

# TRANSPORT-ENERGY DATABASE FOR ZAMBIA

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## INTRODUCTION

**Access to reliable transport and energy data is essential for the development of sustainable and efficient transport and energy policies for Zambia, and for achieving the country's green growth agenda.** Nearly all policy makers and practitioners in Zambia agree that adopting green strategies is key to meeting the country's greenhouse gas (GHG) emissions targets, and more importantly to achieving sustainable development. Despite this recognition, effective and lasting mechanisms for measuring and monitoring the impact of climate change particularly from sectors such as transport and energy, are often not in place. The lack of comparable and reliable data not only limits the development of policy interventions and investment planning, but also the monitoring and evaluation of various interventions.

**As a first step towards developing reliable transport and energy data, the Climate Compatible Growth (CCG) Programme, developed a comprehensive Transport-Energy Database (TED) for Zambia.** The Zambia TED is a comprehensive database of secondary transport and energy data for Zambia, covering technology, energy demand and policies relating to the transport-energy system in Zambia. The database was developed between December 2022 and March 2023, and was compiled using secondary data from online sources, directly from government ministries and agencies, and from reports. In addition, interviews were held with selected transport and energy sector stakeholders, to ascertain the general availability of transport-energy data in Zambia, assessing the usefulness of the TED for Zambian stakeholders, identifying the gaps and exploring options for regular updating of the database.

**This advisory report presents the broad findings of the assessment of the availability of transport and energy data in Zambia and the interviews held with**

**stakeholders.** Generally, the assessment reveals that there is a lot of support for the Zambia TED, both inside and outside of the energy and transport sectors, from government ministries and agencies, to private entities and academics. However, there is general acknowledgement that the bottlenecks to data collection and management, including weak legislation, the lack of coordination among institutions and the general lack of data collection and management tools, remain the biggest challenge to sustaining the TED. A number of stakeholders call for the establishment or identification of an institution to play a leading role in sustaining the TED.

## **THE DEMAND FOR RELIABLE TRANSPORT AND ENERGY DATA IS HIGH**

**Climate change is one of the biggest global challenges of this century and requires immediate action by relevant authorities, particularly those in developing countries like Zambia, where the effects are being felt the most.** The Zambian government like other governments around the world has made it clear that it intends to develop measures to try and mitigate the impacts of climate change. However, a good number of policy makers are quickly realising that developing measures to mitigate the impact of climate change and to monitor the progress of any interventions, needs to be based on the best available evidence. Regrettably, the conversation on the importance of good data in developing appropriate climate change mitigation and adaptation measures, is often overlooked.

**Although Zambia's contribution to global GHG emissions is small, the country is feeling the impacts of climate change.** When asked if the conversation on climate change was a relevant one for Zambia, most of the stakeholders interviewed agreed that even though Zambia's contribution to global greenhouse gas emissions is negligible, the country is suffering the impacts of climate change. For a country whose largest source of electricity is hydro power, the energy sector's contribution to GHG emissions is really small. Similarly, even though Zambia's motor vehicle fleet has been growing over the years, the transport sector's contribution to GHG emissions is still limited. Despite this, both sectors are being impacted by climate change. Changes in rainfall patterns and the general rise in temperatures have affected the country's supply of electricity in periods of drought. Then again, heavy rainfall and floods are impacting the transportation sector through their effects on transport infrastructure.

**Zambian stakeholders generally acknowledge the importance of robust and reliable data in understanding the broad impacts of climate change and for monitoring the green transition.** Zambia is party to the United Nations Framework Convention on Climate Change (UNFCCC) and is required to report on its efforts to both to address climate change and to adapt to its impacts. Although a number of systems and tools are available to all countries including Zambia to submit its national climate reports, the country still needs to generate its own data for measuring its GHG emissions and for tracking progress of its various interventions. It is in this area that the availability of reliable and robust data becomes very critical.

**The demand for transport and energy data is high among Zambian stakeholders.** Estimating the contribution of Zambia's economic sectors to GHG emissions requires a steady and consistent flow of information from these sectors. When there are significant data gaps, it becomes very difficult to measure GHG emissions, and this is true for the transport sector. Zambian stakeholders also agree that it is very difficult to measure emissions when data is not available. As such, there is a lot of interest in having reliable and accessible data including for the transport and energy sectors. Making data available holds potential for accelerating cuts to emissions and for devising effective mitigation measures.

#### **DATA IS GENERALLY AVAILABLE BUT IN SILOS**

**Zambia generally has data on transport and energy indicators, although most of the data is controlled by specific agencies and is isolated from other stakeholders in the two sectors.** Transport and energy sector stakeholders were asked to indicate what data is available across the five categories of indicators of interest, namely: transport-energy demand; vehicle fleet; electricity demand and supply; electricity system infrastructure; and liquid fuels demand and supply. Zambia currently has a good database of vehicle fleet data which is compiled and managed by the Road Transport and Safety Agency (RTSA). The Zambia Electricity Supply Corporation (ZESCO) also compiles data on electricity demand and supply, as well as electricity system infrastructure. Data on demand and supply of liquid fuels is largely managed by the Energy Regulation Board (ERB). These databases are largely updated regularly, but because they are managed by respective agencies, access for other industry stakeholders is quite limited.

***There is currently no known open data source for transport and energy data, in Zambia.*** The interviews with stakeholders from the transport and energy sectors revealed some isolated attempts by the Government to develop electronic databases for transport and energy statistics. For example, the assessment revealed that the Government through the electronic Zambia Transport Information System (e-ZamTIS) has made significant strides to develop a database for transport statistics. However, very little is known as to just how much progress has been made and whether this data is open source. Generally speaking, most of the stakeholders interviewed acknowledged that almost all government ministries and agencies collect and compile statistics related to their sectors through what is called the Information Management system. Although they also agreed that most of these databases are not easily accessible by other players in the sector unless formally requested.

**There is general agreement that data silos are a problem for policy making and monitoring.** Most stakeholders agreed that data silos hinder policymakers' operations and their ability to use data to make informed policy decisions and to monitor and evaluate the effectiveness of policies. Because different datasets are locked up in specific agencies or government departments, there is often the risk that decisions are not based on all the available data resulting in flawed decision making. Moreover, some stakeholders pointed to differences in data formats across institutions, because institutions each have their own way of collecting and compiling data. More importantly, having data in silos further reduces opportunities for data sharing and collaboration among different institutions in both the transport and energy sectors.

## **DATA COLLECTION AND MANAGEMENT IS NOT ALWAYS EASY**

**Collecting accurate and comprehensive data, in a cost-effective, appropriate, and timely manner is not always easy for Zambia transport and energy sector players.** The assessment of the views of stakeholders in the transport and energy sectors, revealed that budgets for data collection are often limited or non-existent in some cases. In most instances, the technocrats responsible for data collection and management often have to compete with other agency or department priorities for their projects. As a result, many government agencies and departments are forced into a cycle of short-term and usually expensive data collection surveys which are not sustainable. Usually, government ministries and agencies, engage consultants

for short periods of time to collect data and build models on their behalf, which they face difficulties in understanding themselves.

**The tools and skills for collecting information in an efficient and cost-effective manner are often not available.** Both the transportation and energy sectors have a lot of potential data sources. For example, CCTV cameras and tolling stations are potential sources of urban mobility data, however finding ways to efficiently and cost-effectively collect the data is difficult, and a lot of the stakeholders interviewed alluded to these difficulties. While a number of stakeholders argued that they have the capacity to collect data, they agreed that the necessary tools are not always available and even they are, can be too costly. As a result, many planners turn to inadequate and infrequently updated data sources like household surveys. For example, the last known transport modal split statistics for Zambia, were compiled by the Japanese International Cooperation Agency in 2010. Without updated data, planners are most times forced assume what transportation needs are.

**Silo mentality in government ministries, agencies and departments also creates challenges for comprehensive data collection and management.** One of the challenges for data collection and management that emerged from the interviews with stakeholders, is the mentality by some government ministries, agencies and departments to guard their data closely, and their reluctance to share it with other institutions. Despite the policy direction in the Seventh National Development Plan to break silo working in the public service, government institutions are still grappling with information sharing. When asked why it is generally difficult to share information particularly with the general public, the stakeholders interviewed cited security and regulatory concerns.

## **SUSTAINING THE TRANSPORT-ENERGY DATABASE FOR ZAMBIA**

As alluded to earlier, a big part of the development of the TED for Zambia, included exploring means for sustaining the database going forward. As such, stakeholders were asked to provide their views on how the country can ensure that the TED is regularly updated and sustained in the long-run. The assessment revealed the following alternative solutions for making this possible:

- I. **Establish dedicated institution to manage the database** – the Government should consider establishing an institution that is backed by some legal

framework to host and manage the database. Alternatively, a department or division can be created in already existing institutions such as the Zambia Statistics Agency, the Zambia Environmental Management Agency or the Zambia Chartered Institute of Logistics and Transport to manage the database;

- II. **Create legal framework to government the management of the database** – the Government needs to consider developing a legal framework that governs how the database will be managed, particularly in light of the need to improve data sharing among public institutions, and also between the government and the general public. To achieve this, the Government needs to develop a governance framework to provide guidance on how institutions can share data and how this data can be protected. Also, the Access to Information Bill can be reviewed to identify if it has any provisions around data sharing, in light of the challenges of collecting data from different organisations;
- III. **Integration of the Zambia TED with existing databases** – given that several public institutions have some form of database for critical statistics, the Zambia TED needs to be anchored with these existing databases to help with regular updating of the database
- IV. **Prioritise research and development** – each government institution responsible for generating and managing transport and energy data needs to prioritise research and development, to ensure that they keep abreast with developments in their respective sectors. Further, all policy makers need to be compelled to base their decisions on empirical evidence and data, so that they are forced to make use of initiatives such as the Zambia TED. This can be done through the establishment of a Statutory Instrument;
- V. **Capacity building** – it goes without saying that the practitioners responsible for generating and managing data in the various government institutions, need to be trained in modern data collection techniques and analysis. This will be particularly important for the officers in charge of hosting the database to ensure that it is functional and it is used;