team was strengthened by international engineers from Arup Inc., MBtech Group GmbH & Co., EDAG GmbH & Co. and Eisenmann AG. These companies are renowned and respected by the leading OEMs in the world. The team was tasked to design a flexible assembly facility that could cater for the cost effective assembly of at least 6 different vehicle platforms. Valmet was tasked to act as contract assembler and advisor in terms of the practical implementation of the assembly facility and to verify the feasibility of the MMOEM business model.

The production philosophy is primarily determined by the market need, ie the MMOEM must be a vehicle assembly facility that can produce in excess of 50,000 units per annum of a mixed portfolio of class vehicles (passenger and light commercial vehicles) that meets the South African government’s APDP requirements. The assembly facility will have to cost effectively assemble a variety of vehicles from different OEMs. The assembly plant configuration and individual shop (body shop, paint shop and assembly line) therefore deviates from the norm insofar as this plant cannot be designed around a specific product (or products) with a forecasted lifecycle – but rather an envelope of different products with a forecasted combined volume – with the ability to quickly change product(s) and/or volumes. The plant layout and operations do not differ from conventional vehicle assembly plants, as is illustrated in the flow diagram below.

Figure 1 Vehicle assembly Process Flow



The unique features of the MMOEM assembly facility differentiating it from conventional assembly facilities are encapsulated in the design of optimum flexibility at each stage of the assembly process. The unique designs incorporate interchangeable features of specific equipment, such as

- robots;
- the layout of the production lines;
- the design of the building; and
- ultimately, the use of the central buffer

The main features that differentiate the MMOEM vehicle assembly plant from others, and that accommodates the diversity of platforms envisaged, includes equipment, building and process features and final design of the Body shop, Buffer, Paint shop and Assembly.

In terms of the operating the MMOEM, the use of a highly integrated information and communication system is needed to ensure a high level of line production stability by scheduling the model mix prior to and during production. The involvement of a highly reliable supply chain is essential and therefore also the role of the logistics service provider. The capacity and flexibility of the plant production systems and physical layout, including the design of the buffer specifically, contributes towards the production system being able to absorb some operational delays – for whatever reason. The overall management of the production schedule therefore requires:

- JIT and JIS (Just-in-Time and Just-in-Sequence) supply logistics with intelligent tracking and part-by-part call-off with safety margins built in to absorb operational delays; and
- Extensive communication and coordination between OEM, Logistic Service Provider and MMOEM to balance the supply chain as far back as possible (OEM packaging of CKD), with built-in safety stock per model.

The assembly line flexibility includes provision for rapid changeover from old (run-out) models to new (run-in) models. Provided the required model specific jigs and fixtures are available on site, any new model introduction and associated engineering changes can be accomplished in 3 months which includes the initial assembly of vehicles and balancing changes in the supply chain. It is therefore foreseen that contracts for model assembly will typically require:

- A minimum contract period of 2 years with no model changes; and
- Minimum volumes of not less than 5,000 units per annum.

This will ensure that the MMOEM plant operates optimally within its designed envelope and competitive cost structures. Smaller volume production runs for shorter periods can be accommodated at a price premium though. The final design was tested thoroughly by MBTech in a simulation model that confirmed the plant design, plant lay-out, equipment capacity and plant throughput

The MMOEM has been designed to include sufficient flexibility to also assemble vehicles that have different power trains, such as electric vehicles. The use of alternative materials, such as carbon fibre, is not provided for. Should the need arise for alternative materials suitable plant and equipment would need to be installed, while no addition to the building would be required.

The unique design features of the MMOEM incur capital investment and operational expenses that might otherwise not have been required. The total projected investment in plant and equipment required to establish the MMOEM comprises the following and includes professional fees, escalations, contingency and inflation.

Table 1: Total Capital Equipment Budget

MMOEM Plant Section	Capital Budget
Assembly	\$49 556 453
Paint Shop	\$177 358 886
Body Shop	\$101 937 266
Buffer	\$ 5 145 400
ICT	\$46 099 558
Vehicles	\$ 303 435
Office Equipment	\$ 510 393
TOTAL	\$380 911 391

The plant and equipment requirement, informed the building and construction engineers in respect to the space, structure and layout of the assembly facility. The design of the building, lay-out and site position were carefully chosen to minimise environmental impact. A suitable site in EL IDZ is available and the engineers confirmed the availability of utilities, such as water, sewerage and electricity supply.

The building covers a total area of 183,146 m² and is made up of the following areas:

- Production areas – 158,179 m²; and
- Ancillary buildings and administration offices – 24,967 m².

Table 2: Production buildings and sizes

Schedule of MMOEM plant areas						
	Buffer	Assembly	Body Shop	Paint Shop	Bridge	Total
TOTAL (m ²)	18,560	54,839	53,333	31,251	196	158,179

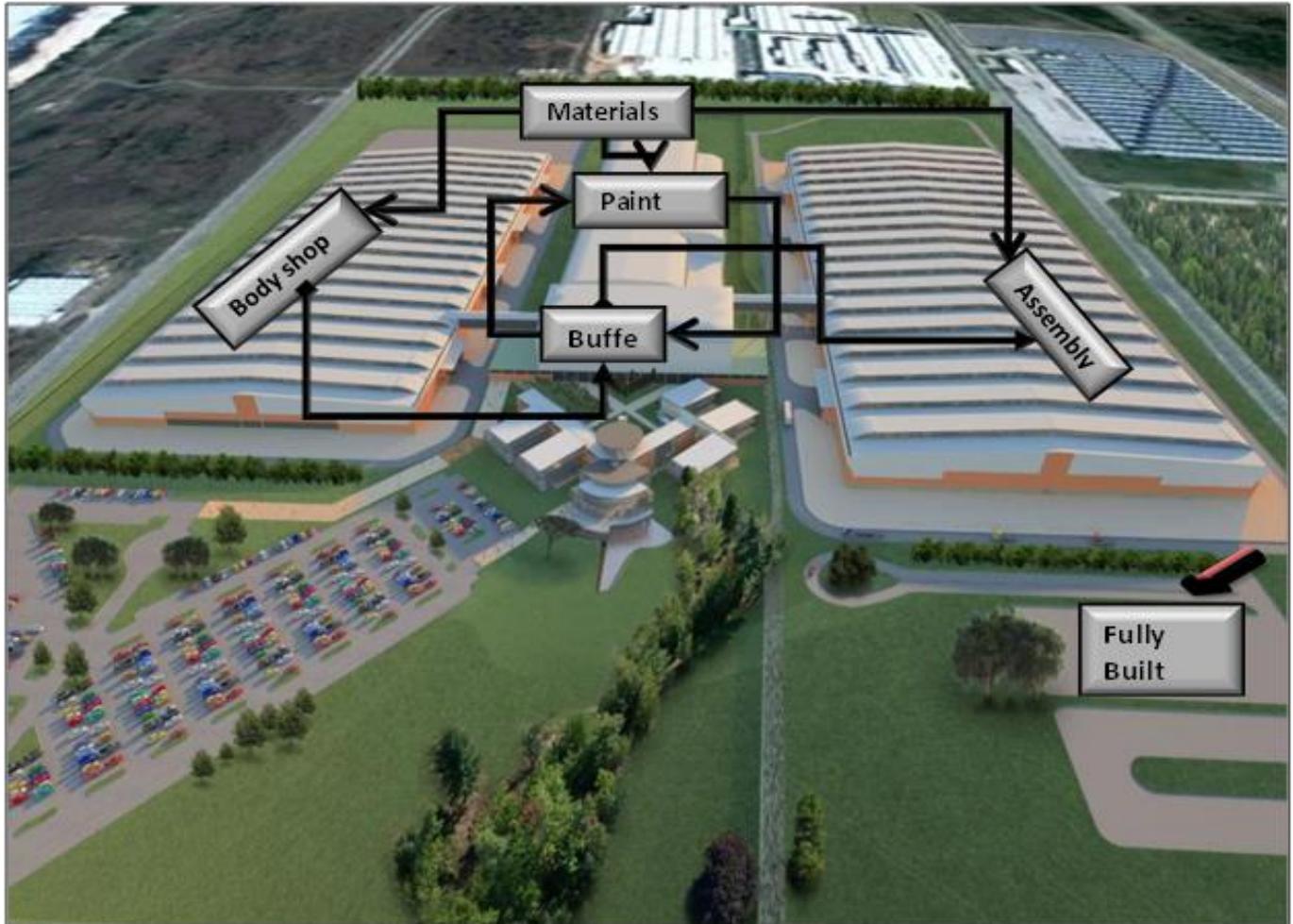
The building and infrastructure budget includes provision for major earthworks and site preparation to enable the plant to be built on 3 levels. The following budget costs include professional fees and escalation of costs as well as an inflationary adjustment based on 6% inflation per annum.

Table 3: Building and Infrastructure Budget

MMOEM section	TOTAL Projected
Assembly	\$81 254 576
Paint Shop	\$46 929 416
Body Shop	\$83 533 099
Administration	\$22 436 840
Buffer	\$18 208 212
Energy Centre	\$19 568 776
External Works	\$92 189 826
TOTAL	\$364 120 743

The overall process flow through the plant as discussed in the technical review is illustrated in the following diagram:

Figure 2: Plant layout illustrating process flow



5 Implementation

The construction of the MMOEM is projected to take 3 years from date of commencement. This will include the execution of an environmental impact assessment, site and infrastructure preparation, building construction, erecting and commissioning the plant and equipment. An initial 6-month period, commencing in Quarter 1, 2013 is allowed for the preparatory phase to secure the commitment of the strategic partners, OEMs and financial institutions and government departments. It is envisaged that the MMOEM will be operated by a strategic operational partner with an established track record in contract assembly of vehicles.

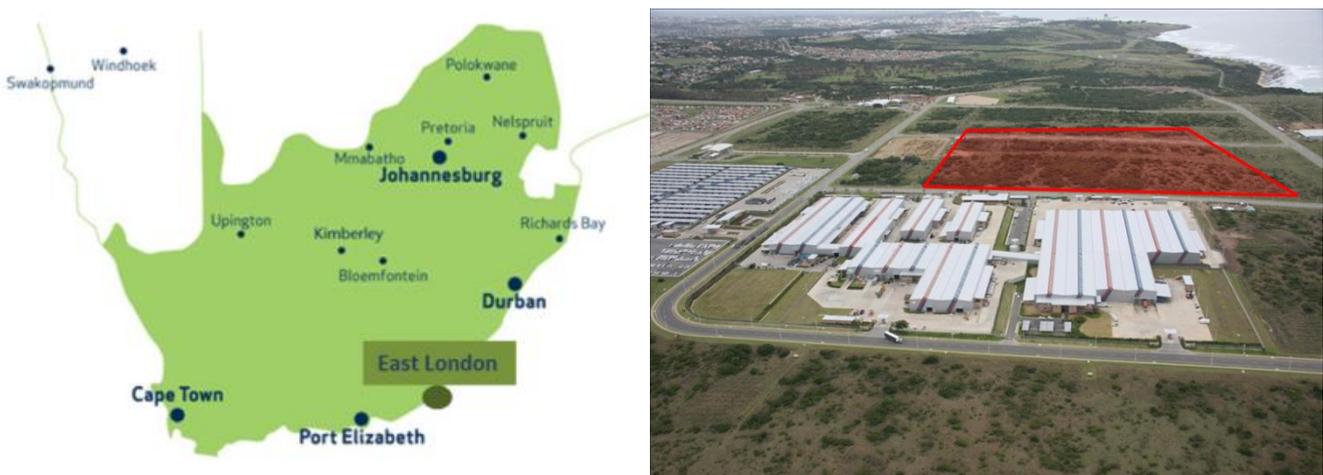
The installation of plant & equipment is projected to start towards the end of 2015 and will be completed by January 2017. Commissioning activities will commence in October 2016 with the last production trial ending on February 2017. Start of Production is scheduled for **3 March 2017**. A 6-month ramp-up period will follow after which final handover will be done in **September 2017**. The plant is projected to run at an annualised capacity of more than 50,000 units by March 2019 and up to 60,000 units by July 2018.

6 MMOEM Location

The EL IDZ is located in Buffalo City, the municipal area which also incorporates Bisho, the Eastern Cape Province’s capital and King William’s Town. The city is home to Mercedes Benz South Africa (MBSA) as well as various world-renowned auto component manufacturers, situated in the IDZ such as Johnson Controls, the Feltex Group, Molan Pino, TI Automotive, and MC Syncro. The long history of success by these multinationals in East London are a testimony to the commitment of the local workforce and government stakeholders of the region namely the Buffalo City Municipality, Transnet, the local Provincial Government departments and the ELIDZ. A number of new automotive suppliers will be locating in the ELIDZ from Quarter 2, 2013 as they prepare for the JIT supply to the MBSA plant for production in the new generation C-Class. Amongst these new companies is Friedrich Boysen, a developer and manufacturer of full exhaust systems, catalytic converters and exhaust manifolds.

The IDZ is logistically well positioned in close proximity to national road, rail and air networks as well as the highly efficient East London Port.

Figure 3: Geographic location of East London and aerial view of ASP and MMOEM location



Completed bulk infrastructure, an established Automotive Supplier Park (ASP) as well as shared services and logistics are some of the on-the-ground benefits of locating the MMOEM in EL IDZ.

7 Financing the MMOEM

7.1 Investment Structure

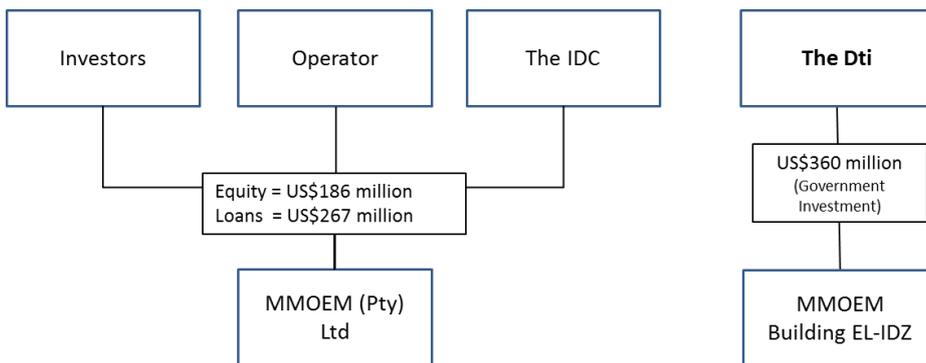
The MMOEM business case has been presented to the Department of Trade and Industry and the Industrial Development Corporation of SA Ltd. These two organisations represent the most significant supporters of industrial development in South Africa. The ELIDZ is in the final stages of negotiation with both these entities i.r.o the funding. The IDC has indicated that it can advance funding to the project subject to the participation of a strategic operating partner and the OEMs. The safeguarding of this key milestone will act as the trigger for the dti to fund the ELIDZ’s building which will accommodate the operation.

It is envisaged that the funding structure of the project will require 40% shareholders’ contribution and 60% external loan finance, while the building and infrastructure will be provided by the EL IDZ on a long term lease of 30 years.

Total CAPEX amount to approx.. **US\$453 million**

Total investment in **buildings** amount to approx.. **US\$360 million**

Figure 4: Proposed Investment Structure



7.2 Financial considerations

The financial viability of the proposed MMOEM project includes the following key financial deliverables:

- The IRR (real) for the project is 19% over the first 10 years. It improves to 22% over the projected life of the project, ie 21 years; and
- The investor returns is 23% real based on a 40% contribution by the shareholders/investors.

A sensitivity analysis performed on the financial model, indicates that price and volume variables drive the financial performance of the business and returns. Price sensitivity is 16% and volume sensitivity is 60%.

8 The Way forward

8.1 Invitation to participate

The MMOEM business case has been adopted as a viable project by the EL IDZ, the Dti and the IDC of SA Ltd. These organisations represent the key local financial supporters for the project and together have indicated a willingness to finance more than 67% of the total funding required for the project. The business case is now presented to OEMs and potential strategic partners, such as Valmet and Magna Steyr as well as potential local and international investors.

OEMs that are interested in participating in the MMOEM as a client and sharing the assembly with other OEMs are presented with the business case and financial model to give them the opportunity to verify the financial

benefit to their organisation. Most notably the impact of the assembly fee and duty rebates will have to be assessed in a detailed due diligence of the OEMs' specific models destined for the MMOEM.

It is also conceivable that a single OEM could take ownership of the project and benefit from the substantial government support that is made available by the South African government through its agents, the Dti, the IDC and the EL IDZ.

Investors are invited to participate in the project together with other strategic investment partners and an operating partner in a new company to be formed that will hold the equity of each investor and run the company as a contract assembler to assemble vehicles on behalf of the participating OEMs. The financial returns are considered above average and are made possible by the generous benefits offered by the South African government.

8.2 Timelines

The participating institutional organisations intend to establish the new company early in 2013 and commence engagement of strategic partners and client OEMs. Detailed design work will commence in July 2013 as well as the Environmental Impact Assessment. The site preparation and infrastructure establishment, erection and commissioning of the plant and equipment is projected to take 3 years. The planned start of production of the MMOEM is March 2017 and full production of at least 50,000 units will be achieved by March 2019 and full production capacity of 60,000 units by July 2019.

In order to meet these timelines, the participation of OEMs, investors and strategic partners will need to be confirmed by June 2013.