

NR-307 - The Gautrain rapid rail network - Part of the Climate Change Near-term Priority Transport Flagship Programme

South Africa

NAMA for Recognition

A Overview

A.1 Party

South Africa

A.2 Title of Mitigation Action 

The Gautrain rapid rail network – Part of the Climate Change Near-term Priority Transport Flagship Programme

A.3 Description of mitigation action

Transport is one of the fastest growing sources of greenhouse gas (GHG) emissions in South Africa. Road transport, encompassing private, freight and public transport vehicles, generates the majority of transport related emissions. The transport sector offers South Africa, significant GHG mitigation opportunities, reducing the demand for liquid fuels, emissions in the refining and other energy industries subsectors, as well p.

The Gautrain Rapid Rail Link is the first rapid rail network in Africa, a modern railway system links the cities of Johannesburg, Tshwane and Ekurhuleni and the OR Tambo International Airport. The Gautrain Project is one of the largest transportation projects in South Africa at approximately 80 kilometre (50 mile) of rail network (see <https://www.bombela.com/gautrain/> for more information).

The Gautrain is part of national efforts to establish an efficient, integrated and low-carbon transport system that promotes economic and social development. The Gautrain rapid rail network is a modal-shift based GHG mitigation measure which includes shifting passengers from road to public transport and rail systems (car-to-train and the car-to-bus), through the provision of a more efficient centrally managed mass transit system and significant investment in public transport infrastructure and systems. In addition to rail, Gautrain includes the bus-based Dedicated Feeder and Distribution Services (DFDS) to transport Gautrain passengers to the Gautrain stations along key Gautrain feeder corridors and routes. The DFDS comprises of a fleet of modern low-entrance and low-emission buses. The DFDS serves to complement urban Bus Rapid Transit Systems (BRT) BRT and other municipal based public transport services. The Gautrain also allows greater control over transit timing and thus congestion, when compared to road use.

Phase 1 of the Gautrain rapid rail project opened on 08 June 2010, Phase 2 on the 2nd of August 2011 and Phase 3 opened in 2012. The third phase of the project included the start of this route, the link between Park station in the Johannesburg Central Business District and the Rosebank station, which was opened for commercial service on the 7th of June 2012. The Gautrain system, as designed, was expected to have capacity to meet the projected demand of approximately 200 000 passenger trips per day in year 15 of operations, which is a substantial increase from the 2013 weekday patronage of 42 000 passenger trips per day. By 2018, more than 60 million passengers have been transported and have operated in excess of 380 000 individual train trips. Passenger demand for the Gautrain has exceeded projections, especially in the peak periods (see <https://www.bombela.com> for more information).

The Gautrain rapid rail network, is an essential part of the Climate Change Near-term Priority Flagship Programmes given effect by and detailed in, the South Africa's Climate Change Response Policy. The Gautrain rapid rail network is included in the suite of measures under the Climate Change Response Transport Flagship Programme specifically, which includes a broader rail recapitalisation programme, covering both passenger and freight rail system and infrastructure. The Climate Change Response Flagship Programmes are strategic, national-scale implementation programmes positioned to trigger a large-scale transition to a low carbon economy and a more climate resilient South Africa, and include a range measures implemented together, to reduce GHG emissions.

A.4 Sector

- ☐ Energy supply
 ☐ Residential and Commercial buildings
 ☐ Agriculture
 ☐ Waste management
 ☐ Other
- ☒ Transport and its Infrastructure
 ☐ Industry
 ☐ Forestry
-

A.5 Technology

- ☐ Bioenergy
 ☒ Energy Efficiency
 ☐ Hydropower
 ☐ Wind Energy
 ☐ Carbon Capture and Storage
 ☐ Land fill gas collection
 ☐ Other
- ☐ Cleaner fuels
 ☐ Geothermal
 ☐ Solar Energy
 ☐ Ocean Energy
 ☐ Low till / No till
-

A.6 Type of action

- ☐ National/ Sectoral goal
 ☒ Strategy
 ☒ National/Sectoral policy or program
 ☐ Other
- ☐ Project: Investment in machinery
 ☐ Project: Investment in infrastructure
 ☐ Project : other
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A.7 Greenhouse gases covered by the action

- ☒ CO2
 ☒ N2O
 ☐ PFCs
 ☐ Other
- ☐ CH4
 ☐ HFCs
 ☐ SF6
-

B National Implementing Entity

B.1.0 Name

National Department of Transport

B.1.1 Contact Person 1

Mr Themba Tenza

B.1.2 Address

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B.1.9	Contact Person 3	
B.1.10	Address	
B.1.11	Phone	
B.1.12	Email	
B.1.13	Comments	Implementing entity and partners • National Department of Transport – The Department of Transport (DoT) is responsible for regulation and coordination of transportation in South Africa, covering Public Transport, Rail Transportation, Civil Aviation, Maritime Transport and Road Transport. The DOT is the NAMA submitter. • National Department of Environmental Affairs – responsible department for coordinating the implementation of the National Climate Change Response Policy and providing advisory and technical support to the lead departments implementing Climate Change Flagship Programmes, the mitigation NAMAs. The DEA also coordinates the approval and submission of NAMAs to the Registry. • Gauteng Provincial Government – Gautrain project initiator • Gauteng Department of Roads and Transport – Managing Gautrain through the Gautrain Management Agency • Gautrain Management Agency (GMA) is an agency of the Gauteng Department of Roads and Transport and is tasked with overseeing the operations of the Gautrain • Bombela Concession Company – Responsible for the construction, maintenance and operation of the Gautrain. The company also partially financed phase 1 the Gautrain rapid rail system

[Add Additional Entity](#)

C Expected timeframe for the implementaion of the mitigation action

C.1	Number of years for completion	27
C.2	Expected start year of implementation	2010

D Currency

D.1	Used Currency	ZAR ▼
		Conversion to USD: 0

E Cost

E.1.1	Estimated full cost of preparation	95,760,000,000
		Conversion to USD: 10,356,911,117

E.1.2	Comments on estimated full cost of preparation	
E.2.1	Estimated full cost of implementation	 Conversion to USD: 0
E.2.2	Comments on estimated full cost of implementation	The costs of financing the design and implementation of the Phases 1 – 3 of the Gautrain have already been incurred. Remaining costs will relate to integration and expansion of the Gautrain beyond these initial three phases. A significant amount government funding has been used to subsidise the service, at USD 3,6 billion to date (see http://www.gauteng.gov.za/media/Annual%20Reports/2017-2018/Roads%20and%20transport%20Annual%20Report%202017-18.pdf for more information).
E.3.1	Estimated incremental cost of implementation	 Conversion to USD: 0
E.3.2	Comments on estimated incremental cost of implementation	The proposed design for the MRV approach of the Gautrain modal shift road to rail provides information on the type of indicators to be MRVed, the methods that can be used to MRV, the data needs and sources, assumptions and accuracy considerations. While this approach does draw upon existing data sources as much as possible, there will still be a cost associated with the implementation and the operation of the approach. There are significant ongoing costs associated with implementation and institutionalisation of monitoring and evaluation (M&E) of climate actions to assess both the GHG effects and non-GHG effects of climate measures, including the Gautrain. A large amount of data is required from various sources in order to assess these effects and requires the implementation and institutionalisation of data collection and management systems and capacity, to undertake M&E of climate actions on a regular basis in line with the evolving transparency framework for climate change. A team with strong skills in data manipulation, and transport systems and GHG impacts is needed. For implementation the team would need members with experience in customizing models.

F Estimated emission reductions

F.1	Amount 	4.4
F.2	Unit	MtCO2e 
F.3	Additional information (e.g. if available, information on the methodological approach followed)	The cumulative GHG emissions mitigated by the Gautrain Phases 1 – 3 for 2010-2037 is 4.4 MtCO2e(based on actual data and projections for 2015 – 2037). An MRV approach was designed for the Gautrain rapid rail network to facilitate the tracking of this NAMA, however, this NAMA measurement, reporting and verification (MRV) approach can be applied to other road to rail modal shifts. A series of tools was assessed to establish the the applicability of current tools and methods for assessing the GHG effects of the Gautrain. The assessment of the GHG effects of the Gautrain was based on actual data for the period 2010-2013, using data provided by the Bombela Concession Company and freely available data. The GHG effects of the ☐ ☐ ☐ ☐

G Other indicators

G.1	Other indicators of implementation
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H Other relevant information

H.1	Other relevant information including co-benefits for local sustainable development	This NAMA covers the modal shift of private passenger vehicles to the Gautrain electric rail directly, or through the feeder bus system. Numerous co-benefits may also be realized which are not be confined to the transport sector, such as stimulated economic growth, job creation and improved localized air quality. The spatial extents of many of the benefits are restricted to the Gautrain service corridor, which is itself an area of economic stimulus within the Gauteng Provincial Government. The NAMA is expected to be on-going, especially in light of Gautrain expansion and integration into national mass transit networks. The Gautrain system contributed R1.7-billion a year to provincial GDP and sustained an estimated , 6 000 jobs in Gauteng in 2013. The system also increased government
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revenue by around R400-million a year, with around R200-million received by lower-income households, mainly through wages and salaries. For every R1 spent on operating the Gautrain, the provincial economy gained another 96c, and the national economy 24c (see <https://www.bombela.com/socio-economic-development> for more information).

I Relevant National Policies strategies, plans and programmes and/or other mitigation action

- I.1 Relevant National Climate Change Response Policy, 2011
- National National Public Transport Strategy, 2007
- Policies Revised White Paper on National Transport Policy, 2018 (White Paper on National Transport Policy, 1996)

- I.2 Link to other NAMAs
- (none)
Sustainable Housing Programme
High Integration Program of Wind Energy
Implementation of a National Forestry and Climate Change Strategy, including the development and implementation of a Platform for the Generation and Trading of Forest Carbon Credits.

J Attachments

J	Attachments	Title Description	
		No records to display.	
J.1	Attachment description		
J.2	File	Choose File	No file chosen

Upload File