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Financial and Regulatory Challenges in Infrastructure Parastatals and Sectors

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ABBREVIATIONS AND ACRONYMS

BBR	Bulawayo to Beitbridge railway
BCC	Bulawayo City Council
BLT	Build-lease-transfer
BOO	Build-own-operate
BOT	Build-operate-transfer
DDF	District Development Fund
EBITDA	Earnings before Interest, Taxes and Depreciation Allowances
GoZ	Government of Zimbabwe
HWA	Harare Water Authority
IBT	Increasing-block tariff.
ICT	Information and communication technologies
IMCPPP	Inter-Ministerial Committee on Public-Private Partnerships
MEPIP	Ministry of Economic Planning and Investment Promotion
MTP	Medium-Term Plan
NOCZIM	National Oil Company of Zimbabwe
NRZ	National Railways of Zimbabwe
ODPM	Office of the Deputy Prime Minister
POTRAZ	Postal and Telecommunications Regulatory Agency of Zimbabwe
PPP	Public-private partnership
PRA	Petroleum Regulatory Agency
PSP	Private sector participation
RBZ	Reserve Bank of Zimbabwe
RfP	Request for proposal
RfQ	Request for qualification
SERA	State Enterprises Restructuring Agency
SOE	State-owned enterprise
USF	Universal Service Fund
ZERC	Zimbabwe Electricity Regulatory Commission
ZINARA	Zimbabwe National Road Administration
ZESA	Zimbabwe Electricity Supply Authority
ZETDC	Zimbabwe Electricity Transmission and Distribution Company
ZINWA	Zimbabwe National Water Authority
ZPC	Zimbabwe Power Company

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Executive Summary

1. **This note analyzes the current fiscal and regulatory challenges faced by infrastructure public enterprises and sectors in Zimbabwe.** State-owned enterprises (better known as "parastatals") and local authorities play a pervasive role in rendering infrastructure services in Zimbabwe. A state monopoly (accompanied by very little or no private participation) exists in almost all infrastructure sectors, with the notable exception of cellular telecommunication. This note focuses on those parastatals that are critical for economic and social recovery namely, Zimbabwe Electricity Supply Authority (ZESA), National Oil Company of Zimbabwe (NOCZIM), Zimbabwe National Water Authority (ZINWA), Harare Water Authority (HWA), Bulawayo Water Authority (BWA), Netone, Telone, Zimbabwe National Road Administration (ZINARA), and National Railways Zimbabwe (NRZ).

2. **Each infrastructure parastatal and sector studied in this document presents different realities but also common problems.** The macroeconomic conditions during the last decade (economic slowdown followed by hyperinflation, limited access to foreign exchange, and pervasive price controls to contain inflation) affected all parastatals in a similar way. They led to an erosion of parastatals' resources for investment and hence a deterioration (and value) of physical assets. During inflationary environment, parastatals financed operational gaps with assistance from the Reserve Bank of Zimbabwe (RBZ), but the adoption of the multi-currency regime closed this means of financing.

3. **The Government took a positive step in 2009 by allowing parastatals to charge tariffs that are closer to economic costs but financial viability has not been achieved**. In many cases, tariffs may need to be revisited in order to allow cost recovery. In most cases low collection ratios have rendered parastatals unable to collect enough funds to meet their investment needs. Besides tariff revision, in the short-term collections rates need to come closer to normal levels for these public enterprises to become viable entities.

4. **For ensuring broader recovery over a longer-term, it is essential to create an enabling environment for private participation in infrastructure**. Along with pricing reforms mentioned above, regulatory reform in infrastructure sectors would be important to create right incentives for the private sector to invest. And finally, the government would need to put in place a transparent framework for public-private partnership that minimizes risks to the government while attracting private sector interest.

5. **Given the difficult political environment, this note attempts to suggest pragmatic short-to-medium-term solutions to problems, rather than first best solutions.** For example, it recommends efforts that could be made to avoid political interference, capture by interest groups, and the pursuit of multiple goals, even as tariff setting continues to take place under Ministerial regulation.

Electricity Sector

6. **The electricity sector faces a chronic shortage of supply**. Most of the generation, transmission, and distribution assets of the Zimbabwe Electricity Supply Authority

(ZESA) are in poor condition, and ZESA's financial condition is very fragile. ZESA generates 1100–1200 megawatts (MW) of effective supply to satisfy a nominal demand that averages 1500 MW and peaks to 2200 MW. Part of the reason is that output of the coal-fired Hwange power plant is extremely unstable, and dips as low as 50MW on occasions. Apart from improving generation capacity, there is scope for demand management. Average consumption of 400 kWh per month is high by developing country standards. ZESA is performing demand management programs that go from load shedding (it varies greatly but averages around 500MW) to recent practices related to changes in consumption patterns (replacement of high-consumption bulbs with low-consumption bulbs) and consumer education. Although the parastatal had a reasonable rate of earnings before interest, taxes and depreciation allowances (EBITDA) of 18 percent of sales and a profit in 2009 on accrual basis, it faces financial problems related to the low collection ratio (with most arrears coming from the private sector), high payroll, and high level of debts. Non-core activities at ZESA Enterprises suffered a US$ 5.1 million loss in 2009.

7. **A legal framework is in place to guide the provision and control of services and infrastructure; however, the members of the Zimbabwe Electricity Regulatory Commission (ZERC) have not been appointed.** Moreover, although the regulatory provisions state that the ZERC must be independent, it is subject to interference by the Minister of Energy and Power Development, and there is an overlap between the regulatory roles of ZERC and the Minister. Notably, ZERC has antitrust powers, and some provisions for licensing may impose risks on private operators (for example, the primary distributor has default obligations that induce the risk of cream-skimming by traders or other distributors; the regulator is given excessive discretion). Electricity tariffs are regulated under a cost plus principle. Currently, under the tariff schedule, marginal rates increase with volumes; this design aims to discourage consumption. However, the average tariff is low, both compared to domestic estimates of costs and the tariffs in neighbor countries.

Short-term recommendations

a. Increase and rebalance prices and tariffs to reflect efficient system costs. Look at opportunity costs, and arbitraging between the cost of domestic generation and imports, whenever feasible.

b. Ensure that price increases and rebalancing are accompanied by policies oriented to enhance inclusion (such as a good design of lifeline tariffs for low-income users) and consumer education to rationalize consumption, avoiding a negative effect on ZESA's financial state. This reform should be preceded by tariff and social tariff studies.

c. Improve collection ratios by resolving billing disputes and complete the upgrade of the billing system, eventually taking a determined stance on disconnections, and Government clearing its arrears with ZESA.

d. Apply a skills-enhancement program for ZESA's Commercial Department staff;

e. Follow the procedures to appoint ZERC board members and institutionalize the regulatory agency. Provide adequate budget and staff. Better delineate the regulatory roles of the Minister and ZERC to minimize conflict. Release ZERC from direct obligations related to antitrust, which should be taken up by Competition Commission. Revise how regulation rules are implemented in practice.

f. Divest non-core assets such as PowerTel (eventually, keeping the division that provides inputs to the Zimbabwe Power Company, ZPC, and the Zimbabwe Electricity Transmission and Distribution Company, ZETDC).

Medium-term recommendations

g. Instrument regulations to define the operation rules in the generation segment (dispatch, pricing) before the private sector enters the sector.

h. Revise licensing provisions that create risks to investors in generation, transmission, and distribution.

i. Assess the possibility of privatizing or restructuring generation plants. Restructure transmission and distribution to allow for private sector participation.

j. Assess the option of a vertical split up of ZETDC between transmission and distribution, and a regional split up of distribution: for example, between Harare, Bulawayo, and the rest of the country.

Petroleum Sector

8. **For years, the National Oil Company of Zimbabwe (NOCZIM) was the only provider of petroleum products in Zimbabwe, but it has now begun to compete on an equal footing with private companies both in the retail and wholesale markets.** The prices of imported petroleum products are regulated with a cost-plus formula. Most formal imports into Zimbabwe flow through a pipeline, which is the cheapest transport alternative— although 20 percent of fuels is coming to the country in trucks. NOCZIM signed a take-or-pay contract with the pipeline operator for 67 million liters per month. This has become burdensome because imports averaged only 25 million liters a month in 2009, resulting in a primary deficit of US$18 million. NOCZIM does not have collection problems because most of its sales are on a cash basis, but holds significant stranded debts with foreign suppliers.

9. **The levies on petroleum products contain some asymmetries that create inefficiencies.** The Road Levy is charged to all consumers, rather than only to those that use the road. Road charges are biased against petrol. The carbon tax and import levies to diesel consumption are currently lower than those applied to petrol.

10. **The Petroleum Act creates an independent agency (the Petroleum Regulatory Agency, PRA) with regulatory and antitrust powers, but it has not been created yet.** The legal framework (Petroleum Act) guides the provision and control of services and infrastructure. However, there is room for interference by Minister of Energy and Power Development. Moreover, the Petroleum Regulatory Agency (PRA) has not been created yet.

Short-term recommendations

a. Revise the principles of levies and fees for petroleum products.

b. Create the PRA, respecting independence and separating the regulatory and competition roles in the market.

Medium term-recommendation

c. In the medium term, change the actual cost-plus pricing mechanism to market-based formulas or deregulation.

Railways and Roads Sectors

11. **The railways sector faces severe deterioration—mainly in the technical, operational, and financial performance of the National Railways of Zimbabwe (NRZ)—and has significant operation and investment needs.** The system was designed to transport 18 million tons a year, yet the maximum transport capacity is estimated at 5.3 million tons a year—and NRZ transported only 2.7 million tons in 2009. The parastatal had negative EBITDA in 2009 on an accrual basis. Payroll costs are very high because of overstaffing. Unlike other infrastructure sectors, the public sector represents an important share of NRZ credits. Getting more freight, which represents about 85 percent of NRZ revenues, may help the company reduce its deficit. However, the parastatal competes with trucks, which charge a higher tariff per ton-km but provide faster service given NRZ infrastructure problems. Better coordination of intermodal transportation between railways and trucks could solve this problem. Passengers represent only 15 percent of NRZ revenues.

12. **The railways regulation is a combination of Ministerial tasks and NRZ's specific legislation.** Although tariffs are not formally regulated, NRZ must report to the Minister of Transport and Infrastructural Development for approval. NRZ self-regulates on control and safety matters, while the Minister makes additional regulations to enforce the legislation.

13. **Maintenance and rehabilitation of the road network is lacking, and infrastructure is deteriorated.** The Roads Bill mandates the Zimbabwe National Road Administration (ZINARA) to manage a Road Fund created to tackle these problems, but it has faced problems of inadequate funding over the last few years. In particular, the current transit fees and fuel levies are not enough to cover the full cost of road transport (paying for infrastructure, congestion and the environmental impact of consuming diesel), while some problems related to collection (commissions, delays and leakages) should be examined in detail. This may involve a study related to the cost of rendering services by alternative agencies.

Short-term recommendations

a. Assess the coordination problems of intermodal transportation, which may help augment NRZ's profitability.
b. Evaluate an increase and rebalance of road tolls and levies (taking into consideration regional trade Agreements and other related protocols).
c. Review and enhance ZINARA's capacity to perform its functions.

Medium-term recommendations

d. Define a regulatory framework for railways that delimits roles between the Minister, the regulatory agency, and operators (including NRZ).
e. Assess new formats for the railways sector, allowing for private sector participation in the operational aspects. For example, NRZ could specialize in tracks and lease the lines to private operators in return for a fee.
f. Define a regulatory framework in the road sector, with ZINARA taking the role for the moment.
g. In both sectors, the modification of the legal framework should be accompanied with the creation of capacity to manage the process and the safeguard of interests of all stake-holders.
h. Consider using build-own-transfer (BOT) contracts as an alternative to solving the critical conditions of roads.

i. Assess the value of advancing the North-South highway (eventually splitting up infrastructure improvements into an optimal number of parts).

Water and Sanitation Sector

14. **In the water and sanitation sector, the local authorities and the Zimbabwe National Water Authority (ZINWA) face constraints in supplying clear water because of a lack of resources for pumping, repairs, and treatment.** Harare Water Authority (HWA) also faces constraints on raw water (which is also heavily polluted). The case of Harare reflects a common problem in the country: out of a notional demand of about 1200 mega liters/day, HWA can provide only 350 megaliters/day due to breakdowns. There are two plants having 90 and 614 megaliters/day respectively (technical losses in the distribution system are estimated at 40 percent). HWA is implementing demand and supply management programs that go from rationing to improved metering, leak detection, pressure adjustment, and consumer education. The Bulawayo City Council faces constraints on water sources and hence has more incentives to reduce leakages.

15. **Political decisions could be stimulating non-payments for clear water services.** From the financial point of view, both HWA and ZINWA have comfortable values of EBITDA (48 percent and 22 percent of sales, respectively). However, on a cash basis, both authorities collect only enough money to barely meet their payroll costs. A significant share of debtors corresponds to private users (for example, agricultural users that do not pay for the service, citing low production levels). Debt is in part encouraged by the Minister of Water Resources Development and Management's decision not to authorize disconnections.

16. **Regulation of the sector is dispersed in various acts.** There are some proposals to create an independent Water and Sanitation Regulation Commission, but a rigorous analysis on centralization or decentralization of services is still pending. Brain drain is a major issue in the sector, with important staff gaps in the Minister of Water Resources Development and Management in regulatory aspects. Water and sanitation are regulated under cost plus principles, and reflect an increasing-block pattern oriented to discourage consumption. Tariff levels seem adequate compared to cost provisions, but the budgets prepared by Authorities do not include reasonable expansion costs. It is not surprising then that HWA tariff levels are lower than regional averages.

Short-term recommendations

a. Increase collection ratios, allowing for disconnection. In addition, review the level of tariffs to assess the coverage of expansion costs (as it is the case of Harare Water Authority).

b. Invest to solve supply bottlenecks.

c. Fill critical vacancies in the Minister of Water Resources Development in charge of regulating the sector.

Medium-term recommendations

d. Delineate a homogeneous regulatory framework for water and sanitation, delimiting roles between the Ministries, regulatory agency, and operators.

e. Use social schemes along with cost-reflective tariffs.

f. Evaluate the option of management contracts that entail less risk to private parties.

Telecommunications Sector

17. **The information and communication technology (ICT) sector has been the most dynamic of all infrastructure sectors in Zimbabwe, but the recent macroeconomic conditions have contributed to a slowdown in the process of technology adoption by parastatals and private operators.** Now, in parallel with the expected economic recovery, the market participants are planning an aggressive expansion of their customer base and also an investment in fiber optic backbone that may entail some duplication. The state monopoly in fixed telephone lines, TelOne, had and EBITDA of 60 percent of sales in 2009 on an accrual basis, which is high even for capital-intensive telecom companies. The parastatal for the cell network, NetOne, had an EBITDA of 35 percent on an accrual basis. However, the parastatals face collection problems and have been assessing tariff alternatives to induce customers to pay ex ante for the service. As in the electricity sector, most arrears have accumulated in the private sector.

18. **The legal framework guides the provision and control of services and infrastructure, and the Postal and Telecommunications Regulatory Agency of Zimbabwe (POTRAZ) is working better than other agencies.** POTRAZ is also less subject to interference than some other regulatory agencies in Zimbabwe. However, the legal framework seems to be outdated to allow for integral participation in the ICT sector (communications, TV, and Internet). ICT tariffs are regulated following a fully-distributed-cost principle based on a cost plus rule. Although it is difficult to compare telecommunications rates, they do not seem misaligned with regional averages. Finally, there seems to be room for implementing rights to use the radio spectrum in Zimbabwe.

Short-term recommendations

a. Ensure a tariff review and consumer education

b. Improve collections ratios by allowing disconnection.

Medium-term recommendations

c. Amend the regulatory framework that covers service provision, access, and interconnection accordingly. Move toward a universal license for all services (telephone, Internet, and TV).

d. Assess a way forward for parastatals in this sector, which may involve a privatization or strategic partnership. In particular, evaluate whether to have NetOne and TelOne as separate companies or merge them.

e. Look for adequate ways to reach the submarine cable. This can be done by the private sector (EcoNet is already investing) or promoted by the Government through parastatals or through a public-private partnership (PPP) project. Care should be taken to not hamper private incentives to invest.

f. Assess the rationale and value of starting to charge for the right to use the radio spectrum.

Public-Private Partnerships

19. **A proposal to return to first- or second-best practices in Zimbabwe seems far from feasible.** Recommendations should take into account the trade-off between first- or second-best policies and the poor condition of infrastructure, which is in urgent need of large and fast investments.

20. **The condition of infrastructure in Zimbabwe is curtailing the ability of the private sector to assist in the country's economic recovery.** A natural step is to work on encouraging the private sector to take part of the responsibility of investing in infrastructure. Ideally, parastatals should be able to raise capital through listing on the Zimbabwe Stock Exchange, or through the issuance of bonds. But economic and political problems may be a barrier to private participation at "normal" rates of return. However, this should not be an excuse to delay significant reforms to enable the Government to help meet short-term infrastructure and capacity-problems needs. The private sector is unlikely to participate (directly or indirectly) unless investors perceive a positive investment climate.
21. **Public-private partnerships (PPPs) are not new to Zimbabwe.** After several years of crisis and hyperinflation, the Government has taken up the option of private participation. Some PPP projects have been studied, but could not be executed as of yet.
22. **Several Government agencies (Office of the Prime Minister, Minister of Finance, Minister of Economic Planning and Investment Promotion) claim competence in the design of a PPP strategy.** The PPP Guidelines have been approved but have several flaws that should be revised, and currently they do not cover all infrastructure sectors.

Recommendations

a. Revise the PPP Guidelines. In particular: (i) create a specialized PPP Unit, specifying its location (recommended in the Ministry of Finance, since it can provide assistance in identifying and securing strategic partners, as well as assist parastatals to raise finance from the local capital markets), and its interaction with sector-specific units; (ii) standardize procedures in the PPP guidelines to achieve fair, transparent, and competitive selection of providers; (iii) homogenize and align principles among line ministries to prepare a coordinated action plan regarding PPP; and (iv) increase the scope of the guidelines beyond procurement.
b. Ensure that proper regulation is in place before a process of PPP occurs. It is too costly to set up proper regulation once the operator is already in.

I. Introduction

1. **Zimbabwe has nearly 76 public enterprises or "parastatals**". Of these, 18 enterprises are 100 percent owned by the Government, and another 14 have a major Government stake through shares hold by the Reserve Bank of Zimbabwe (RBZ) (see Appendix A). In addition, there are local authorities that are fully owned by the Government of Zimbabwe but operate under specific Acts.
2. **The role of infrastructure public firms in Zimbabwe is pervasive.** There is a state monopoly in the supply of electricity, both in generation (with the exception of self or co-generation by private firms, with virtually no net supply to the grid) and in transmission and distribution. Railways are operated by National Railways of Zimbabwe (NRZ) (with the exception of the Bulawayo-Beitbridge line). TelOne is a state monopoly in fixed telephone lines. NetOne has about a 20 percent market share in the dynamic cell phone business. The Zimbabwe National Water Authority (ZINWA) is a public monopoly in the provision of raw water and the provision of clear water in small towns and rural areas. Public entities under local authorities, such as the Harare Water Authority (HWA) and Bulawayo Water Authority are responsible for part of the local supply of clear water and sewage.
3. **The macroeconomic conditions during the last decade and the decision to prioritize current expenditures led to a physical deterioration (and value) of infrastructure.** Moreover, the lack of access to foreign exchange had a significant impact on the provision of basic services (e.g., electricity, water). Parastatals received some assistance from the RBZ, but the adoption of the multi-currency regime closed this means of financing. In spite of the decision by the Government of Zimbabwe (GoZ) to allow parastatals to charge tariffs that are closer to economic costs, after the introduction of multi-currencies, a new problem of low collection ratios emerged, implying that the public firms have not been able to collect enough funds to meet their investment needs, so as to improve the dismal conditions of key infrastructure. This has harmed the ability of the private sector to consolidate the economic recovery of the country. Thus a natural step is to work on encouraging the private sector to take part of the responsibility of investing in infrastructure. However, before taking steps toward privatization or other types of private sector participation, a necessary condition is the review of the legal and regulatory framework for service provision to create the right incentives for private investment.
4. **This document covers the situation in six major infrastructure sectors: electricity, petroleum, railways, roads, water and sanitation, and telecommunication.** Each sector studied in this document presents different realities and common problems. A brief overview of each of them follows: [1]
5. ***Electricity***. The electricity sector in Zimbabwe is regulated by the Zimbabwe Electricity Regulatory Commission (ZERC), which became operational in 2005 under the Electricity Act, and is under the direct control of the Minister of Energy and Power Development. The Rural Electrification Agency is responsible for rural electrification. Generation, transmission, and distribution of electricity are the main responsibilities of the vertically integrated parastatal, the Zimbabwe Electricity Supply Authority (ZESA). Currently, ZESA Holdings Ltd includes the Zimbabwe

[1] A review of the evolution of each parastatal can be found in several World Bank sector-specific documents (2008a, b; 2009a, b, c, d, e, f) and UNDP (2009).

Power Company (ZPC), the Zimbabwe Electricity Transmission and Distribution Company (ZETDC), and other non-core assets (such as PowerTel and ZESA Enterprises). Generation capacity is a mix of hydroelectric and coal-based thermal plants, with some minor participation of small generators. The current situation of the situation of the sector is summarized in three dimensions: (i) there is a chronic shortage of electricity; (ii) most of ZESA's generation, transmission, and distribution assets are in poor condition (spares and necessary repairs were deferred and generation, transmission and distribution facilities fell in disrepair, which was exacerbated by vandalism and theft); and (iii) the financial condition of the sector is very fragile.

6. ***Petroleum***. Although the petroleum products sector is regulated by the Petroleum Act, the Petroleum Regulatory Agency (PRA) has not been created yet. For many years, the parastatal National Oil Company of Zimbabwe (NOCZIM) was responsible for providing petroleum products to the Zimbabwean economy. Recently, it has begun to compete on an equal footing with private companies, both in the retail and wholesale markets. NOCZIM has a 50 percent stake in one of the two pipelines that are the cheapest way to import fuel into most of Zimbabwe.
7. ***Railways***. The railways sector is under the direct control of the Minister of Transport and Infrastructural Development and is operated by a parastatal, the National Railways of Zimbabwe (NRZ). The company renders standard services and also has a public service obligation (PSO) on behalf of the Government. Part of the network, the Bulawayo to Beitbridge Railway (BBR), which began in 1999, is operated by the private company New Limpopo Projects Investments. Some private operators also use the rail infrastructure to operate business. This sector has deteriorated, mainly in NRZ's technical, operational, and financial performance, due to the economic situation and also to the lack of compensation of the public service obligation by the GoZ—which implies significant operation and investment needs.
8. ***Roads***. Different Government departments manage the road network of Zimbabwe. The Department of Roads in the Minister of Transport and Infrastructural Development is responsible for primary and secondary roads. The District Development Fund (DDF) and Rural District Councils are responsible for the tertiary roads. Urban Councils, under the Minister of Local Government, Urban and Rural Development, are responsible for urban roads. Inadequate funding to road authorities over the last few years has led to a lack of maintenance and rehabilitation, and hence deterioration of road infrastructure. The Roads Bill (2001) instituted the Road Fund, managed by the state agency Zimbabwe National Road Administration (ZINARA), with the purpose of increasing funds for maintenance and expansion (tolls, licenses, fuel levies). However, collection of road user charges has been below levels initially projected and died up in 2008 with hyperinflation, but started to recover in 2009.
9. ***Water and Sanitation***. Regulation of this sector is dispersed in different acts. The provision of both raw and clear water and sanitation was handed to the Zimbabwe National Water Authority (ZINWA) in 2006, but handed back to local authorities (such as the Harare Water Authority and the Bulawayo Water Authority) at the beginning of 2009. ZINWA holds residual obligations on raw water (to farmers and towns) and clear water (to end-users in small towns, rural and growth areas). During the last decade, access to improved water resources has been declining, together with a lack of management of water resources and a deterioration of quality of water due to poor sewage treatment and conveyance. This poor performance is

accompanied by lack of regulatory resources and an inconsistent water policy by the Government.

10. ***Telecommunications***. The telecommunications sector has been the most dynamic of all infrastructure sectors in the Zimbabwean economy. The Government opened it to liberalization and competition in a context of dramatic technological changes worldwide during the last 15 years. The parastatal TelOne operates the fixed line network, and the parastatal NetOne competes with EconNet and TeleCel in the cellular network. All of them are regulated by Postal and Telecommunications Regulatory Agency of Zimbabwe (POTRAZ). The recent macroeconomic crisis contributed to slow down the process of technology adoption for both TelOne (with obsolete fixed telecommunications technology) and cellular phone operators.

II. Financial and Operational Challenges of Parastatals

Overview

11. **During the years of hyperinflation, parastatals were embedded in a vicious circle of distortions.** Perhaps the most challenging problem was the acute shortage of foreign exchange on the official market. RBZ's foreign exchange allocation to import fuel and electricity was far below the requirements of NOCZIM and ZESA, forcing them to cut back on their operations. ZESA was not able to satisfy domestic demand with imports. The resulting load shedding and power cuts seriously curtailed commercial activities in Zimbabwe. Similarly, NOCZIM was able to import only a fraction of domestic demand for fuel. The resulting shortage of fuel in the official market led to the development of an active parallel market. Parastatals also failed to import spare parts and services. As a result, critical maintenance and rehabilitation of infrastructure have been neglected for many years. Moreover, ZESA, NOCZIM, and TelOne entered into arrears with external creditors and suppliers.

12. **Parastatals faced serious viability problems, as they operated at controlled non-economic prices and suffered from brain drain.** Their unsustainable cash flow position resulted in the accumulation of domestic payables to and receivables from other parastatals, the Central Government, and private sector suppliers. Cross-arrears in the public sector caused serious payments gridlock and aggravated the liquidity problem of parastatals. With the deteriorating financial position, parastatals could not access commercial financing through domestic banks, which had traditionally been their main financier. To avoid the total disappearance of goods and collapse of services provided by parastatals, the RBZ stepped in out of necessity to offer credits and foreign exchange at extremely favorable rates (sometime even at zero cost). [2] Some inputs were also provided at below market prices.

13. **With the decision to adopt a multi-currency regime, the GoZ was able to stop hyperinflation, and parastatals could resume operations in a stable economic environment.** However, this much-needed shock therapy created some problems for parastatals: a) Working capital became scarce because they did not have foreign savings of their own and savings in domestic currency were wiped out by inflation.

[2] This was one source for the enormous quasi-fiscal deficit that was behind hyperinflation. For example, from 2003 to2007, parastatals accounted for about 20 percent of the quasi-fiscal deficit (see Artana, 2008).

b) They needed to adapt their billing systems to the new currency, which in some utilities like ZESA created some temporary problems. c) Like all other suppliers to the domestic market, they suffered from the deep recession and its effect on consumers. d) For political reasons, they also suffered some specific restrictions, such as the inability to cut off customers that did not pay their bills on time. e) They continue suffering from brain drain, in particular in high positions. f) Their core assets are in serious need of maintenance after a long period of underinvestment. g) Low collections have been used to pay for payrolls and part of the operational costs, but only a small amount of money is left for maintenance or new investments. h) Vandalism and theft have reduced the available supply even further.

14. **The stabilization also created some opportunities for the parastatals.** For instance: a) Many of them had no chance to sell on a cash basis during the crisis due to a monthly billing system, and revenues eroded in real terms at the time of payment; these firms were able to gain from stabilization.[3] b) In the absence of quasi-fiscal financing for their deficits and the inability of the Government to provide subsidies, firms were allowed to charge tariffs that did not drain with inflation (although with some delay during the first semester of 2009).[4] c) Those firms with some exports (like ZESA) were able to get access to foreign exchange to pay for their imported inputs, which gave them some flexibility compared to the situation when foreign exchange had to be submitted to the RBZ and firms had to apply to the central bank for their payments abroad.

15. **In broad terms, parastatals no longer have a problem of artificial low tariffs, as tariffs climbed closer to regional averages.** However, as a consequence of the economic hardships and the political decision not to allow customers in arrears to be cut off, the problem shifted to one of low collection of bills and low volumes sold. With poor collections on a cash-flow basis, some parastatals increased their floating debt by not paying their suppliers of inputs and their taxes on time.[5] This added to the existing problem of default on external debt that some firms like ZESA and TelOne have carried for years.

16. **Although there are cross-arrears among public agencies, most arrears are held by private parties (both families and business).**[6] Only in the case of NRZ are public debtors important (36 percent of the total).[7] For the other parastatals analyzed in this report, most of trade debtors are private agents (ranging from 83 percent in the case of ZESA to 97 percent in HWA).[8] Similarly, most of their debt is owed to the private sector (see Table 1 and Appendix B for financial statements of parastatals and local authorities). In any case, under this situation of the Government

[3] This is similar to the Tanzi effect for tax revenues. When there is a sharp reduction in the inflation rate, the purchasing power of collected taxes increases because the financial effect of the collection lag is reduced substantially.

[4] The GoZ also helped reduce the final impact of the tariff increase by eliminating some levies. This was the case for electricity, with the elimination of the 5 percent development levy.

[5] Low collections are more important for those parastatals that send monthly bills to the consumers than those that can sell on a cash basis (NOCZIM, and NRZ and NetOne, to some extent).

[6] A long period of hyperinflation has made the comparative analysis of financial statements useless. Therefore, most of the analysis in this report will be based on data since February 2009.

[7] NOCZIM sells on a cash basis, but has a relatively small credit of US$2 million owed by the Government.

[8] The financial statements show all trade receivables and some of them are current. The share of public agencies in total debt was similar for Parastatals that provided information on current debtors and debtors in arrears.

owing money to parastatals and parastatals owing money to the Government (taxes) or to other parastatals, it would advisable to net off all credits, subject to the restrictions from the Public Finance Management Act.

Table 1. Current Assets and Liabilities of Selected Parastatals, December 2009.

	ZESA as of Dec 31	ZINWA as of Dec 31	NRZ as of Dec 31	NetOne as of Dec 31	TelOne as of Dec 31	NOCZIM as of Dec 31 3/	Harare Water Authority as of Dec 31
Non-current							
1. Trade Debtors	291.1	37.9	17.3	47.7	209.9	2.2	49.3
of which government	12.9	8.9		3.1	21.1	2.2	0.5
of which parastatals	19.0	1.2	5.8	2.0			
of which local authorities	16.4	3.5	0.4				0.3
of which other	242.8	24.3	11.1				48.5
2. Provisions for bad debt	81.5	11		6.5	2.2	2.0	
3. Other debtors & cash	72.3	1.6	0.2	14.3	16.9	18.9	
4. Stores & materials	96.2	3.3	6.5	4.6	33.3	70.2	
5. Total current assets (1 - 2 + 3 + 4)	378.1	31.8	24.0	60.1	257.9	89.4	
6. Trade Creditors	244.9	3.6	15.5	35.4	231.6	46.0	
of which imports	102.3						
7. Other major creditors	203.5	16.7		13.0		19.5	12.5
of which parastatals 1/	13.2	1.6	9.1	2.4			8.2
of which RBZ	105.2						
of which Government	1.9	6.2	0.7	5.5		19.5	3.7
8. Total current liabilities (6 + 7)	448.4	20.3	15.5	48.5	231.6	65.5	
9. Current portion of loans	388.5		7.1	29.0	94.4		
10. Long term loans	41.8	5.9	5.0		112.7	92.5	
of which Government		0.8					
11. Total liabilities (8 + 9 + 10)	878.7	26.2	27.7	77.5	438.7	158.0	
12. Net current assets (5 - 8 - 9)	-458.8	11.5	1.3	-17.4	-68.1	23.9	
Total State Trade Debtors	48.3	13.6	6.2	5.1	21.1	2.2	0.8
Total State Trade debtors/Total Debtors 2	17%	36%	36%	11%	10%	100%	2%
Total State Creditors	120.3	8.6	9.8	7.9	na	19.5	11.8
Net position with Rest of State	-72.0	5.0	-3.6	-2.8	na	-17.3	-11.1
Sales	471.1	47.7	62.2	100.1	263.3	161.3	91.2
Trade Debtors/Sales	62%	80%	28%	48%	80%	1%	54%
Average Collection Ratio (days)	222	286	100	171	287	5	195

1/ For ZESA composition of other major creditors estimated using the shares as of September 2009.

2/ For Zinwa the ratio is 27% if the debt of local authorities is excluded

3/ NOCZIM sells on a cash basis. Outstanding debt corresponds to Governments departments in the first quarter of 2009.

Source: World Bank and Parastatals Financial Statements

17. **Although collection rates are still low, since the end of 2009 they have improved for most parastatals.** Collection of bills reached about 50 percent of the bills in December 2009 (see Table 2), although it is still way below normal rates in most countries. Collection of rates is more problematic in Zimbabwe given the low salaries of most of the population, compared to the relatively high average bills of the key utilities.[9]

[9] Although it is difficult to estimate the disposable income for an average family in Zimbabwe because of the likely underreporting of the GDP, different estimates for remittances (which in any case are substantial), and the large extent of the informal economy, public sector workers and low-skilled private sector workers are being paid wages of around US$ 150 per month, which looks low compared to the average utilities' bills: US$ 13 for water, US$ 28 for electricity and US$ 50 for a fixed telephone line. In the latter case, the average bill is also influenced by the high consumption of minutes given the "zero price" that existed until February 2009 because hyperinflation eroded the value of the bills, and the low collection ratio since then.

Table 2. Financial Information for Selected Parastatals, 2009

	ZESA	ZINWA	NRZ	NOCZIM	NETONE	TELONE	Harare Water Authority 2/
Revenues	471,117,789	47,652,413	62,177,360	161,274,731	100,095,804	263,341,703	91,223,524
of which Core Business	94.9%	94.2%	91.1%	99.3%	98.3%	99.6%	99.9%
Primary Expenditures (excluding depreciation but including provision for bad debts)	386,103,669	36,505,378	72,454,604	179,345,643	64,451,844	104,052,426	43,656,110
of which payroll costs	23.4%	29.7%	64.6%	4.0%	14.9%	25.2%	37.1%
EBITDA / Total Revenues YTD	18.0%	22.3%	Negative	Negative	35.6%	60.5%	47.8%
Collection ratios (average last 3 months)		46%		n.a.	44%	45%	48.0%
TOTAL Liabilities	878,700,000	26,179,455	27,657,128	158,038,788	84,003,188	438,700,000	
Loans + Current liabilities - Current assets	419,900,000	37,700,000	28,991,874	181,850,000	60,099,789	370,600,000	
No. of employees		2200	8,646	525	287		
Output 1/	7863	1,109,402	2,700	297212	420	1299	

Diesel + Petrol for Noczim, and million of minutes for NetOne and TelOne. In all cases is 2009 YTD.

2/ February-December 2009 annualized

Source: World Bank and financial statements and management reports of each parastatal.

18. **It seems that the low collection ratio is more pervasive than what can be explained by cases of inability to pay or problems in the billing system (which generated erroneous bills, especially during the first half of 2009).** First, there is no evidence that in all cases prices are above competitive prices (or above the prices that will result from a well-designed regulatory framework). Second, most of the poor are probably not receiving any of these services (in particular electricity and fixed telephone lines), and there are lifeline tariffs for low consumptions that reduce the average bills. Rather, the problem seems to be that prices, adjusted by quality, are very high. In many cases, arrears accrued because consumers were questioning the sharp increase in the average tariff they had to pay compared with the virtually-zero price that existed before the multi-currency system was adopted in February 2009. But the vicious circle of low prices–low quality of service needs to be stopped at some time. There is little chance of getting normal recovery ratios if customers do not face a risk of suspension of service. Given that for most businesses the cost of the services provided by parastatals is a small fraction of their total cost, there is no logic in encouraging businesses to enter into arrears.

19. **Besides improving drastically collections ratios, parastatals face another challenge: the recovery of volumes sold.** In those cases when parastatals such as NRZ and NOCZIM have spare capacity, this might be a win-win situation. In other cases, when there is a supply shortage, like the one ZESA faces, an economic rebound that increases the demand may add more problems.

20. **Vandalism and theft have been problems for some parastatals in recent years**. The combination of a deteriorating social climate and Government enforcement of the rules, on one hand, and the high prices for some commodities, on the other, has encouraged some individuals to steal copper wires from ZESA, NRZ, and TelOne, and aluminum and oil used in the transformers of the electricity company. In the electricity sector, the distribution and transmission networks are being damaged on an ongoing basis by failure of operation of protection systems. ZESA, TelOne, NRZ, and local Governments are working together to improve the control of their premises. Some parastatals are claiming that the law should be enforced with rigor, since it permits penalties of imprisonment of up to 10 years for vandalism of infrastructure.

21. **Brain drain continues to be a problem for parastatals, in particular in high positions.** Salaries for low-skilled employees are similar to those paid in the private sector in Zimbabwe, but for engineers or other qualified staff, salaries are about half. A better economic climate and market wages for qualified staff should be enough to attract talent back to the parastatals.

Electricity Sector

22. **A major constraint in the electricity sector is power generation.** The generation capacity in Zimbabwe consists of two big generators—Hwange (a coal-based thermal plant with installed capacity of 920 MW, but effective capacity of 300 MW, which is extremely unstable and dips as low as 50MW on occasion) and Kariba (a hydro plant with installed and effective capacity of 750 MW)—and three very old, small, coal-based thermal plants (Harare, Munyati, and Bulawayo, with nominal capacity of 100, 100, and 90 MW, respectively, but almost no effective capacity). Nominal capacity totals 1960 MW, and effective capacity totals approximately 1000 MW. Imports add another 100–200 MW, resulting in a total of 1100–1200 MW of effective supply to satisfy a nominal demand that averages 1500 MW and peaks at 2200 MW. The level of load shedding thus varies greatly but averages around 500MW.

23. **Insufficient generation is due to lack of capacity and also to lack of inputs (coal), while import capacity from the region is also limited.** Specifically, ZESA would need 9,000 tons of coal per month if thermal plants operated at full capacity. However, ZESA is consuming only 6,000 tons of coal per month. The public coal company (Hwange Colliery) is working at 35 percent of its capacity, and it is costly to replace domestic coal with imported coal (the price of domestic coal is about half the international coal price, in part because of its lower quality). In spite of the supply shortage, ZESA is exporting 150 MW—or about 15 percent of its generation— to Namibia, at a price that covers operating costs (2.1 cents)—which is lower than import prices (3.3 cents). This peculiar situation is one example of the cost of the crisis. Namibia provided some financing for the refurbishment of Hwange power plant's capacity in the past; the repayment of this loan was agreed to be exports of electricity. ZESA is planning a similar deal with Botswana to refurbish the Bulawayo thermal plant, which would consist of a loan of US$ 8 million in return of exports for 40 MW.

24. **There is some room to reduce demand.** For example, the average residential consumption of electricity is 400 kWh per month, which looks high by developing country standards.[10] Consumption patterns are in part explained by the low perceived rates due to non-payment. ZESA is performing demand management programs that range from load shedding to—only recently and partially—changes in consumption pattern (replacement of high-consumption bulbs with low-consumption bulbs) and consumer education.

[10] Worldwide statistics are scarce. As an example, average residential consumption in South Africa is 200 kWh/month (Eskom). In Uruguay, a country with a mix of hydro and thermal plants based on imported fuels and with a consumption pattern that bears some similarities with Zimbabwe's (electricity is used for heating and cooking), families consume about 200 kWh, which is half the average consumption in Zimbabwe. The net of tax price for residential consumers starts at US$0.13/kWh growing for larger consumers to US$0.21/kWh.

25. **Among other challenges, the electricity sector has been troubled by vandalism in the form of damage or theft of transmission and distribution cables.** This problem produced losses of about US$ 400,000 a month during 2009, of which 40 percent was recovered later. Finally, brain drain is still a problem for ZESA.

26. **Aggregate transmission and distribution losses are lower than 10 years ago, but are slightly above comparable international figures.** Although ZESA did not report this figure, a rough calculation indicates that they are close to 16%. They were 20% in 2001 and 24% in 2002 but reached 7% between 2005 and 2007, while they averaged 11% in Sub-Saharan African countries and 14% in less developed countries.[11] The publication of this figure by ZESA and its decomposition between technical and non-technical losses may reveal the size of inefficiencies and the effects on financial viability.

27. **The financial problems of ZESA are more related to the low collection ratio, a somewhat high payroll as a percentage of revenues, and high debt.** During 2009, on an accrual basis, ZESA Holdings had a reasonable rate of earnings before interest, taxes and depreciation allowances (EBITDA) of 18 percent of sales and a profit.[12] The company debt was US$ 879 million gross as of December 2009, or almost US$ 420 million net of current net assets. With public agencies accounting for only 17 percent of the trade debtors,[13] the main problem was inability to collect from private customers.[14]

28. **Low collection rates obey to the inability to cut services to customers in arrears and problems with the billing system.** Collections were only 8 percent of the bills in March 2009, hovered between 40 and 50 percent from June to September, and rose to about 70 percent in October, only to decline again by January 2010. An efficient electricity company with the ability to cut the service to customers in arrears should collect at least 95 percent of its bills. In other words, ZESA's collection ratio, at 222 days, was four times higher than a normal ratio for utilities in emerging markets. Problems with the billing system and the increase in the real value of the bills after the introduction of the multi-currencies were behind the low collection ratios observed in the first months of the year, but the problem is far from solved. In 2010, ZESA has been able to read about 80 percent of the meters in Harare. This has helped avoid a repetition of the billing errors that took place after the introduction of the multi-currencies. However, ZESA is still working to solve some problems in its billing software. The skills level in the Commercial and Billing Operations departments is low and needs enhancement.

29. **Expanding the number of pre-paid private users is an option to improve collection ratios.** This instrument is already available in the electricity and other sectors.

30. **Non-core activities explain a great portion of losses in ZESA.** ZESA Enterprises (which is one of the non-core activities of the firm) had a loss of US$ 5.1 million during 2009. It is not clear what is the role of an electricity company in the

[11] See World Bank World Development Indicators (2010).
[12] EBITDA is an estimate of the money that accrues to capital to pay for the depreciation of the asset and the rate of return.
[13] ZESA is a large net debtor, holding debts with the rest of the Government of about US$ 70 million, mostly with RBZ
[14] Residential customers account for 34 percent of ZESA's bills to end users. Therefore, it is likely that business users are significant in total trade debt.

provision of cotton or manufactures at a loss. It is possible that these non-core activities were an attempt by ZESA to gain some flexibility (in the form of foreign exchange and some cash sales) in the years of hyperinflation. This rationale no longer holds today.[15]

Petroleum Sector

31. **NOCZIM now competes with private firms to supply the domestic retail market.** The supply of petroleum products is imported and prices are regulated with a cost-plus formula. Most formal imports into Zimbabwe flow through a pipeline, which is the cheapest transport alternative. Moreover, NOCZIM has a clear incentive to bundle together all imports because it has a 67 million liter take-or-pay contract with the pipeline. This became burdensome for the company because of the reduction in domestic consumption.[16] For example, imports through the pipeline averaged 25 million liters a month in 2009, but NOCZIM had to pay the transport fee of 67 million liters. As a consequence of this take-or-pay arrangement, NOCZIM ran a primary deficit of US$ 18 million in 2009. This gap was relieved slightly in November/December, when imports averaged 45 million liters a month, but resumed in January 2010, when imports reached only 29 million liters. According to NOCZIM, there is substantial competition in the fuels market, with 88 licensed importers. In addition, some 20 percent of fuel comes into the country in trucks, which puts even more stress on NOCZIM's contract. As NOCZIM has only 30 petrol stations (11 of its own and 19 dealer-owned) out of a total of around 420 for the entire country, it sells only about 5 million liters month directly. Therefore, it has a clear incentive to bundle all importers in the country to use the pipeline. Formal importers have no problem in bundling their purchases with NOCZIM because the transport cost is lower and they can gain access to lower prices abroad for larger orders.

32. **Unlike other parastatals, NOCZIM has no collection problem because most of its sales are on a cash basis.** A recovery in volumes would reduce the deficit automatically. About US$ 93 million of NOCZIM's debt of US$ 158 million was with foreign suppliers because RBZ did not cancel a foreign debt that originated some years ago. The parastatal is a net debtor to the rest of the Government for US$ 17 million.

Railways and Roads Sectors

33. **The main problem in railways is lack of demand.** The railway system of Zimbabwe was designed to transport 18 million ton a year. Currently, the maximum transport capacity is around 5.3 million tons a year, taking into account the locomotives and wagons that can run today, and subject to some constraints, such as speed restriction of up to 20 Km/h in some routes. The National Railways of Zimbabwe (NRZ) transported only 2.7 million tons in 2009. Freight accounts for 85

[15] However, about half the revenues of ZESA Enterprises are obtained from testing, repairing, and maintaining transformers.

[16] Take-or-pay contracts are typical in the oil industry to ensure that the specific investment on the pipeline is recovered. The buyer commits to transport a specified amount of oil or pay the pipeline fee if it opts not to transport. In this way, the owner of the pipeline transfers the risk of fluctuations in demand to the buyers, who gain from lower transport costs.

percent of NRZ's total revenues. Getting more freight will help the company eliminate its deficit; it can handle volumes up to 5.3 million with no major problems. However, NRZ competes with trucks that charge a higher tariff per ton per kilometer (US$ 0.11 compared to US$ 0.06), but provide faster service and a discount if the loader can guarantee a return trip full. Passengers only represent 15 percent of NRZ revenues.

34. **NRZ debt is high mainly due to non-payments from other parastatals.** NRZ had a negative EBITDA in 2009 on an accrual basis. It has a primary deficit of US$ 10 million a year, without any visible improvement in recent months. Public debtors are important for NRZ (comprising 36 percent of the total trade debtors). Public debt has been incurred mostly by parastatals that use the railways and do not pay their bills regularly. Payroll costs are very high and there are clear signs of overstaffing, at least for actual volumes transported. In 2009 NRZ reported cumulative estimated loses of US$ 17.5 million (at replacement costs) due to vandalism and theft of its infrastructure.

35. **Given the current infrastructure and stock conditions, NRZ is assessing a new arrangement for the railways sector, in which the parastatal competes with private shippers for freight**.[17] Under this arrangement, the Government would run a new publicly incorporated company that will provide rail service. One possibility is for NRZ to operate and maintain the tracks, and lease the lines to private operators in return for a fee.

36. **In the case of roads, ZINARA is mandated to manage the road maintenance fund, including setting road user tariff levels, collecting the funds, disbursing funds to road agencies, and monitoring the usage of such funds.** The key fundraising instruments have been fuel levy, transit fees, overload fees, and abnormal load fees.

37. **Prices charged are not enough to cover the full cost of road transport.** In spite of recent efforts by ZINARA to introduce tolls and raise fuel levies, trucks are likely to be subsidized. Tariffs set by ZINARA are not enough to cover needed investments in infrastructure, the costs of reducing congestion, and the environmental impact of consuming diesel.[18] The road and carbon levies on diesel are only US$ 0.023 per liter. Heavy trucks pay a toll of US$ 5 for about every 100 km. The original proposal by ZINARA and the Minister of Transport and Infrastructural Development was to charge a levy on diesel of US$ 0.05 per liter (instead of the final decision to set it at US$ 0.01) and a toll for heavy trucks of US$ 10.

[17] The rail network covers 3077 km (of which 318 km are under concession to BBR). About 313 km of the main line is electrified using a 25 kV overhead system. After being vandalized, it will need investments to become operational. Meanwhile, that segment is operating with diesel locomotives. Nearly 480 km (of the 2,760 km operated by NRZ) are subject to speed restrictions. According to recent estimates, the total stock consists of 168 locomotive units (only 64 are functional), 8,611 wagons (about half of which are sidelined), and 315 coaches (only 117 are operating).

[18] Parry and Small (2002) estimate that a US$ 0.05 per liter charge in the consumption of diesel and petrol in the United Kingdom and the United States is needed to pay for the impact of fuel consumption on global warming. Even though there is no agreed common solution for global warming, this estimate suggests that a minimum tax for fuels in all countries should be US$ 0.05 per liter. The congestion and local pollution components of an optimal tax on fuels will vary depending on the economic and traffic problems of each country.

Water and Sanitation Sector

38. **Water operators face constrains similar to the other sectors.** Although ZINWA has enough raw water, it faces constraints on clear water because of a lack of resources for pumping, repairs, and treatment. HWA faces constraints on both raw water (which is heavily polluted) and clear water because of lack of treatment chemicals and treatment capacity. Faced with a notional demand of about 1200 megaliters/day, HWA can provide 350 megaliters/day, with two plants that produces 90 and 614 megaliters/day respectively. The difference is explained by losses of approximately 40 percent. In urban areas, the pollution problem is increased by bad sewerage networks that leak over rivers and dams. Water authorities are still able to treat water because UNICEF provides them with chemicals, and some of them are able to rehabilitate nonworking equipment with donor support. HWA is exerting demand and supply management programs that go from rationing to (purportedly) improve metering, leak detection, pressure adjustment, and consumer education.[19] Unlike HWA, Bulawayo City Council (WCC) faces constraints on water sources, and hence has more incentives to reduce leakages.[20] BCC has a waterborne reticulation system of about 6,000 kilometers, the bulk of which is 50 or more years old, and about 98% of developed properties are connected to the same system.

39. **On a cash basis, ZINWA and HWA collect barely enough money to meet their payroll costs and other recurring operating expenses.**[21] On an accrual basis, ZINWA has a comfortable EBITDA of 22 percent of sales. The figure is much higher for HWA (48 percent for the February to December 2009 period).[22] ZINWA's collection ratio is erratic (averaging 40 percent in 2009), and increases when the Government pays some bills, as occurred in the fourth quarter of 2009. Private customers and local authorities still have important arrears.[23] For example, agricultural users should contract an arranged amount of water, but do not pay for it, citing low production levels.[24] Customers' decision not to pay might be encouraged by the Minister of Water Resources Development and Management's decision not to authorize disconnections. HWA faces the same problem. It collects about 48 percent of its bills, and can disconnect only commercial and industrial users in arrears, not residential users.[25] Therefore, the average collection ratios are very high: almost 200 days for HWA and 285 days for ZINWA. BWA faces a similar problem. During 2009, average collection was about 15%, with private customers responsible for most of the non-payment. Government agencies owed BWA $ 5.4 million at the end

[19] Only about 50 percent of the 170,000 residential meters in Harare are working. Metering helps to improve the collection ratio to the extent that it prevents the need to use a biased estimate of consumption based on past behavior.

[20] During the 1990s, the Bulawayo City Council (BCC) was able to reduce unaccounted water to about 25 percent with financial help from donors. But this situation may have changed after the collapse in the water and sanitation services country-wide.

[21] HWA collects about US$ 3.5 million a month. Its payroll is US$ 2.0 million and the electricity bill is US$ 1 million. The cost of chemicals is US$ 2.5 million.

[22] HWA's information for the February to December 2009 period is shown annualized in Table 2 to ease comparison with the other companies.

[23] ZINWA used debt collectors to improve the recovery of its bills—with little success. The Government signal of "no disconnection" seems to be a major problem, even for professional collectors.

[24] In some cases, land reform has made collection more difficult, given the impossibility of cutting off the supply of water to farmers in arrears when they share a piece of land with farmers who pay their water bill.

[25] Residential customers account for 97 percent of the trade debtors that Harare Water Authority had at the end of 2009 (see Table 1).

of 2009, compared to accrual revenues of almost $ 10 million for the year. At the end of 2009, BWA still had some arrears with salaries and taxes, and could only comply with 0.1% of the capital budget for the year. In summary, if water authorities were able to collect bills, they would probably have enough funds to cover operational costs and even some investments.

40. **The main debtors for ZINWA and HWA are private consumers and local authorities.** Water debtors owed ZINWA US$ 38 million as of December 2009; only US$ 10 million (27 percent) of this amount stemmed from delays from Government agencies or parastatals.[26] ZINWA is a net creditor to the rest of Government agencies for about US$ 5 million. HWA is a net debtor for about US$ 11 million.

Telecommunications Sector

41. **The telecommunications sector has been the most dynamic of all infrastructure sectors in the Zimbabwean economy.** The Government opened it to liberalization and competition in a context of dramatic technological changes worldwide 15 years ago. Nonetheless, the ability of the state-owned companies TelOne and NetOne to catch up with the sector dynamics is questionable. The recent macroeconomic crisis contributed to slow down the process of technology adoption at the same time that both TelOne and cellular phone operators have faced significant congestion.

42. **Both NetOne and TelOne are planning an aggressive expansion of their customer base.** In the case of the public cellular company, the target is to increase the number of lines from 500,000 today to 1,900,000 by the end of 2010. NetOne has some vendor financing for its planned US$ 35 million investment. TelOne is planning to modernize its network (about half of it is analogue-based, a technology of three decades ago) and to increase its customers from 350,000 to 2 million. The investment estimated by TelOne for such a jump is US$ 280 million. Private firms are also investing in the ICT market to increase their number of subscribers of cells and to be able to provide data, voice, and video through broad band. EcoNet (the market leader in the cellular market) already started to invest US$ 65 million in fiber optic backbone, with the idea of connecting the largest cities in the country and getting to the border with South Africa by September 2010.[27] Later they plan to lay their own cable to connect with the submarine cable. Both TelOne and NetOne have similar plans, which will result in some duplication of capacity. Although this duplication could be avoided, it will be positive for consumers in the future. Government coordination, if not done properly, could delay the private investment if the Government were to opt to allow the existing public suppliers to charge high prices to consumers to help them obtain the financial resources needed for the expansion. If all firms fulfill their investment plans, it is likely that consumers will benefit from fierce competition. Given the large externalities associated with the use of ICT, the costs of underinvestment are higher than the costs of overinvestment.

[26] Local Authorities owed another US$ 3.5 million. As they distribute the water provided by ZINWA, their arrears are the consequence of arrears in their customer base (families, business, and Government agencies).

[27] According to press reports, EcoNet will be providing broad band as of March 2010 in the main cities, but using a satellite connection until they get to the South African border in Beitbridge.

43. **The main cash-flow problems are a consequence of low collections of bills.** On an accrual basis, TelOne had an EBITDA of 60 percent of sales in 2009— a high figure, even for capital-intensive telecommunication companies. This reveals that the price for a minute of calling is closer to a monopoly price. The collection ratio increased from about 10 percent in April 2009 to 45 percent in December 2009, in part due to the Government authorization to resume its standard collection practices, which include the suspension of service for arrears. TelOne is highly indebted (mostly in default for a gross amount of US$ 439 million, or US$ 371 million net of current net assets. In the case of NetOne, collections averaged about 45 percent during the last quarter of 2009.[28] NetOne has a manageable gross debt of US$ 84 million.

44. **To improve its financial condition, TelOne is evaluating introduce a new pricing scheme of prepayment, while NetOne is trying to induce users to use hybrid prepaid accounts (a prepaid account that mixes with some post paid attributes).**[29] Unlike its private competitors, NetOne has one-third of its customers on a post paid contract (this share is much higher than for private mobile phone companies because NetOne is the main provider of services to the Government and its employees). NetOne also suffers from a reduction in the average consumption after prices rose from virtually zero in 2008 to about US$ 0.20 per minute. Payroll costs as a fraction of sales are about double the ratio of private operators. However, NetOne's EBITDA at 35 percent of sales should allow the company to secure a comfortable financial situation if it is able to improve its collection ratio.[30]

45. **Private customers account for most of the arrears in the ICT parastatals.** For example, at the end of 2009, Government agencies owed TelOne US$ 21 million out of account receivables of US$ 210 million (see Table 1). NetOne's share of Government agencies to total trade debtors was similar (10 percent).[31] The average collection ratios of almost 290 days for TelOne and 170 days for NetOne are much higher than the 50 days that are normal for utilities in emerging markets.

III. Regulation of Infrastructure

A Conceptual Framework for Properly Managing Infrastructure and Services

46. **Several infrastructure sectors, such as electricity, water and sanitation, transport, and ICT, share common characteristics.** First, the cost structure is characterized by natural monopoly: that is, from the cost side, it is efficient to provide the good or service by one firm. Second, the price-elasticity of demand is low, while there are few or no alternative substitutes. Third, some services are provided in networks and involve (net) positive externalities. Fourth, it is possible to

[28] NetOne collects a fraction of its sales to private customers in advance through prepaid cards.

[29] While in other countries, prepaid telephone services appear to solve the expenditure problem of low-income families (who can not control consumption ex ante), in Zimbabwe this scheme is planned as a solution for collection problems, following the model of mobile phone companies and hotels .

[30] The private company EcoNet is in a better position, with funds to undertake some investments (in part because it has a mix of 90 percent–10 percent between prepaid/post paid usage, compared to NetOne's mix of 60 percent–40 percent).

[31] NetOne is a net debtor to the rest of the Government for only US$ 3 million.

develop competition in particular segments in each sector, but this requires non-discriminatory access and use of the essential facility (the grid or network) operated by a monopolist. Finally, all sectors are capital-intensive (with a high capital/product ratio), and have specific and irreversible investments that depreciate slowly. As a result, the feasibility of competition is limited, giving the operator room to eventually abuse market power.

47. **The sunk and specific characteristic of the assets represents a temptation for Governments to act opportunistically and use funds that should remunerate capital (the quasi-rents) for politically attractive purposes without sacrificing much performance in the short term.** Similarly, the operator may behave opportunistically—especially when it enjoys certain monopoly powers through contract renegotiation with the purpose of taking quasi-rents in tariffs, subsidies, investment commitments, and the like. Both kinds of risks should be mitigated in a proper regulatory environment, regardless of whether the service is provided by public or private enterprises.

48. **To avoid this "low-quality equilibrium," it is a central challenge for the Government to choose a proper provision model and implement it well**. Best practice public management would require the elimination of interference from politics; the avoidance of capture by interest groups (suppliers, unions, and the like); and the pursuit of multiple goals in the public interest that are very difficult to evaluate. In turn, private participation requires transparent and stable regulations, and an independent and efficient regulatory body, to induce efficient behavior that benefits consumers and taxpayers over time.

49. **A regulatory framework or contract should define the rights and obligations of the operator, and the risks and incentives under which it will operate.** Particular dimensions that affect the intensity and feasibility of competition for the contract (or types of public-private partnerships) include establishing proper incentives, correctly allocating risks among parties, eliminating artificial exclusivities, maintaining a reasonable tariff level and structure, separating activities correctly (provided that significant scale and scope economies are not lost) and establishing sound provisions for contract renegotiation (for more details, see Appendix C).

50. **The electricity, petroleum, and telecommunications sectors have a legal framework to guide the provision and control of services and infrastructure.** But in practice, ZERC has not been formed and PRA does not exist. Only POTRAZ is working relatively properly (with respect to other agencies). It is the exception with regard to independence, since the agency is less subject to interference. This may be due to the particularities of the sector (it is a dynamic sector where parastatals compete with private enterprises) and to the fact that POTRAZ self-finances out of license fees and a levy on sales of telecom firms, which gives the agency room for independent decisions. POTRAZ currently employs about 35 professional staff and is planning to expand to 70 if the sector grows as expected. Even though it is not in the delicate situation of the Minister of Water Resources Development and Management (with a staff of 4 professionals), it lags behind international standards, taking into account that the Agency also controls the radio spectrum.[32]

[32] World Bank (2008a) cites an international study that compares several telecommunication regulatory agencies and finds an average staff size of 202 employees (with only two regulators employing less than 50).

51. **There is no common practice in the definition and enforcement of quality and environmental standards.** The Minister of Energy and Power Development regulates these standards for petroleum products, but there is no regular control. ZERC regulates the electricity sector, but the commission did not renew commissioners. NRZ self-regulates for quality of infrastructure and services, accidents, and the like, but there is no third party to assess these standards. Lastly, the Minister of Water Resources Development and Management is responsible for developing policies to ensure the availability of water subject to quality and environmental requirements. This issue should become central at some time in the future, under the operation of a parastatal or a private company.
52. **Proper regulation is always a prerequisite to induce the private sector to participate, as well as to subject public operators to regulatory standards.** Therefore, a regulatory framework should be delineated in those sectors where it does not exist, in a unified way (water and railways). Regulatory agencies should be created where they are lacking; ZERC and PRA should be operational agencies. Rules should be strengthened for existing agencies. In particular, there should be less involvement by the President or Minister in key aspects such as policy guidelines, appointment, and remuneration.
53. **Contrary to suggestions on possible merger of regulatory agencies, it is important to maintain a sector-specific regulatory framework.** One proposal is to create a single regulatory agency for all parastatals, given the shortage of administrative skills in Zimbabwe. A multi-sectoral regulator for the energy sector (electricity, fuels), for instance, is not uncommon and could work. But the government should be sure that the expertise needed to regulate products is very different; that is, setting and controlling quality standards of fuels for instance (pollution, sulphur content, and so on), is different from regulating quality of electricity (technical and non-technical losses, reliability of the service, tension oscillations, and so on). Moreover, pricing of petroleum products (quite liberalized) is different from cost-plus regulation of electricity. Even more, the idea of having a super-regulatory agency seems more difficult to justify because the price and quality regulation of energy products is very different from those for water, railways, or telecommunications services (some variables to regulate may be the same, but how to regulate them is sector-specific). In the end, the single regulatory agency will inevitably end in one Government department for each activity and the only "savings" will be at the board level. Moreover, with a long-run view, is better to have competition among different regulators. A single (powerful) agency might be more tempting for political capture.
54. **Summing up, best practice regulation usually follows some principles**: a) allow competition whenever it is feasible; b) control monopolies with independent regulators; c) set price caps to avoid cross-subsidies from some products to others; d) establish targets for service coverage and quality, while avoiding too much detail on investment programs. Regulations in Zimbabwe depart from best practice in several dimensions, including a lack of effective competition, the presence of cross-subsidies, and the exposure of regulators to political influences. These features are analyzed in the next section.

The Regulatory Framework for Infrastructure and Infrastructure Services in Zimbabwe

55. **This section focuses on the analysis on three key dimensions of regulation in Zimbabwe**: (i) regulatory boards; (ii) sector-specific regulations; and (iii) tariff setting (Table 3).

Table 3. Dimensions of Regulation, Selected Infrastructure Sectors.

	Electricity	Telecoms	Fuels	Railways	Zimbabwe practice vs Best Practice
REGULATORY AGENCY					
1. Creation					
Different than Ministry in the Act	Yes	Yes	Yes		Ok
In practice	Terms expired	Yes	Not created yet	Price: MoT. Quality: NRZ	
2. Appointment of commisioners					
Length of their term	3 years	3 years	5 years	3 years	Longer than the term of the appointer
By competition	No. Apppointed by President out of a list proposed by Minister	No. Apppointed by President, with consultation by Minister	No. Appointed by the Minister	No. Appointed by the Minister	Should be selected by a contest among qualified applicants
Background	Only 2 out of 5 or 7 with a background in Electricity or Law, Accounting or Finance	Only 3 out of 5 or 7 with a background in Telecommunications or Law, Accounting or Finance	Only 3 out of 5 with a background in petroleum or engineering, law and finance.	No details	All with sectoral, legal, accounting or finance background
Conflict of interest	Yes. Constraint on not participating in meetings with conflict	Yes. Contraint on not participating in meetings with conflict	Yes. Contraint on not participating in meetings with conflict	Yes. Contraint on not participating in meetings with conflict	Divestiture of stakes in regulated firms. One-year quarantine period
Removal	President on the reccomendation of the Minister	President on the reccomendation of the Minister	Minister but subject to non-compliance	Minister	Only for non-compliance
Salaries	Determined by Minister	Aproval by the Minister	PRA but with Minister's approval	Aproval by the Minister	Competitive, from annual budget
Accountability	To the Minister. The Minister to Parliament	To the Minister. The Minister to Parliament	To the Minister. The Minister to Parliament	To the Minister. The Minister to Parliament	To the Parliament
3. Budget of the Agency					
Source of revenues	Fees and licenses	Fees and licenses	Fees and licenses	Railways funds	Own: Annual budget but may be complemented by other revenues.
Use of revenues	Budget approved by Minister. Any excess to Rural Electrification Fund	USF: standarization, quality standards, expansion to under-service areas, etc. Fees: operation (surplus to USF).		Operations and expansion	Only tied to objective of the fund (e.g., USF).
Auditor	Named by Authority and approved by the Minister	Named by Authority and approved by the Minister	Named by Authority and approved by the Minister	Named by Board, with Minister's approval	Ok
4. Independent decisions	Minister may give directions	Minister may give directions (including reversals, suspensions, etc. of Boards decisions)	Minister may give directions	Minister, after consultation with the Board, may give directions	Minister should interfere.
CONTROL OF QUALITY	ZERC	POTRAZ	By PRA who also sets the standards	NRZ	
REGULATION OF TARIFFS	ZERC has to prepare it.	POTRAZ follows ITU standard	Firms have to submit to Ministry and PRA their price build-up on a monthly basis	Formally no: in practice Minister must approve	Independent regulator
1. Cost of Capital Methodology included in the Act	ZERC uses WACC but with no minimum guarantee of return	POTRAZ uses WACC	None	None	Should be in the Act or regulation
2. Guarantee of a minimum return	Cost plus	Cost plus	Cost plus based on landed cost of fuels	n.a.	Only if based on efficient operation
3. Type of regulation					
Expost adjustment to tariffs	Yes if demand or costs are different than forecasted	Upon licensee or POTRAZ request		n.a.	Cost plus: ongoing. Price cap: Price Index - "X". Free: market conditions.
Regulatory Asset Base	Historical costs adjusted by inflation for generation and replacement costs for transmission & distribution	Fully distributed costs		n.a.	Replacement cost of the assets
4. Period of review of tariffs	1 year	Upon licensee or POTRAZ request	Monthly	n.a.	Cost plus: ongoing. Price cap: 5 to 10 years.
5. Intra period adjustment	Yes. Price of coal, inflation and depreciation of the Z$.	No		n.a.	Indexation by CPI
6. Deregulated prices in competitive segments	No. Even price for generators is determined by ZERC.	Yes	No	Supposedly, but subject to Minister approval	Advisable if there is competition
Potential deregulation	Yes if ZERC proposes and Minister approves	Market deregulated already			Advisable if there is competition
Monitoring of competitive activities	ZERC, but with participation of Competition Commission	POTRAZ	PRA. No reference to Competition Commission		Coordinated monitoring between regulator and competition commission
7. Cross subsidies	They are possible, although Act requests a substantial reduction				Ideally, no. Some cases may require social tariff.
8. Price Stabilisation Fund			Yes with levy on fuels. Levy on fuels may vary by user according to Minister's decision		Ideally no. Only if it is balanced intertemporally.
9. Universal Service Fund		On licensees turnover			Sector specific
GUARANTEES TO INVESTORS IN THE ACT					
1. To earn fair return on assets	Yes				Ideally no, but it was used in other countries to attract more investors
2. Levies	May be imposed by ZERC until Parliament removes them				No. All taxes and levies should be explicit in the license and may be changed only by Parliament
3. Contracts	Details of purchase agreement of power might be included in license	Detailed in the license.			Ok
4. Removal of license	Relatively lax e.g. if licensee did not comply with the conditions of the license or if its financial position is bad.	If license was issued in error or through fraud, if the licensee contravened the Act, ceased to provide the service, etc.	Relatively lax e.g. if licensee did not comply with the conditions of the license or if its financial position is bad.		Based on performance
ENTRY					
1. Restrictions on Entry	None except that a license is required	High cost of licenses	None except that a license is required	No (implicit). NRZ is the operator	No legal barriers to entry
2. Exclusivity	No, unless indicated in the license	No	No	No (implicit). NRZ is the operator	Ok
TERM					
1. Initial term	Up to 30 years	Fixed: 20 years. Cellular: 15 years.	Variable terms fixed by PRA		Sector specific (long term)
2. Possibility of renewal	Yes for up to 20 years	Yes	Yes		Usually, yes

(i) The Regulatory Agency Boards

56. **The legal framework of almost all sectors calls for the creation of a regulatory authority.** However, the authority for the Zimbabwe Electricity Regulatory Commission (ZERC) was not renewed after the last official period. The Petroleum Regulatory Authority (PRA) has not initiated operations. The water and sanitation sector lacks appropriate legal provisions. Some regulatory activities are vested in the Zimbabwe National Water Authority (ZINWA), while others are vested in the Minister of Water Resources Development and Management. Similarly, in railways, some regulatory activities are implicitly vested in the Minister of Communications and Transport, while others are vested in NRZ. The only authority that is working normally is the Postal and Telecommunications Authority (POTRAZ). The Government foresees an increase in the role of regulatory authorities over the coming years.

57. ***Electricity Sector.*** The Electricity Act creates the Zimbabwe Electricity Regulatory Commission (ZERC) as the regulatory body of the electricity sector. It has five main objectives: (i) to ensure a fair and balanced regulation for licensees, consumers, investors, and stakeholders in the electricity industry; (ii) to pursue efficient industry and market structures and to ensure the optimal utilization of resources for the provision of such services; (iii) to optimize access to electricity services (both rural and urban areas) and ensure adequate supply of electricity; (iv) to ensure fair prices that also are sufficient to finance operation, maintenance, and investments, and obtain reasonable earnings for their efficient operation; and (v) to ensure safety, security, reliability, and quality of service in the production and delivery of electricity to consumers. Since the last official period, the commission's authorities have not been renewed, being the representative a director of the Minister of Transport and Infrastructural Development. The absence of a comprehensive set of regulations hampers ZERC from performing its duties. Government officials stated that, as of this writing, an Act is under way to make ZERC a fully fledged agency.

58. ***Petroleum Sector*.** The Petroleum Act establishes the creation of the Petroleum Regulatory Act. There are nine main stated objectives: (i) to ensure the provision of petroleum products for domestic use; (ii) to promote the development of the procurement, sale, and production of petroleum products following international standards and public demand; (iii) to exercise regulatory functions in respect of the activities listed in (ii); (iv) to promote the interest of consumers, purchasers, and other users with respect to quality and variety of products; (v) to maintain and promote competition in the industry; (vi) to encourage expansion of the industry; (vii) to further the advancement of technology applicable to the industry; (viii) to represent the country abroad; and (ix) to advise the Minister of Energy and Power Development in all matters relating the industry. The authority and board have not been created yet.

59. ***Railways Sector*.** The Railways Act creates the Board of the National Railways of Zimbabwe (NRZ). The primary function of the Board is to maintain an efficient system of public transport of goods and passengers by rail and, when necessary, related systems. NRZ has self-regulatory powers on safety and quality issues.

60. ***Roads Sector*.** The Roads Bill creates the Zimbabwe National Road Administration (ZINARA), which is not a regulatory agency per se, but a collector and administrator of funds. It has six main functions: (i) to fix road user charges and to collect such charges or other revenues of the Road Fund; (ii) to allocate and disburse

funds to road authorities from the Road Fund; (iii) to audit the use of such funds by road authorities; (iv) to assist the Minister of Transport and Infrastructural Development in setting maintenance, design, construction, and technical standards and to monitor adherence to such standards by road authorities; (v) to assist road authorities in making multi-year road maintenance rolling plans and to approve them; and (vi) to monitor the implementation of road maintenance works by road authorities, and others.

61. ***Telecommunications Sector***. The Postal and Telecommunications Act creates the Postal and Telecommunications Regulatory Agency of Zimbabwe (POTRAZ), whose primary function is to ensure a level playing field in the postal and telecommunications (P&T) sector. The Authority has ten main responsibilities: (i) to ensure the provision of sufficient domestic and international P&T services in Zimbabwe; (ii) to promote efficient and continuous service provision and effective competition, while maintaining independent financial viability and securing reasonable demand for P&T services; (iii) to promote the development of P&T systems and services following international standards; (iv) to issue licenses and regulations , and establish standard and codes of P&T, satellite orbits, and the radio frequency spectrum; (v) to promote the quality and variety of P&T services; (vi) to monitor tariffs charged by cellular telecommunication, and to monitor P&T licensees, with a view to eliminating unfair business practices; (vii) to promote and encourage the expansion of the industry; (viii) to establish, approve, or and control a national telephone numbering plan to ensure that numbers are allocated in an efficient and nondiscriminatory manner; (ix) to represent the country abroad; and (x) to advise the Minister of Information Communication Technology in all matters relating the industry.

62. **The Acts for petroleum, electricity, and telecommunications clearly state that Authorities must be independent bodies: that is, they shall not be subject to the direction or control of any person or authority.** The Roads Bill does not make such a statement. However, each Act, including the Roads Bill, provides room for Government interference. For example, they provide that the corresponding Minister may give the Authority general policy directions, as the Minister considers necessary in the national interest. Moreover, each Authority, administration and NRZ must submit to the corresponding Minister all reports required by the Act or by him/her, while the Minister is accountable to the Parliament. Finally, the Acts establish that Ministries hold regulatory powers, in consultation with the Authorities.

63. **Each Authority is governed by a Board.** But some or all of its members are appointed directly by the Minister, after consultation with the President (in the case of petroleum and railways), or by the President directly, after consultation with the Minister (electricity and telecommunications). In other cases (ZINARA), they are nominated by the Minister itself, in consultation with sector-related associations and organizations, urban and rural district councils, the Department of Roads, and other Ministers (finance and local Governments). Board members usually serve for three years (five years in the petroleum sector) and can be reelected once. There are professional requisites (sector-specific or related to law, economics, or finance) for a subset of members, which gives room for some Board members without experience in either the sector or in management and finance. The Minister (in petroleum and railways) or the President (in electricity and P&T) elects and may remove the chairperson and also may remove the vice-chairperson (who is elected by the Board in the petroleum and electricity sector, and selected by the President in P&T, and by

the Minister in NRZ). The same Government officials may remove or suspend Board members. The chairperson and vice-chairperson of ZINARA Board are elected by the Board itself and may be removed by the Minister.

64. **Remuneration and expenses for Board members (or committees, when they are allowed) are paid with funds of the Authority, and are set (in electricity) or approved (in the other sectors) by the corresponding Minister.** PRA's main sources of funding are revenues from issuing licenses and fines imposed on licensees and others. ZERC raises funds from licenses fees (0.5 percent of five-year projected revenues, payable every five years), charges, or levies (imposed, increased or withdrawn with approval of the Minister, and finally removed by the Parliament, currently at 1 percent of revenues). Budget surplus are assigned to the Rural Electrification Fund. POTRAZ raises revenues mainly from license fees (upfront payment of US$ 100 million and very high fees of 3.5 percent of annual turnover, in the case of fixed and cellular telecommunication operators),[33] charges, and other income. Annual surplus is appropriated by the Universal Service Fun (defined later). ZINARA's main source is the Road Fund; it can draw up to 2.5 percent of the Fund's annual revenues. NRZ collects funds from operations and the Minister of Transport and Infrastructural Development budget (in the latter case, when the Minister requests special works, or to finance running deficits). The revenues and expenditures of all Authorities and NRZ are audited according to the Public Finance Management Act. Auditors are named by the respective Authority and approved by the Minister.

65. **A striking provision in all but the water sector is that members of the Board or committees may hold stakes in a related contract, right, license, interest, company, or association of persons.** In such cases, the member must disclose the relationship to the Board, and the member may not participate in meetings related to such contracts, rights, and so on, being subject to contravention rules. This is quite a flexible constraint. For example, a license in the telecommunications market surely affects the profitability of another license in which a Board member may be related.

(ii) Sector-Specific Regulation

Electricity Sector

66. ***Regulations.*** The Electricity Act gives scope to the Minister of Energy and Power Development to issue regulations on many matters, including: the Commission's administrative affairs (meetings, hearings and proceedings, arbitration and mediation proceedings); the duties, powers, rights, and obligations of a licensee; the procedure for applying, amending, or canceling licenses; the determination of the standards of performance to be required from licensees; price and tariff setting by licensees; fees, levies, fines, and penalties that may be payable by licensees or consumers; the regulation of investments, assets, and properties, and the interest in such assets and properties, held in connection with the electricity industry; customer-related matters (complaints, practices concerning customers that are having difficulty paying bills, and connection and disconnection procedures); the regulatory treatment of rural electric schemes and investments; procedures for addressing licensee mergers, acquisitions, and affiliate relationships; procedures for

[33] According to POTRAZ, companies submitted complaints about the license fee and have not paid it in full.

monitoring and mitigating market power; and terms and conditions to access to the transmission and distribution networks.

67. ***Licenses.*** The regulatory framework foresees that any operator in the sector must be issued a license. ZERC issues licenses for: generation located in the country or abroad (to supply electricity to any transmission, distribution, or supply licensee);[34] primary transmission (in charge of generation scheduling, commitment and dispatch, transmission scheduling and generation outage coordination, transmission congestion management, power pooling, and ancillary services scheduling, among other responsibilities); independent transmission; bulk supply (traders); primary distribution (to connect customers to the network, metering, billing and collection, and so on); independent distribution; and retail supply (to trade electricity at the retail level). Licenses are valid for periods of up to thirty years (currently twenty-five years), with a possible twenty-year extension if the Commission agrees. Licensees shall comply with consumer standards, as well as health, safety and environmental standards, set forth by the Authority. There is a list of conditions of enforcement and cancellation of a license that is lax. For example, a cause of cancellation is that "the financial position of the licensee is such that it is unable to fully and efficiently discharge the duties and obligations imposed on him by his license". This is a subjective criterion for an important event like the cancellation of a license.

68. **Several observations in the regulation of licenses are worth noting.** *First*, the primary transmission operator may purchase power for the purpose of reselling in bulk to one or more licensees, in which case it must purchase power in an open, transparent, and competitive manner, subject to the review of the Commission. *Second*, the distribution operator may provide electricity to its distribution customers, in which case it must purchase power in an open, transparent, and competitive manner, subject to the review of the Commission. In such cases, and under exceptional circumstances, the Commission may allow an alternative method. *Third*, whenever there is interaction between the primary distribution operator and independent distribution operators, the former is considered the default service provider for end users, including those who chose an alternative provider that failed to meet its obligations. *Fourth*, any license transfer, including the purchase of a licensee by a current licensee (that is, a horizontal or vertical merger) must be approved by the Authority. *Fifth*, there is some room for the Authority's discretion on the licensee's running business, since the Act allows for the possibility of an exclusive area (which is reasonable in some cases), for all or part of the period of the license, for a specific purpose, for a geographical area.

69. ***Regulated Services: Competition and Market Power***. ZERC oversees whether electricity services are provided competitively and determines whether a service with fixed price can be provided competitively—in which case, ZERC may deregulate it, subject to the approval of the Minister of Energy and Power Development. Also, the Commission monitors electricity undertakings markets to determine the presence of dominant market power - in which case, it may issue such cease and desist orders, levy monetary penalties (in concurrence with the Competition and Tariff Commission), or refer the matter to the Competition and Tariff Commission for investigation. However, there is practically no private supply of electricity to the network. There are several reasons for this failure: a) The

[34] All operators with capacity to generate, transmit, distribute, or supply more than 100 kW of electricity must hold a license.

wholesale price paid from ZTDC to ZPC is low (even lower than the average import cost). For ZESA Holdings, this is an internal transfer from one unit to another; for a private generator it results in a price that does not cover its costs; b) The cost of capital recognized by the regulator is only 8.51 percent, which is lower than the return used by other regulators in Zimbabwe and likely to be below the opportunity cost of capital in the country; c) With the dominant position of ZESA, there is room for opportunistic behavior in the order of dispatch in the periods of the year when supply is enough to match demand.

70. ***Recommendations*.** Based on this review, it is advisable that:

    a. ZERC concentrates on regulatory actions, while the Minister of Power Development concentrates on sector policy issues, and the antitrust agency (the Competition Commission) takes on the merger and behavior (dominant position) aspects of the market. The overlaps between the Minister and ZERC in regulating the electricity system and market should be minimized.

    b. Although not urgent, several aspects of the provisions for licensing should be revised. *First*, a transmission operator that mixes physical and commercial operations (trades bulk energy) creates a risk of double-sided monopoly. It is better to concentrate on physical operation, while leaving the commercial operation to generators – traders – and distributors. *Second*, forcing the primary distribution company to be default provider raises the risk of the operator (for example, entry of traders or other distributors may cream-skim the primary distributor, which may be left with insufficient funds to finance operation and expansion). *Third*, the Electricity Act allows entities to disconnect consumers that do not fulfill their financial commitments; this is not respected in practice. *Fourth*, the process to remove licenses is relatively lax. Levies on electricity can be increased by the regulator only subject to a later control by Parliament,[35] increasing investors' risk. However, the possibility to write the details of power supply agreements in the license may be an example of reducing opportunistic risk by the dominant public firm if private generation of electricity increases

    c. A revision of energy price and distribution margins to cost-reflective levels (discussed below) may induce entry in the medium term. The agency should be ready to instrument the law to define the operation rules in the generation segment (dispatch, pricing). The review of regulatory principles in this section, and Appendix C provides basic guidelines to start in such areas as the choice of market rules and benchmarking.

Petroleum Sector

71. ***Licenses.*** The Petroleum Act stipulates that only licensed petroleum companies may procure, sell, or produce petroleum products, for a fixed but renewable period. Procurement licenses allow the company to purchase petroleum products (such as gasoline and diesel) and sell them in bulk to other licensees under open, transparent, and competitive conditions. Production licenses allow the company to construct, own, and operate facilities to produce petroleum products, and to sell to procurement or retailing licensees (and to end users, with the authority's approval). Retailing licenses allow the company to purchase petroleum products from

[35] The levy must be paid until Parliament abolishes it. Therefore, the investor faces the risk of a long parliamentary debate.

procurement or production licensees and sell them to customers. Licensees shall comply with consumer standards, as well as health, safety, and environmental standards, provided by the authority. The license application and conditions give some room for the authority's discretion on the licensee's business operations. For example, the license conditions are "as may be prescribed or as the Authority may reasonably determine in the circumstances," or the license may be canceled if the Authority finds that "the financial position of the licensee is such that it is unable to fully and efficiently discharge the duties and obligations imposed on it by the license."

72. ***Regulatory Attributes.*** Formally, the Petroleum Act vests the Petroleum Regulatory Authority (PRA) with the power of a Competition Agency in petroleum products markets. This Authority may prescribe the price of petroleum products in consultation with the Minister of Energy and Power Development—in which case it must take into account the landed cost of such products. The Authority may require that the National Oil Company of Zimbabwe (NOCZIM) maintain minimum stocks of petroleum products as strategic reserves. In practice, and in spite of the deregulation in the fuels market, the Government puts a ceiling on the prices that can be charged in the domestic market based on a formula that takes into account the import price.
73. ***Price Stabilization Fund.*** The Act establishes a Price Stabilization Fund with homonymous purpose. The stabilization functions through subsidies for the local production of fuel, or contributions approved by the Minister of Energy and Power Development. Currently, the main revenue is a fuel price stabilization levy collected from end users that are exposed to the fluctuations in the price of fuels.
74. ***Recommendations*.** First and foremost, it is important to create a regulatory agency for the petroleum sector that is based on principles of independence and autonomy. Second, it is advisable to separate regulatory and competition roles in the market. Mixing the antitrust-agency and price-fixer roles in PRA seems to be a contradiction and may be detrimental to efficiency.

Railways Sector

75. ***Regulatory Framework*.** In the railways sector, the regulatory framework is a combination of Ministerial tasks and the public enterprise's legislation that is the Railways Act. According to this Act, NRZ is responsible for operating, maintaining, and expanding the railways network (in the latter case, by Ministerial requirement). NRZ can issue bylaws related to the management and operation of the railways.
76. ***Intermodal Transportation.*** There is a coordination problem between trucks and railways operators. NRZ competes with trucks, which charge a higher tariff per ton-km but provide faster service, which is more valued by companies that deliver high value added products in time.
77. ***Regulations***. Tariffs are not formally regulated. However, NRZ must report to the Minister of Transport and Infrastructural Development for approval. On the other hand, NRZ self-regulates on control and safety matters, while the Minister may make additional regulations to enforce the Act.

Roads Sector

78. ***The Minister of Transport and Infrastructural Development and Road Authorities.*** The Roads Bill defines three main functions of the Minister of

Transport and Infrastructural Development related to roads: (a) to plan, design, construct, maintain, rehabilitate, and manage any road in Zimbabwe at an acceptable level of safety, directly or indirectly (contracting out); (b) to develop policies to guide the planning for the optimum development, utilization, protection, and (internal and international) access of the country's roads in the national interest at the minimum cost; (c) to ensure equitable and efficient allocation of resources available for investment in road infrastructure, and to preserve resources invested in road infrastructure. In pursuing these goals the Minister has several regulatory powers, including: (i) the prescription of standards to be maintained in the planning, design, construction, maintenance, operation, and rehabilitation of roads (road authorities are responsible for implementation); and (ii) the regulation of persons contracted by road authorities to perform the tasks detailed in (i).

79. ***ZINARA.*** ZINARA gives directions to the authorities to prepare road work programs, to ensure compliance with the standards prescribed by the Minister of Transport and Infrastructural Development, and to ensure better utilization of the funds from the Road Fund. The Authority also sets rules on the standard procedures to be adopted by road authorities in preparing road work programs and budgets, and gives directions to and prescribes the duties of road authorities in connection with the supervision to be exercised over the execution of works, among other tasks.

80. Even though ZINARA has powers to fix road user charges in consultation with its Ministry, this has not been happening. Rather, there have been ad hoc decisions with little involvement of ZINARA (an example is a recent attempt by ZINARA to set road user charges at twice the current level, with little implementation success).

81. ***The Road Fund.*** The Roads Bill creates the Road Fund with the purpose of providing a stable, adequate, secure, and sustainable source of funding for maintenance works in Zimbabwe. Funds are to be allocated to road authorities for the purpose of maintaining road works. The Fund consists mainly of road user charges, which come from: (a) fuel levies; (b) vehicle license fees payable according to the terms of the Vehicle Registration and Licensing Act; (c) heavy vehicle surcharges levied under the Vehicle Registration and Licensing Act; (d) fees payable for exemptions in respect to overloading vehicles; and (e) international transit fees paid according to the terms of the Road Motor Transportation Act. ZINARA distributes the funds with oversight by the Minister of Transport and Infrastructural Development, following a budgeting process. This process begins with the Minister and road authorities submitting a development and maintenance works program and the corresponding budget to ZINARA. The Authority consolidates them into a single national program and allocates grants to road authorities following general criteria that respect the main objectives delineated by the Minister and that balance an appropriate split of funds among roads of different classes, taking into account needs based on the condition of the road network and class and characteristics of roads. The Roads Bill also creates the Department of Roads Fund, with the purpose of financing the road works submitted by the Minister and implemented by the Department of Roads. The Fund consists mainly of grants obtained from the Road Fund.

82. ***Fuel levies.*** Fuel levies are collected by NOCZIM and remitted to ZINARA, while road user charges are collected by Zimbabwe Revenue Authority (ZIMRA), which retains a share and submits the remaining revenue to ZINARA. Given the participation of more than one entity in collection of revenues, there may be delays

in fuel levy remittances and leakages in the road user charge collection as well as commission levels above costs.[36]

83. ***Recommendation.*** A National Transport Policy (described in MEPIP, 2010) that provides an integral view on the sector is advisable. If the Government grants road concession, a regulator should be set in the sector. In that case, it might be better to have ZINARA as the regulator, and not the Ministry of Transport and Infrastructural Development, who is evaluating the concessions and probably granting them.

Water and Sanitation Sectors

84. ***Regulation***. The Water Act regulates the management of water, while the regulation of water and sanitation services is guided by other Acts (such as the Mines and Minerals Act, Urban Councils Act, Rural District Councils Act, and Environment Act). The Water Act vests the Minister of Water Resources Development and Management with the development of policies to ensure the availability of water and its equitable and efficient allocation, subject to quality and environmental requirements. The Minister regulates quality and consumer-protection standards for water supply provided by any person and ensures that affordable clear water reaches underprivileged communities. The Minister may also issue regulations regarding permits (issue, amendment, or withdrawal) and the fee charged to permit holders. The hierarchical structure in the management of water includes a secretary, officers, ZINWA, Local Authorities, and catchment councils.[37] There is overlap in the roles of the agencies that participate in the sector and also deterioration in the coordination arrangements. The Water Policy has not been finalized since 2004. The institutional arrangements need improvement as there are conflicting roles between ZINWA and Local Authorities, related to mandates and ownership of water supply infrastructure.

85. ***Permits.*** ZINWA and operators need a permit to extract and use water, and dispose wastewater. The permits last for 25 years and may be renewable. These permits are for own use and sale, in which case the permit must include such authorization.

86. ***Water Fund.*** The Act creates a Water Fund to clean up pollution and alleviate environmental effects associated with water. The main funds are fees imposed to permits to discharge or dispose wastewater. These funds have not been substantially used for the intended purposes, resulting in disgruntlement from those paying the fees and fines.

87. ***Recommendations.*** There is neither a unified Act for regulation of water and sanitation nor a Regulatory Agency in this sector. Some proposals have arisen to create an independent Water and Sanitation Regulation Commission (MEPIP, 2010), but this is not necessarily a problem if the Government decides that services should be provided at a decentralized level. In that case, the Central Government may decide to issue guidelines and rest on decentralized provision and control (this standard practice in many countries).

Telecommunications Sector

88. ***Licenses.*** POTRAZ has the independent power to issue individual licenses for postal services; radio stations (in this case, the Broadcasting Corporation can be the

[36] See details in World Bank (2009f).

[37] Catching Councils are decentralized organizations responsible for managing the catchment and use of water.

only licensee); cellular telecommunications; private telecommunication; and telecommunications (in this case, the license may allow radio communications, fixed-line telecommunications, telegraph, telex, satellite telephone, Internet, electronic mail, and leasing of telecommunication lines, and gives power to the Minister of Information Communication Technology to determine other services for the purpose of this section). The Act gives POTRAZ discretion to define the duration of the licenses (15 years for cellular phone licenses, and 20 years for fixed telecommunication licenses) and renew them. The Act includes standard license provisions, like the requirement that P&T licenses (fixed and cellular) must include facilities for emergency communications and make the communication services available to under-serviced areas. The current legislation allows for individual licenses. This is a restriction in a dynamic sector where international experience indicates a significant role for triple-play (telephone, TV, and Internet). A new ICT bill (already mentioned in several documents; see World Bank, 2009e; MEPIP, 2010), will expand the scope of single-purpose licenses to universal licenses.

89. ***Universal Service Fund.*** Besides the license fees and charges, operators are also required to contribute to a Universal Service Fund (USF), which is under the control of the POTRAZ Board (acting as a trustee). USF revenues are collected mainly from license fees and are intended to be used to standardize P&T services, maintain high quality of services, assist needy persons in obtaining access to the services, finance the expansion of P&T services in areas with low coverage, finance training programs for the sector, and the like.

90. ***Interconnection.*** Parties may agree to interconnection among networks, subject to the Authority guidelines and approval. In case of disagreement, POTRAZ may regulate the conditions of interconnection.

91. ***Royalties*.** Throughout the world, communication services that use the radio spectrum pay royalties. Such is the case for cellular companies, radios, TV, and taxis, for example. In Zimbabwe, royalties are being paid only by the Zimbabwe Broadcasting Company (ZBC), the only licensed broadcaster.

92. ***Recommendations.*** There is an urgent need to manage the radio spectrum in the national interest, significantly enhance is contribution to the budget, considerable extend the coverage of broadcasting and plan the switch-over to digital broadcasting. The enactment of the ICT Bill is an important prerequisite for the eventual optimal use of the radio spectrum.[38]The Government must also recognize that ICT operators compete in an integral market that covers telecommunications, TV, and Internet, and other technologies, and amend the regulatory framework that covers service provision, access, and interconnection accordingly. The role of the USF is key for underserved urban areas and rural areas to have access to the technology.

(iii) Tariffs

93. **Tariffs should reflect incremental costs of services, subject to cost and demand conditions and profitability constraints.** To pursue different goals, regulators implement low-consumption and/or access schemes financed with direct subsidies or cross-subsidies. Tariffs based on price cap principles are designed to pursue cost reduction and make the operator a residual claimant of profits, while tariffs based on

[38] See World Bank (2009e).

cost-plus principles are usually designed to align prices to costs, but sacrifice incentives to reduce costs.

94. **Until February 2009, neither of those principles was applied in Zimbabwe**. Tariffs for services rendered by parastatals were set at nominal levels and diluted with hyperinflation. With the introduction of the multi-currency regime, tariffs increased sharply, in some cases to cover operation and expansion costs (TelOne), while in others they still run below costs (ZESA). As described in the next sections, two pricing principles emerge: cost-plus regulated tariff setting and free tariff setting (although with some restrictions).

Electricity Sector

95. **In the electricity sector, ZERC is responsible for defining the pricing methodology and sets prices and tariffs (after consultation with the Minister of Energy and Power Development).** Formally, tariffs should be set on a cost-plus principle. However, they are being revised once a year to cover budget costs and capital expenditures partially, with a present 8.5 percent rate of return (see figures in next paragraph). All components of the tariff, including the price of the commodity electricity, are revised and approved at the same time,[39] because at the moment there is no need to distinguish the segment of generation from those of transmission and distribution.

96. **According to the regulatory framework, tariffs across categories should be set to phase out or substantially reduce cross-subsidies, although allowing for lifeline tariffs for some customers and subsidies under the Rural Electrification Fund.** In practice, however, low tariffs seem to be an unsolved problem in the electricity sector. Thus, long-run economic signals to invest in the sector are very poor. The average end-user tariff for ZESA is US$ 6.5 cents per kWh, while ZERC estimates the economic cost to provide the service at US$ 9.8 cents per kWh,[40] and back-of-the envelope estimates of the generation cost of a new thermal plant based on coal (excluding environmental cost) is in the range of US$ 12 to 15 cents per kWh. The average residential consumer should be paying a much higher price than the current 6 cents paid on average during 2009. Regional tariffs range between US$ 8 cents/kWh and US$ 12 cents/kWh.[41]

97. The tariff structure is standard, differentiating two groups. Residential users pay a fixed charge and a variable increasing-block charge based on the consumption level (Table 4). The first 50 kWh per month are subsidized at US$ 1cent per kWh and apply to all residential users. (The current tariff schedule treats basic consumption of electricity as a need, regardless of willingness or ability to pay). There is a particular innovation of prepaid service (at a flat or steep rate) that offers users the opportunity to save the fixed charge in exchange for improving collection

[39] The Tariff Code is outdated regarding indexing. It specifies that the tariff is indexed periodically according to the evolution of the exchange rate, domestic inflation, and coal price.

[40] This situation is not new in Zimbabwe. For example, the average tariff was US$ 2.6/cents per KWh in 1996/97, while the opportunity cost (to cover operation and expansion) was estimated at US$ 6 cents per KWh.

[41] Distribution tariffs for Johannesburg, South Africa, average US$ 8 cents per kWh (6 cents for residential, 8 cents for industrial, and 11 cents for commercial users). Distribution tariffs for Windhoek, Namibia, average US$ 12 cents per kWh (11 cents for residential, 10–12 cents for industrial, and 15 cents for commercial users).

rates. Low-demand, nonresidential users pay a mix of a fixed rate and flat variable rates. High-demand users pay fixed and capacity charges and seasonal prices. Noticeably, the value of off-peak (US$ 2 cents per kWh) and standard energy (US$ 3 cents per kWh) is very low compared to the average rate of US$ 6.7 cents, and low even compared to other countries (the off-peak value is 4.5–4.7 cents/kWh in Johannesburg and US$ 3.7–3.9 cents/kWh in Windhoek). Moreover, the difference between peak and off-peak price is also low: US$ 6 cents regardless of the season of the year (during the winter season, the difference is US$ 10 cents/kWh in Johannesburg and US$ 18 cents/kWh in Windhoek).

Table 4. ZESA's Tariff Schedule Excluding VAT, February 2010.

Conventional Meter		Residential	Residential Prepaid Standard	Residential Prepaid Stepped	Non-residential Users (low demand)
Fixed charge ($/month)		6.08			31.99
Variable charge ($/kWh)	1 to 50	0.01	0.06	0.01	0.07
	51 to 300	0.06	0.06	0.06	0.07
	301 +	0.10	0.06	0.09	0.07
Large Users - High demand					
Mining, Industrial, Commercial and Pumping Works, Agricultural, Government, Municipal, Mission Schools, Hospital and Clinics					
		11kV Supply	33kV Supply	11kV Supply	33kV Supply
Fixed charge ($/month)		88.14	88.14	88.14	88.14
Capacity charge (per unit of demand)		6.97	5.12	6.97	5.12
Variable charge ($/kWh)	on Peak	0.08	0.08	0.08	0.08
	Standard	0.03	0.03	0.03	0.03
	off Peak	0.02	0.02	0.02	0.02

98. **Summing up, the energy price and electricity tariffs are low in Zimbabwe, compared both to domestic estimates of costs and neighbor countries levels.** Given the current conditions of the country, affordable electricity for a certain level of consumption and users is unavoidable, but the current tariff schedule covers all users. In the short term, a price and tariff increase should be considered. In the medium and long term, if sufficient investment in generation occurs, tariff schedules could be revised to higher rates based on efficiency. In addition, tariff realignment should include potential gains from efficient operation of the grid (real vs. potential transmission and distribution losses).

99. **Tariff increases should be accompanied with inclusion policies.** A tariff increase may put significant burden to low-income users. Therefore, the GoZ should define the desired level of inclusion (for example lifeline tariffs or other mean of social tariff). In general, social tariff programs are effective when they are well targeted. Also, they put a burden on the electricity company, which should be minimized. The

funding of this program may come from direct subsidies or cross-subsidies. The former are the preferred instrument, but imply public resources which should be transparently managed in this use.

100. **Although the regulatory framework contains provisions to cut services in case of nonpayment, this has been a sensitive issue that left ZESA with collection problems after the dollarization of the economy.** Poor infrastructure conditions and Government deficits that do not allow for subsidies demand urgent decisions like sending proper signals to end-users regarding consumption education (to rationalize consumption) and service cuts (otherwise, consumers do not understand that electricity has to be paid).

Petroleum Sector

101. **Given that the Petroleum Regulatory Agency (PRA) is not yet constituted, the Minister of Energy and Power Development sets prices of petroleum products taking into account the landed cost of such products.** In the case of NOCZIM, in spite of the deregulation in the fuels market, the Government places a ceiling on petrol, diesel, and Jet A1 prices (Table 5). This is another cost-plus formula based on the import cost, pipeline charges, administrative costs for the import process, levies and taxes, distribution, and margins for the wholesaler, and retailers.

Table 5. Fuel Prices Cost Build-Up (US dollars per liter).

		Diesel	Petrol
1	FOB Price	0.619	0.596
2	Freight Charges	0.057	0.057
3	Total Landed Cost = 1 + 2	0.676	0.653
4	Import Duty	0.16	0.2
5	Carbon Tax	0.013	0.04
6	Noczim Debt Redemption	0.028	0.082
7	Zinara Road Levy	0.01	0.04
8	Total Taxes and Levies = 4+5+6+7	0.211	0.362
9	Administrative Costs	0.021	0.021
10	Total product cost landed in Masasa = 3+8+9	0.908	1.036
11	Distribution Costs	0.05	0.05
12	Total Costs = 10 + 11	0.958	1.086
13	Oil Company Margin (7%)	0.067	0.076
14	Price to Dealer = 12 + 13	1.025	1.162
15	Dealer Margin (7%)	0.072	0.081
16	Pump Price = 14 + 15	1.097	1.243
17	Rounded Pump Price	1.1	1.24
18	Net of tax & levies Pump Price = 16 - 8	0.886	0.881
19	"Local" Costs = 11 + 13 + 15	0.189	0.207

Note: Effective November 2009.

102. **There are several problems with the pricing of fuels in Zimbabwe**: a) The Road Levy is charged to all consumers (manufacturers, farmers, etc.) when it should be charged only to those that use the road. b) Road charges in diesel should be higher than in petrol, given that trucks wear down the roads in a higher proportion than its relative higher consumption per kilometer. c) Fuel taxes (carbon tax and import levies) are lower for diesel than for petrol. d) "Local" costs (distribution costs plus the margins for wholesalers and retailers, are very high. Although this may reflect the low consumption levels of Zimbabwe they more than double the costs in the United States. For sales to non-road users, it is likely that oil companies make discounts from these prices, given that there are about 80 importers of fuels into the country.

Railways

103. **Tariffs are not formally regulated in the railways sector.** However, NRZ must report to the Minister of Transport and Infrastructural Development for approval. As mentioned, NRZ competes with trucks that charge a higher tariff per ton-km (US$ 11 cents compared to US$ 6 cents) but provide faster service and discounts if the loader can guarantee a return trip full.

Roads

104. ZINARA revenues are composed of a variety of fuel and transit fees and levies. First, fuel levies are US$ 4 cents per liter of petrol and US$ 1 cent per liter of diesel, which is collected from the importers. ZINARA collected US$ 6.2 million during 2009 on this source, about 63 percent of the theoretical collections estimated by multiplying NOCZIM imports of petrol and diesel by their tax rates (Table 6). Second, transit fees are US$ 10 every 100 kilometers, which are charged to all trucks not registered in Zimbabwe. This was the most important source of revenue during 2009 (US$ 11.6 million in nine months). ZINARA pays a 20 percent commission to the border posts. Third, overload fees collected from trucks in the weight bridges are a minor source of revenues. Fourth, tolls fees have become a new important source of revenues since toll collections started in August 2009. Fifth, ZINARA is planning to collect vehicle licenses since the beginning of 2010. These fees are charged today by local authorities at different rates across the country. This is projected to generate about 50 percent of total revenues in 2010. An issue to solve is the minimization of commission costs, delays and leakages in the remittances of fuel levies and road user charges. This may include a study on costs of services rendered by alternative agencies.

105. **In spite of the recent recovery in the collection of revenues, the total budget of ZINARA is not enough to cover even routine maintenance of roads budgeted by ZINARA.** In spite of the recovery in the collection of revenues, the total budget of ZINARA in 2010 of US$ 67 million would not be enough to cover even routine maintenance of roads according to ZINARA's estimated needs (US$ 150 million).

Accordingly, there will be no money left for periodic maintenance that is required to rehabilitate some roads.[42]

Table 6. ZINARA Budgets and Actual Collections (US dollars).

	Budget 2009	Actuals 2009	Budget 2010
Fuel Levy	18,242,000	6,208,110	8,000,000
Overload Fees	349,500	127,817	130,000
Transit Fees	11,625,000	16,273,502	19,000,000
Abnormal Load Fees	144,540	104,380	120,000
Interest Received	33,125	137,477	174,000
Toll Fees	8,400,000	5,663,597	14,832,000
Vehicle Licencing			25,000,000
Others		200	
Total Revenues	**38,794,165**	**28,515,082**	**67,256,000**

Source: World Bank and ZINARA.

Water and Sanitation

106. **Currently, there is need to review the current regulations governing the water sector to ensure a more unified Act.** The process of tariff-setting starts with the Authority presenting the budget with the proposed tariff to the corresponding City Council. After the Council approves the tariffs, the Minister of Local Government, Urban and Rural Development makes the final decision. Although decentralization in the provision of water is common, the intervention of the Central Government of Zimbabwe is rather peculiar; the GoZ holds de facto power to veto tariffs approved by the Councils, which represent the local stakeholders. In the case of raw water provision and clear water in small towns, ZINWA proposes a tariff to be approved by the Minister of Water Resources and Management.

107. **As in the electricity sector, water tariff structure falls under the family of increasing-block tariffs (IBT).** IBTs are applied both in urban cities (Harare Water Authority and Bulawayo Water Authority) and rural centers and small towns (ZINWA)—with a differentiation made between low-density areas and high-density areas. The main reason for this differentiation is the need to constrain consumption due to scarcity conditions and link prices (presumably) to ability to pay (Table 7). Assuming a 100 percent collection rate, HWA would have enough funds to spend on maintenance and also replace the distribution grid. However, their budget assumes investments at a pace of 50 km out of a water and sewerage reticulation of 5,000 km, which is inconsistent with the system's current conditions and with long-run availability of the service. In the case of BWA tariffs for residential consumers do not even cover the costs estimated by BWA at US$ 0.54/m3. In the medium term, as soon as a maintenance and expansion plan is envisaged in Zimbabwe, tariffs will have to be adapted to investment needs. Adequate tariffs do not ensure an adequate service if costs are not minimized. This requires a strong and professional regulator.

[42] However, the lack of revenues would be less demanding under different scenarios. For example, a recent estimate of maintenance and investment needs by the World Bank (2009f) assessed US$ 130 million needs for a 3-year plan.

Table 7. Tariff Structure: Harare and Bulawayo Water Authorities, and ZINWA.

		HWA (residential)		HWA (non-residential)	BWA (residential)		BWA (non-residential)		ZINWA (residential)		ZINWA (non-residential)
		High density	Low density		High density	Low density	Low cons.	High cons.	High density	Low density	
Fixed Charge ($/month)		5.00	10.00	50.00	13.16	13.16	37.74	224.94	7.00	7.00	30.00
Variable charge ($/m3)	1-10	0.20	0.30	0.40	0.06	0.06	0.54	0.54	0.40	0.80	1.04
	11-20	0.20	0.30	0.40	0.06-0.13	0.06-0.18	0.54	0.54	0.96	0.96	1.04
	21-30	0.30	0.40	0.40	0.13	0.18		0.54	1.04	1.04	1.04/1.12
	31-40	0.40	0.50	0.40	0.13	0.18		0.54	1.04	1.04	1.12
	41-50	0.40	0.50	0.40	0.13	0.18		0.54	1.12	1.12	1.12
	51-100	0.50	0.60	0.40	0.13	0.18		0.54	1.29	1.29	1.29
	>100	0.60	0.70	0.50	0.13	0.18		0.54	1.29	1.29	1.29
Sewer charge ($/month)		5.00	10.00	10.00	2.99	5.03					

Source: HWA, BWA, and ZINWA.

108. **Water tariffs in Zimbabwe are low compared with regional neighbors.** Water tariff in Harare are in general low compared with those in Namibia, Botswana, South Africa, Zambia, or Swaziland, mainly for consumptions over the base of 10m3 (Table 8). This is not the case with ZINWA, but this comparison may hide the fact that ZINWA covers small towns with a higher cost than operators in larger cities. Tariff structure in most cities also show the characteristic of increasing-block tariffs (marginal price increasing in volume) related to scarcity of water (although in some cases, such as Windhoek, Namibia, it is not evident from the table because users in that city also pay a fixed sanitation charge).

Table 8. Comparison of Cost for Water and Sanitation, Selected African Cities, 2009 (US$/m3 for different levels of consumption).

	Windhoek	Gaberone	Johannesburg	Lusaka	Mbabane	HWA	BWA	ZINWA
	Namibia	Botswana	South Africa	Zambia	Swaziland	Zimbabwe	Zimbabwe	Zimbabwe
10 m3	2.18	0.34	1.53	0.30	1.19	1.20	1.78	1.10
20 m3	1.85	0.77	1.53	0.32	1.28	0.70	0.95	1.03
30 m3	1.74	1.04	1.55	0.33	1.38	0.63	0.68	1.03

Source: HWA, NWA, ZINWA (high density areas), and Global Water Intelligence.

Telecommunications Sector

109. **The process of tariff-setting and review requires companies to submit a proposal to the Postal and Telecommunications Regulatory Agency of Zimbabwe (POTRAZ), which reviews and then approves the new tariffs.** Although not detailed in the Act, POTRAZ is currently following the ITU methodology of tariff-setting (applying the principle of fully distributed costs), on a cost-plus principle. It determines both net fixed asset cost (the network structure split up in major elements of national and international transmission, national and international switching, and access) and operating cost (finance charges, cost of terminal traffic, purchases and inventories, transport costs, personnel charges,

payment of external services, provision for bad debts and taxes), and adds a cost of capital (which is 15 percent).[43] In parallel, POTRAZ follows a telecommunications index to assess whether tariffs should be reduced.

110. **Fixed line telephone tariffs are high by regional standards.** Table 9 compares basic figures with fixed-line operators in neighboring countries. TelOne charges a fixed monthly fee and charges related to use (Table 10). Compared to charges in neighboring countries, TelOne charges average-to-low installation and monthly charges but average-to-high user-charges, especially in trunk calls and off peak (Table 9). This may explain the EBITDA of 60 percent on an accrual basis in 2009.[44] Notwithstanding these figures, the comparison of telecommunications tariffs across countries is difficult because of different technologies, consumption patterns, and other features. Box 1 discusses the case of fixed telephony in more detail.

Table 9. Comparison of Tariffs Charged to Residential Users by Fixed Operators, Selected Countries (US dollars, excluding VAT).

	Installation Charge	Monthly fee	Trunk call per minute		Local call per minute	
			peak	off peak	peak	off peak
TelOne (Zimbabwe) *	40.00	5.00	0.10	0.09	0.05	0.04
Telkom (S.A.) Plan 1**	51.31	16.28	0.06	0.02	0.06	0.02
Zamtel (Zambia)	10.78	4.30	0.04	0.03	0.04	0.03
BTC (Bostwana)	34.04	11.00	0.10	0.06	0.06	0.04
Telecom (Namibia)	35.08	7.80	0.12	0.08	0.06	0.03

Source: International operators' Web pages and TelOne.

Notes: Data are as of January 2010. All schemes correspond to post-paid urban services. *Costs per minute of trunk call are an average per distance; cost per minute of local call assumes full consumption of units (3 minutes during peak, 4 minutes during off peak). ** Closer calling plan 1 (see Box for other options with lower marginal rates); off peak charge assumes a 10-minute call. Usually, use charges are similar, but installation charges and monthly fees are higher for business users.

Box 1. Fixed-line Telecommunication Tariffs in Africa

The tariff structure in the telecommunications sector of African countries usually consists of a two-part tariff: a fixed fee and a variable charge, which may or may not differ for residential and business users. Recent innovations include a bundle of minutes, priced within the fixed fee.

For instance, in Namibia, the fixed-telephone operator—Telecom—offers service with a uniform connection charge and a uniform cost of trunk calls (US$12 cents/minute during peak times and US$ 8 cents/minute during off-peak times) and local calls (US$ 6 cents/minute during peak times and US$ 3 cents/minute during off-peak times). Costs are the same for both residential and business users, differing only in the monthly fee (US$7.80 for residential users and US$8.70 for business users).

[43] Neither ZERC nor POTRAZ provide a justification for the cost of capital applied to the tariffs (8.5 percent and 15 percent, respectively). In other countries, the Acts or regulations either ensure a band for the return on assets (10 percent in Chile and 12 percent in Peru in real terms in local currency, with a band of plus/minus 2 percent) or the methodology is described in the law with restrictions to amend it (Australia). The justification for this "lock up" rate or methodology is the signal to investors that their investments will not be "expropriated" through low tariffs that do not allow them to cover the opportunity cost of capital

[44] In addition, the rate-to-cost ratio may be even higher in the case of TelOne because assets are highly depreciated.

In Zambia and Bostwana, the phone operators—Zamtel and BTC, respectively—follow a similar model. Zamtel charges a monthly fee of US$4.30 to residential users and US$8.60 to business users, but US$ 4 cents/minute during peak times and US$ 3 cents/minute during off-peak times for trunk and local calls to all users. BTC charges a monthly fee of US$11 to residential users and US$18.50 to business users. Trunk calls cost US$ 10 cents/minute during peak times and US$ 6 cents/minute during off-peak time. Local calls cost US$ 6 cents/minute during peak times and US4 cents/minute during off-peak times.

Zimbabwe's operator—TelOne—does not segment per user. A local call costs US$ 15 cents/unit (up to 3 minutes during peak times and up to 4 minutes during off-peak times). A long-distance call during peak times range from US$ 9 cents/minute for distances of 20–40 km to US$14 cents/minute for distances over 480 km (off-peak rates range from US$ 8 to US$13 cents/minute, respectively).

In South Africa, the operator—Telkom—follows a pattern of tariff structure similar to cellular phone operators throughout the world. Telkom offers a variety of plans that include free calls. "Closer Calling Plan 1" charges a monthly fee of $17 that includes 30 minutes free during peak-time. Additional local and long-distance calls during peak times cost US$ 6 cents/minute. Calls during off-peak times cost US$ 17 cents per call, up to 60 minutes. "Closer Calling Plan 3" charges a monthly fee of US$ 40 and includes 1,300 minutes free during peak-time and free use during off-peak times (if the calls last for less than 1 hour). "Closer Calling Plan 4" adds US$16 per month for ADSL Internet access. Additional charges for calls to mobile phones and extra use during peak times apply at normal rates.

Given the variety of tariff schedules, the comparison of telephone tariffs becomes difficult. The presence of calling plans that offer a bundle of minutes in return for a fixed fee indicate that marginal costs in these countries are already reaching zero. For other countries, this situation becomes a benchmark for competitive tariff setting. However, this seems not to be the case in Zimbabwe: TelOne owns an old and depreciated infrastructure (the marginal cost is possibly equal to zero, for a given capacity), and therefore the incremental cost of switching technology is significant.

Source; Authors' compilations

Table 10. Telecommunications's Tariff Schedule, January 2010 (US dollars, excluding VAT).

	TelOne		**NetOne***		**EcoNet****	
Rental (month)	5.00					
	Peak	Off-peak	Peak	Off-peak	Peak	Off-peak
Local call peak (3 minutes)	0.15					
Local call off-peak (4 minutes)		0.15				
Long distance calls (1 minute)						
20 - 40 km	0.09	0.08				
40 - 80 km	0.10	0.09				
80 - 130 km	0.11	0.09				
130 - 240 km	0.12	0.10				
240 - 480 km	0.13	0.11				
> 480 km	0.14	0.12				
Cellular call (per minute)						
EcoNet	0.18	0.15	0.22	0.21	0.20	0.19
Telecel	0.18	0.15	0.22	0.21	0.22	0.21
NetOne	0.18	0.15	0.20	0.19	0.22	0.21
TelOne			0.18	0.17	0.18	0.17
SMS on and off net			0.08	0.08	0.08	0.07

Source: Authors' compilations based on telecom operators' tariff schedules.

Notes: Only charges for domestic calls are reported. * Rates correspond to Easy Call plan. Residential (One Select) and business plans include a monthly rental and lower charges. ** Rates correspond to Buddy plan. Business plans (Business Parna Excel) include a monthly rental and equal charges.

111. **In Zimbabwe, the pricing scheme for domestic cellular calls is almost flat across companies, with some lower values for calls terminated in the fixed line.** An international comparison of charges by mobile operators is more difficult than a comparison of fixed-line charges (see Table 11 and Appendix D). There is a wide range of options that distinguish between prepayment and post payments schemes with different quantities of implicit or explicit free minutes to different locations, with options to call to one or more numbers for free, and so on. Both cellular-to-cellular calls and fixed-to-mobile calls are similar to regional averages but higher than rates charged in several packages, especially during off-peak time.

Table 11. Comparison of Tariffs Charged by Fixed and Mobile Operators, Selected Countries (US dollars, excluding VAT).

	Intra Urban Tariff on net		National calls mobile to fixed		Options of "zero" price
	peak	off peak	peak	off peak	
EcoNet (Zimbabwe)	0.2	0.19	0.18	0.15	No
NetOne (Zimbabwe)	0.2	0.19	0.18	0.15	No
MTN (S.A.)	0.18-0.34	0.13-0.27	0.18-0.34	0.13-0.27	Yes
Vodacom (S.A.)	0.20-0.21	0.11-0.20	0.21-0.32	0.11-0.20	Yes
Zain (Kenya)	0.08-0.09	0.03-0.09	0.09-0.18	0.09-0.18	No
Zain (Zambia)	0.22-0.27	0.13-0.15	0.32-0.53	0.27-0.36	Yes
Zain (Malawi)	0.20-0.33	0.12-0.24	0.20-0.44	0.15-0.30	Yes
CellOne (Namibia)	0.11	0.11	0.11	0.11	Yes
Vodacom (Lesotho)	0.16-0.36	0.11-0.14	0.18-0.32	0.11-0.14	Yes
MTN (Zwaziland)	0.18-0.41	0.12-0.41	0.24-0.41	0.12-0.41	Yes

Source: International operators' Web pages and TelOne. In those cases that the option of "zero" price is allowed, the rate per minute is zero while the user respects a constraint (explicit free minutes or implicit free minutes in a package).

Note: Data are as of January 2010.

IV. Public-Private Partnerships

Conceptual Framework

112. The private sector can participate in the management of infrastructure and public utilities in different ways, ranging from full privatization, intermediate-scope contracts that involve investments and operation (concessions), to narrow-scope contracts that involve the basic supply of inputs or specific services (outsourcing). The different types of public-private partnerships (PPP) differ in several dimensions, such as ownership, allocation of risks, investment responsibilities, operative requirements, and contract incentives; these dimensions are discussed in detail in Appendix C.

113. **Around the world, the common type of participation in sectors such as telecommunications and electricity generation is privatization, accompanied by**

structural sector reforms, regulations and pro-competition measures. In some other sectors, such as airports, roads, freeways, railroads, water and sanitation, and downstream segments of the energy sector, there are usually constitutional and legal requirements that narrow the alternatives to intermediate types of PPP, with more or less private participation in the building and operation of infrastructure, and without transferring the assets to the private sector.

114. **When the Government needs private sector participation in investments (a factor that is very important in the Zimbabwe economy), the bundling of investment and operation increases incentives to engage in cost-minimization throughout the project life.** However, the possibility of establishing clear rules to guarantee operators' rights (for example, the collection of tariffs) may be a main limitation in some cases. This factor defines the political viability of PPP. In addition, contract specificities are also important for risk-allocation and incentives, such as imposition of service obligations or investment requirements to operators; the guarantees (or lack of them) of exclusivity in a certain territory; the process of tariffs adjustment; and the assessment of assets that form the base of remuneration, which also determine whether a type of PPP arrangement is adequate or not (see Appendix C).

115. **The first dimension to consider when defining PPP arrangements is the use of competitive mechanisms for efficient selection of operators.** The general recommendation is to design a process that ensures transparent selection, optimizes the concurrence of potential bidders while discouraging strategic opportunistic behavior that may results in non-fulfillment or renegotiation of the contract. In particular, the highest transparency is achieved when the competition for the market is structured based on one dimension, while the other dimensions are set in advance (for example, fixing the technical requirements or financial capacity in order to avoid difficulties in choosing the best offer.

116. **The second dimension concerns the management of renegotiation risks.** While renegotiation is a viable option to allocate risks in incomplete contracts (when external factors such as macroeconomic shocks arise), it should be avoided to minimize opportunistic risks (from the Government or the operator) that may arise because of inadequate attention to political and institutional issues, Government tolerance of aggressive bidding, design of faulty contracts, opportunistic behavior by Government (changing rules and effects of a contract), defective regulation, and the like.

117. **The third dimension concerns the way the institutional framework is designed.** The legislative body (Parliament, Congress) should be responsible for defining the regulatory frameworks, while the executive power and regulatory agencies should be responsible for executing day-to-day functions and oversight. The executive power should also be responsible for defining sector policies and delegating regulatory tasks to public agencies—which should be sufficiently protected from political swings. The judicial power role should be to interpret the law and contracts. Various functions must be assigned to various agencies, including planning and identification of projects (for example, by line ministries), prioritization and coordination of projects (Minister of Finance), design of contracts and selection mechanisms for participation of the private sector (PPP agency), control of the execution of contracts (sector regulatory agency) and ex -post control of contracts (monitoring or audit units).

PPPs in Zimbabwe

118. **PPPs are not new in Zimbabwe.** After several years of crisis and hyperinflation, the option of private participation has been taken up again in the government agenda. Although this is a positive sign, several Government agencies are involved simultaneously and overlap in their PPP authority and responsibilities—and some of them are not even functional.

Location of a PPP Unit

119. **The Office of the Deputy Prime Minister (ODPM) has taken steps to set up conditions for PPP.** In March 2009, a Workshop on PPP was held in Zimbabwe. The main objective was to re-emphasize the idea that the private sector is in better condition to provide infrastructure services, while the state is in better conditions to act as an enabler and facilitator, and that PPP could be a mechanism to develop infrastructure and deliver services in a cost-effective and sustainable basis under a context of a shortage of public resources (see details in ODPM, 2009). Proper implementation of PPP would accelerate the development of infrastructure, deliver services in a cost-effective and efficient manner, reduce whole life costs, improve allocation of risks, improve incentives to perform, boost the quality of service, generate additional revenues, enhance public management, encourage job creation, and promote "indigenization" (ownership by indigenous Zimbabweans). For PPP implementation to work, several conditions should be met: (a) feasibility studies should be conducted; (b) transparent tender procedures should be put in place; (c) cost-reflective tariffs should be established that are affordable to consumers and that recognize a reasonable return on investment; (d) PPP agencies should be protected from unwarranted meddling; and (e) the legislative and regulatory frameworks to promote PPP should be reviewed. ODPM (2009) raises some doubts as to whether these conditions could be met because of several challenges, including political and macroeconomic risk, lack of expertise and capacity within Government,[45] currency risks, lack of financial resources in Government, lack of political will and commitment, lack of established and clear legal and regulatory framework, lack of enforcement of contractual obligations, unviable existing tariffs that make infrastructure undertakings economically unviable, brain drain and skills flight. These challenges are a priority in the coming years for the process to work.

120. **It follows from the analysis made by the ODPM that Government activities related to PPP should be centralized in a single agency, a PPP Unit.** Currently, there are overlaps with other offices, in particular, with the Inter-Ministerial Committee on PPP (IMCPP),[46] and also with the State Enterprise Restructuring

[45] A case that was mentioned several times in meetings with parastatals is the lethargic and non-responsible State Procurement Board.

[46] Another Government document on institutional framework (GoZ, 2009c) mentions that the IMCPP, an interim Committee that takes the role of a PPP Unit reporting to the Cabinet, will be taken over by the PPP Unit. Currently, IMCPP is comprised by members of relevant Ministries and Local Authorities and has as main functions the coordination and harmonization of the implementation of the PPP program, to provide an enabling legislative environment, to provide guidelines for PPP, to undertake economic, social and environmental project appraisal, among others.

Agency (SERA) under the Minister of State Enterprises and Parastatals (which is almost nonfunctional).

121. **Regarding the location of the PPP Unit, the ODPM recommends its placement in the Office of the Prime Minister.** ODPM (2009) evaluates at length the pros and cons of a separate or integrated unit within a particular ministry. It weighs a possible conflict of interest, on the one hand, between the role of facilitator of PPPs and that the role of monitor and regulator—which should clearly be separated—and a possible risk of bureaucratic barriers within the chosen ministry, against the (legal and financial) cost of setting up a new independent office, on the other. It argues that a new office, if possible, should separate the design and planning of PPP and the control and follow up of contracts. As a net result of weighing effects, the ODPM proposed that it should be placed in the Office of the Prime Minister (see GoZ, 2009c for more details).

122. **However, the international evidence collected indicates that in the majority of cases, the unit falls under the Minister of Finance.** When it is under other ministries, there is a need to coordinate with the Minister of Finance in matters related to budgeting, fiscal control, taxes, and the like (Table 12). In addition to assisting in identifying and securing strategic partners for the infrastructure parastatals, a PPP unit should also be given the mandate to assist parastatals to raise finance from the local capital markets, and it is in this sense that the Ministry of Finance is better prepared for this task.

Table 12. Location of PPP Unit, International Evidence.

Office of the Prime Minister or President	6
Ministry of Development/Public Works	4
Ministry of Finance	17
SOE Ministry	3
Total Cases	**30**
Separate PPP Unit	7/30

Source: GoZ (2009c). That document reviewed the location of the PPP Unit in 30 countries (including some in the OECD, Latin America, East Europe, Africa, and Asia).

123. **The GoZ issued a document that reviewed the current legislative and regulatory framework in Zimbabwe (GoZ, 2009a).** The document acknowledges that the concessions already implemented were mostly of the build-operate-transfer (BOT) type—a modality that is considered in the Procurement Act (and also the Income Tax Act). It finds pieces of legal framework that are applicable to PPP (such as the PPP Policy Document; the Procurement Act, which defines the BOOT and BOT contracts; and the Income Tax Act, which provides tax incentives to certain types of PPPs). It finds others that constrain the alternatives for private participation (such as the Indigenization and Economic Empowerment Act), or serve as disincentives to private investment (for example, the Reconstruction of State-Indebted Insolvent Companies Act). Others may serve to attract investments and

improve efficiency and accountability (such as the Zimbabwe Investment Authority Act to promote investment in the country, or the draft of the Public Finance Management Bill of 2009 regarding parastatals). Finally, in the case of transport, it clarifies that even though the Roads Act is silent with respect to third-party participation in road construction, such provisions are included in the Urban Councils Act and Rural District Council Act .After the review, the document compares different alternatives for the legal and regulatory framework: keeping the PPP legal framework under the current set of laws; enacting a unique PPP Act; or promulgating a set of regulations under the Procurement Act or under the Public Finance Management Act. The GoZ seems to prefer the last option, based on: the long-term-budget characteristic of PPP; on the requirement to ensure availability of funds before starting the tender procedure; and on the fact that this is the practice in other related countries (the United Kingdom, South Africa, Botswana, and Mauritius). This choice should be discussed in more detail, exploring positive and negative factors posed by each alternative.

The PPP Guidelines

124. **The PPP Guidelines (GoZ, 2009b) provide guidance for PPP projects**.[47] It is a thorough document that covers all stages involved in a PPP process: (i) project inception (at a line ministry or local authority level, with participation of the PPP Unit, going from pre-feasibility study to budgeting, to end up with a short list of projects); (ii) feasibility study (which involves line ministers, the PPP Unit, and advisors to assess specifications, affordability, feasibility, and the like) to get the project ready for PPP; (iii) project approval (by the Minister of Finance, after having assessed funding needs); (iv) PPP procurement through public tender, which involves many phases, from prequalification (by the PPP Unit, with participation of the line ministry or local authority and advisors) to bidding (issuance of documents by the Procurement Board and final selection by the PPP Unit), negotiation of contract details (done by the PPP Unit with participation of the line ministry or local authority and advisors) and winner selection (done by PPP); (v) contract award (done by the State Procurement Board); and (vi) contract execution (followed by the line ministry or local authority), including contract management and project management rules that guide the relationship between the representative of the line ministry and the operator throughout the life of the contract.

125. **The following observations are based on the principles described in the conceptual framework for PPPs.** First, the whole process seems to rest on two parties: the PPP Unit and the project committee (delegated by the line minister) (Appendix C). It is reasonable to have a specialized committee delegated by the line minister, but it seems an excessive burden for a PPP Unit (for example, located in the Office of the Prime Minister, as suggested by the ODPM) to deal with a wide range of PPP Projects. Accordingly, the Government should delve into more details of the Unit's scope in such areas as responsibilities and sector specialization.

126. **Second, the Guidelines make clear the objective of fair, open, and transparent selection of a winner at the PPP procurement stage**. However, they suggest splitting the process into a Request for Qualification (RfQ) stage and a Request for Proposals (RfP) stage, constraining the number of candidates to three or

[47] This topic is discussed further in GoZ (2009c).

four in the RfQ, and requesting the economic component of the bid at the RfP stage after having short-listed the potential candidates from the original list. This procedure contains an important flaw: the constraint on potential bidders (the number should be endogenous to the tender). A second questionable condition is the sequential steps in the process (a bidder will not offer the same amount when facing no, one, two, or more competitors), but this should be traded-off with the cost of preparing the economic offer to all bidders, mainly in large-sized projects.

127. **Third, according to the Guidelines, the Request for Proposals (RfP) stage is a two-way communication tool between the institution line ministry and the bidders.** In particular, the RfP must communicate project data and the institution's requirements to the bidders at earlier stages. A reasonable modification could be the introduction of a stage of Basis and Conditions before the RfQ, which would divulge all the relevant information, upon an entry fee paid by potential bidders.

128. **Fourth, the Guidelines recommendation of delineating the institutional (regulatory, physical, and socioeconomic) environment is right**. However, a discussion of all details of the information to be handled to bidders is beyond the scope of this document.[48]

129. **Fifth, the Guidelines suggest that RfPs should specify technical, empowerment, and price elements of the bid, to be weighted based on a formula**. This is contrary to best practice of limiting the selection variable to one, and constraining those others relevant for the institution. Also, the Guidelines suggest that the scoring methodology and point allocations should not be made public, and that the evaluation must also consider the overall integrated solution offered by the bidder. Several observations are in order. The weighting of technical factors (50–70 percent), citizen participation (5–10 percent), and price (25–45 percent) may tilt the selection of candidates to those with a strong bias against consumers or the Government's budget requirements. By setting constraints on minimum technical requirements and on minimum citizen participation, the selection process would downplay the lowest price or cost. On another side, the hidden characteristic of methodology and point allocation work against the objectives of transparency and fairness and openness. Although the integrated solution by the bidder seems an attractive attribute of the bid, it looks rather ambiguous unless explicitly stated, and again may work against transparency in the selection procedure.

130. **Sixth, the Guidelines foresee a negotiation stage after the committee has selected the preferred bidder and the PPP Unit has agreed.** This is the last stage before contract award, and is based on two premises. First, as stated in GoZ (2009b, page 58): "*Typically, the Institution and the preferred bidder have different perspectives on negotiations. The private party will have made clear, by its submission and by its mark up of the draft PPP agreement, that it is seeking to reduce risk and increase its profits, while the Institution wants to reduce its costs and maximize the value of the services provided through the PPP*." Second, the preferred bidders' offer may have technical (legal, financial, or other) deficiencies. The preferred bidder is invited to meet a negotiation team. If the parties cannot

[48] Two suggestions, in particular, are reasonable: that the institution (for example, the regulatory body)—and not the operator— engage in transparent communication with all stakeholders (users, empowerment participants, and the like) to ensure that their needs are being met, and that the contract must define ex ante clear performance and quality requirements to be met by the operator.

reach an agreement by a certain date, the reserve bidder is invited to enter into negotiations. This second stage is questionable: negotiations imply that both parties, including the Government, must cede a position to reach a solution (otherwise it would be a take-it-or-leave-it meeting between the Government negotiation team and the preferred bidder). This stage should be minimized

131. **Seventh, the Guidelines provide for the possibility of considering an unsolicited bid under certain conditions.** if the infrastructure or service are demonstrably unique, innovative, or exceptionally beneficial to the Institution and the beneficiaries of the service; if it is rendered by a sole provider in Southern Africa; if it is part of the economic planning for the country, or if the reasons for not going through the normal PPP bidding processes are found to be sound by the head of the Institution and the PPP unit (GoZ, 2009b, p.63). The Institution must publish its decisions and the reasons for doing so. This provision is risky for the economy, but the risks can eventually be diminished by the conditions set forth by the Guidelines to finally approve the unsolicited bid (that is, that the unsolicited bid must turn into a solicited bid).

132. **Eighth, the Guidelines suggest making the contract as complete as possible by defining ex ante the management of contract changes (when variations will be required by the Institution and the operator).** The reasoning is that inadequate management of such changes may be detrimental to risk allocation among parties, with negative consequences in the relevant dimensions of the contract (investment, provision, price, and affordability). While some risks can be handled through renegotiations, it is advisable to make clear in advance the preference to avoid renegotiation of other risks that might derive from parties' opportunism.

133. **Finally, the details of the Guidelines extend to procurement procedures.** Since the PPP projects may involve a wide range of possibilities (including, for example, concession projects with end-user payment rather than payment by Government), the Guidelines should increase its scope to such cases (for example, the interactions with monitoring by a regulatory agency, tariff setting and adjustment, etc.).

Recent Advances by the Minister of Finance

134. **The Minister of Finance has produced a Short-term Emergency Recovery Program and a Three-year Macroeconomic and Budget Framework, in which it analyzes the situation of utilities and infrastructure, emphasizing investment needs and options for private participation**.[49] A more recent document (IMCCPP, 2010) accounts for 74 parastatals and Authorities, and classifies them into three groups. Category I firms are exposed to commercialization, will be kept public, but will charge fees or prices that cover their costs (several Boards and companies are not covered in the IMCCPP (2010) document. Category II firms are candidates for privatization (for example TelOne, NetOne, ZPC). Category III firms are candidates for restructuring, and include those deemed strategic (for example, ZESA, ZINWA, NOCZIM) (Table 13). A fourth group of public firms have some shares quoted on the Zimbabwe Stock Exchange, but they are not included in the IMCCPP.

[49] This topic is also taken up by the Minister of Economic Planning and Investment Promotion in MEPIP (2010).

135. **In the second category (candidates for privatization), the common reason for privatization is to improve operational efficiency and/or capitalization.** This can be done by the private sector if the business climate is appropriate. However, another rationale included in IMCCPP (2010) is the reduction of high debt. This rationale may be misleading because high debt implies less collection for the equity sold at the tender—unless the private buyer has a better position to restructure the debt in arrears and get a higher haircut than the Government.

136. **In the third category (candidates for restructuring), the IMCCPP considers that state enterprises and parastatals should be restricted to Government property.** The sectors listed in Table 13 (transmission and distribution of electricity, railways, water) share the common characteristic that the private sector participates through diverse types of concessions. Even though the different challenges faced by parastatals can be fulfilled by different types of restructuring, some observations are warranted. First, in some sectors, the objectives may be better fulfilled by green-field private projects (for example, the stimulus to private participation in generation) or privatization (non-core assets of ZESA Holdings). Second, in ZINWA, it may be better to separate water provision activities from regulation activities.

Table 13. Selected State Enterprises and Parastatals Subject to PPP.

Candidates for privatization (category II)		
	Strategy	**Rationale for privatization**
ZPC	Dispose of government shares to strategic partner or joint venture.	Need to raise funds for power generation and new technology. Rehabilitation of infrastructure. Expertise transfer. Increase power generation.
NetOne and TelOne	Dispose part of the government shareholding to strategic partner and local investors.	Need to raise funds for upgrading infrastructure and replacement of antiquated equipment. Technology transfer. Promote indigenization.
Candidates for restructuring (category III)		
	Strategy	**Rationale for restructuring**
ZESA Holdings	Recapitalize the company. Charge cost effective tariffs. Devise debt repayment strategy. Rationalize staff. Identify strategic partners for ZPC.	Improve service delivery. Enable the company to service its debt. Stimulate investment in power generation.
ZINWA	Recapitalize the company. Devise appropriate pricing system. Strengthen regulatory functions of the authority. Concentrate on core business of developing dams.	Enable ZINWA to construct and rehabilitate water infrastructure and distribute quality water. Strengthen water monitoring and management systems.
NOCZIM	Unbundle NOCZIM into commercial and infrastructure business units.	Create a level playing field. Unlock shareholder value.
NRZ	Recapitalize NRZ. Unbundle NRZ into infrastructure, passenger service and freight service. Enter into PPP for ROT or BOT.	Rehabilitate and build infrastructure. Maintain and procure rolling stock. Bring back the entity to profitability and enhance efficiency. Reduce dependence on the fiscus. Improve capacity utilization.
ZINARA	Introduce toll fees. Adopt prudent financial management system. Enhance corporate governance.	Improve national road network through maintenance and construction. Improve efficiency in allocation of resources.

Source: IMCCPP (2010).

Note: Although ZINARA does not render road services, it is included in the list because it is the authority that collects the funds for road projects.

Recent Advances by the Minister of Economic Planning and Investment Promotion

137. **Recently, the Minister of Economic Planning and Investment Promotion (MEPIP) issued a document with an update to the vision on Medium-term Plan (MTP).** According to the MEPIP, the MTP seeks to establish a vibrant market- and investor-friendly, globally competitive, private sector–driven economy. In this regard, the private sector is expected to be involved through PPPs.

138. **A specific section analyzes conditions in the infrastructure sector and ways forward.** It names as priorities the energy, water and sanitation, transport, and ICT sectors, and identifying certain projects as determinative for the evolution of the economy. The huge investments needed to satisfy growth in demand suggest that the country will have to rely on private funds sooner or later. A considerable number of projects cited by the document can be done through PPP (including several electricity generation plants; a crude oil refining plant and fuel dispensing facility in the Harare Airport; rehabilitation and maintenance of road networks and bridges; construction of tollgates infrastructure; several projects to rehabilitate water and sewerage infrastructure; several projects related to dams to increase water capacity) In fact, the document cites the "establishment of an effective PPPs framework to facilitate private sector participation" for all sectors.

Indigenization Issues

139. **The Indigenization Act requires that at least 51 percent of a private enterprise be held by indigenous persons.** This Act came into the scene again, although it is not clear whether it will finally be put in action. In any case, this requirement is not new. For instance, the EcoNet license contains such a clause. Given the challenges that the Zimbabwe economy faces and the need for fresh funds to improve key infrastructure, the enforcement of this requirement may constrain the participation of international investors. Moreover, the Government may face restrictions in selecting domestic partners of sufficient economic capacity to engage in commercial business that involves millions of dollars.

Experience of PPP in Zimbabwe

140. **Several PPP projects have been implemented during the last decade in Zimbabwe.** For example, a concession was inaugurated in 1999 for the building, rehabilitation and operation of a 385-kilometer railway (the Bulawayo-Beitbridge Railway), which will be transferred to the NRZ in 2029. However, there is little or no track record on whether or not these projects have been successful.

141. **The private consortium ZimHighways has been under contact with the Government for several years to develop a twenty-year concession to upgrade and operate the Beitbridge-Harare-Chirundu corridor, which connects South Africa with northern countries (Malawi, Zambia, the Democratic Republic of the Congo, and Tanzania).**[50] The Government, however, did not give final

[50] See World Bank (2008a).

approval. There are different explanations for this delay. First, the Government may be interested in opening the concession to a tender procedure. This could be a possible positive first step if proper steps follow (including the setting up of a competitive, transparent and efficient tender; and the creation of a regulatory body in charge of controlling this and future PPP programs in roads before the execution of the contract). Impatience may be the second reason. The whole project may take more than two years to show the first results and more than fifteen years to develop (the road is about 1000 km long). A likely alternative may be to split up the project in five parts. However, the five parts will probably not be sufficiently profitable, and some stages will need cross-subsidies from other stages. Given the road length, perhaps a two-part concession is reasonable, taking the flow of cars north or south from Harare to the corresponding country borders.

142. **More recent cases of PPPs are the sale of NetOne's equity participation in Zellco (a dealer that attracts customers for NetOne) for $ 1.2 million to finance part of its investment needs.** More important, NetOne advanced several steps in the process to find a strategic partner for 49 percent of its equity, having finished with a valuation exercise of the company and with the due diligence process. It might be ready to make a proposal to the cabinet if it comes to an agreement with the private firm about the value of the firm. In this case, it is important to take proper steps. On the one hand, bilateral negotiations with one investor may create a risk of eliciting a lower value due to the lack of competition— assuming that there are several interested bidders (which may not be the case in Zimbabwe) and that the procurement procedures in Zimbabwe are sufficiently transparent. On the other hand, it may also deter the investor from participating in Zimbabwe if the management of the public firm looks for a high value that is not supported by the facts. [51]

V. Conclusions and Recommendations

143. **After several years of living under the risk of chronic undersupply of infrastructure, the Government of Zimbabwe needs to promote reforms that induce investments targeted to reduce such risks.** But given the need for funds across the public sector and the economy, it is of outmost importance that the Government use sound economic principles in this endeavor. With scarce resources and with no available social evaluation of projects, this is not an easy task.

144. **A proposal to return to first- or second-best practices seems far from feasible.** Recommendations should take into account the trade-off between first- or second-best policies and the realities on the ground. These include the poor condition of Zimbabwe infrastructure, which is in urgent need of large and rapid investments, and various economic and political problems, which may be a barrier to private participation at "normal" rates of return.

145. **However, this should not be an excuse to delay significant reforms, alleging that the Government must solve short-term infrastructure and capacity problems needs**. The private sector will not participate (directly, through PPPs, or in any other way) unless investors perceive a positive investment climate. In this

[51] As a reference, the market value of the assets of EcoNet—the market leader in the cell market, with a 60 percent of market share—is about US$ 1.1 billion.

sense, a general recommendation applicable to all sectors is that proper regulation is always a prerequisite: not only to induce the private sector to participate, but also to expose public operators to regulatory standards. Beyond specific details in each sector, Zimbabwe needs to start enforcing this practice.

Electricity Sector

Short-term considerations

146. **Look at opportunity costs.** The fuel cost of running the thermal facility, at around US$ 6 cents/kWh, is higher than the import price of electricity at US$ 3.5 cents/kWh (including wheeling charges). To the extent that there are regional suppliers of electricity ready to export to the South African market (a big "if" in the short term, given the serious shortage of power in the Region at present) Zimbabwe could piggyback on them.[52] The problem would be to ensure the payment of that electricity to the foreign supplier, given ZESA's chronic arrears in the payment of imports. This problem can be eased by letting local firms bundle as large users and import electricity directly using ZESA lines at a cost-reflective wheeling charge.[53] This option is already used in the petroleum sector, with NOCZIM bundling imports of private oil companies to help it reduce the burden of a take-or-pay contract with the pipeline.

147. **Improve collections ratios by enforcing disconnection, assessing the value of introducing pre-paid metering and upgrading the billing system.** ZESA should finish with the upgrade of its billing system. Rough estimates suggest that ZESA could improve collection by 10–20 percent in the short term. Every 10 percent increase in the collection ratio means US$ 47 million of additional revenue (or about 12 percent of priority investment needs identified by World Bank, 2009a). Government should also make an effort to clear arrears for services with ZESA. The option of expanding the number of pre-paid private users may be positive to reduce collection ratios.

148. **Apply a skill enhancement programme in the Commercial and Billing Operations department**.

149. **Increase and rebalance prices and tariffs to reflect efficient system costs.** For example, the average tariff is US$ 6.7 cents, the average cost assessed by ZERC is almost US$ 10 cents, and the off-peak rate to large industrial users is US$ 2 cents, which seems too low for a system subject to capacity constraints. This recommendation includes a global tariff review, to properly assess the operation, maintenance and investment costs that should to be included.

150. **Accompany price increases with policies oriented toward inclusion (a good design of lifeline tariffs for low-income users) and consumption education (to rationalize consumption).** Tariff hikes and a better enforcement of collections may require a significant number of users to dedicate a high proportion of their income to energy. Although this will help reduce excessive consumption, it creates the problem of a service that may turn onerous to low-income households. The Government should specifically assess the pros and cons of a lifeline tariff (for example US$ 1 cent/kWh for poor families only). In an impoverished country, even

[52] The *if* condition means that, with current information, it is difficult to distinguish available exports to Zimbabwe (specifically, to ZESA) from available exports to Zimbabwean large users (who are in better financial conditions to fulfill electricity import commitments).

[53] For this to work, prices to industry should get closer to marginal costs.

this policy may cover a high proportion of residential users, creating a strong burden to public finances.

151. **Follow the procedures to appoint ZERC Board members and institutionalize the regulatory agency.** Provide adequate budget and staff. Delimit the regulatory roles of the Minister of Energy and Power Development and ZERC (minimizing conflicts). Release ZERC from direct obligations related to antitrust, which should be taken by Competition Commission. Revise regulation rules of practice (for example, the publication of the methodology to calculate the WACC, the update of the Tariff Code, the mechanisms for consumer complaints, etc.).

152. **Divest non-core assets.** ZESA's non-core activities lost US$ 5.1 million during 2009. Eventually, assess the convenience of maintaining the division that provides inputs to ZPC and ZETDC.

Medium-term considerations

153. **Aligning prices to costs may induce entry in the medium term.** ZERC should be ready to define the operation rules of the Electricity Act in the generation segment (dispatch, pricing, and so on).

154. **Revise licensing provisions.** For example: (i) minimize risks of double-sided monopoly in the transmission segment (applicable to the case of clarifying operation rules for generators); (ii) assess the risk of primary distributor obligation of default provision (applicable to scenarios that foresee entry of other distribution); and (iii) minimize risks of arbitrary decisions in the process of revoking licenses, establishing the margin to modify levies on electricity, and the like.

155. **Assess the possibility of privatizing or restructuring generation plants.** The case of NamPower —and Mozambique, in the future—involves a debt contract that has been being honored by Zimbabwe, so a relationship with a partner could also be honored.

156. **Assess the option of a vertical split-up of ZETDC between transmission and distribution, and a regional split-up of distribution, after a proper regulatory framework is in place.** Alternatives to analyze are, the regional split-up between Harare, Bulawayo and the rest of the country and the restructuring of the operation of transmission and distribution to allow for private sector participation. These assessments could be done following the conceptual analysis made in Appendix on vertical, horizontal and geographical structure. Centralized regulation is the natural way to control generation, transmission, and distribution.

Petroleum Sector

Short-term considerations

157. **Revise the principles of levies and fees for petroleum products.** Currently, the Road Levy is charged to all consumers (manufacturers, farmers, others) when it should be charged only to those that use the road (although different prices for the same product might prove difficult to control). Gradually rebalance road charges toward diesel and away from petrol because of the heavier impact of trucks on road maintenance needs, compared to automobiles. In the medium term, revise the carbon tax and import levies, which currently are lower for diesel.

158. **Create the regulatory agency as it is determined by law, based on independence and autonomy principles.** Separate the regulatory (quality and safety standards) and competition roles in the market.

Medium-term considerations

159. **Evaluate the elimination of cost-based formulas.** Substitute them for market-based formulas or deregulation in the medium term.

160. **Unbundle NOCZIM into infrastructure (pipeline, storage capacity) and operation units.** This is reasonable, provided that the units are treated as separate entities. Moreover, the Government may assess the relevance of keeping the operation unit as a parastatal or find a way to divest it.

Railways and Roads

Short-term considerations

161. **Assess the coordination problems of intermodal transportation.** This should be one of the issues included in a National Transport Policy. If there is an inefficient bias against railroad transportation, the Government should define sector policies to tackle these biases (this may involve medium-term decisions such as investing in new track lines in certain routes, and obtaining the necessary financing).

162. **Evaluate an increase and rebalance of road user charges, given the budget problems faced by ZINARA.** Projected collections for 2010 are not enough to cover routine maintenance of roads. However, this should be done in observance to regional trade Agreements and other related protocols.

163. **Review and enhance ZINARA's capacity to perform its functions**.

Medium-term considerations

164. **Define a regulatory framework for railways that delimits roles between the Minister of Transport and Infrastructural Development, the regulatory agency, and operators (including NRZ).** Although, tariffs are not formally regulated, NRZ reports to the Minister for approval. Moreover, NRZ should not self-regulate on quality and safety matters. 190. An agency is necessary to monitor and audit and to provide public information on the performance of NRZ and also on the BBR concession.

165. **Assess new formats for the railways sector.** Currently, NRZ operates infrastructure and renders services in competition with private shippers. The option for NRZ to specialize in tracks and lease the lines to private operators in return for a fee is reasonable. This proposal is opposite to the one that NRZ is suggesting (handing the infrastructure operation to another firm while the parastatal turns into an operator and leases lines to render services).

166. **Define a regulatory framework for roads that delimits roles between the Minister of Transport and Infrastructural Development, the regulatory agency, and operators (the road authorities and private operators).** The regulatory agency should be different from the authority that evaluates and grants concessions (i.e., the Ministry). Regulatory powers could be vested on ZINARA, which already has an operating Board, although there is a possible conflict between new regulatory powers and the current activities related to the management of the Road Fund.

167. **Accompany the legal frameworks with capacity to manage the process**. This capacity should ensure the enforcement of rules and safeguard the interests of stake-holders.

168. **Consider BOT-type of contracts as an alternative to solve the critical conditions of roads.** Advancing the ZimHighways project, with the provision of splitting up the corridor in an optimal number of segments, could be a model to

learn whether the private sector is willing to participate in improving the Zimbabwean infrastructure.

Water and Sanitation

Short-term considerations

169. **Invest to remove bottlenecks.** Given the problems that the sector faces (doubts about property rights, scarce working capital), any available resources for ZINWA are likely to be more effective in targeting repairs for water and sewage treatment plants and in reducing unaccounted water by repairing pipes than in expanding dams for irrigation when farmers are not paying (and in some cases, not even demanding water). For HWA, efforts should be made to remove bottlenecks in the provision of both raw and clear water.

170. **Increase collection ratios by encouraging customer payment plans and by allowing disconnection.** Rough estimates suggest that water authorities could improve collection by 30—40 percent. Every 10 percent increase in the collection ratio translates into an additional US$ 5 million of revenues to ZINWA and US$ 9 million for HWA (or 25– 45 percent of budget needs in 2010 under the emergency response or poverty alleviation scenarios identified in World Bank, 2009c). In the case of HWA, tariffs should be reviewed to cover expansion costs as well.

Medium-term considerations

171. **Delineate a homogeneous regulatory framework for water and sanitation, delimiting roles between the ministries, regulatory agency, and operators.** This sector requires legal provisions for the creation of an independent regulatory agency. Centralization or decentralization of water provision is another dimension to take into consideration;[54] in the case of decentralization, it should be guided by a uniform central policy, given that local Governments may be more exposed to capture by the operator than a national regulatory agency.

172. **As soon as a maintenance and expansion plan is envisaged, adapt tariffs to cost levels that reflect investment needs.** If cost-reflective tariffs become a burden for low-income users, the tariff increase must be accompanied by a life-line tariff or some kind of social tariff (as it was mentioned in the case of electricity).

173. **Given that the provision of water is a risky business throughout the world, evaluate the option of management contracts, where applicable.** These alternatives involve private participation in operation and investment without transferring too much risk to the private party.

Telecommunications Sector

Short-term considerations

174. **Improve collections ratios by encouraging customer payment plans and by allowing disconnection**. Rough estimates suggest that operators could improve collection by 30–40 percent. A 10 percent increase in the collection ratio translates into an additional US$ 10 million for NetOne or US$ 26 million for TelOne.

175. **In the case of TelOne, accompany a disconnection policy with a tariff review and consumer education.** An average monthly bill of US$ 50 is high even for

[54] This is consistent with previous recommendations to introduce tariff guidelines and benchmarking of performance within an integrated framework for national water sector policy and strategy (World Bank, 2009c).

countries with much higher income levels than Zimbabwe (for example, US$ 50 covers the cost of both telephone and Internet in South Africa).

Medium-term considerations

176. **Amend the regulatory framework that covers service provision, access, and interconnection accordingly (the ICT Bill).** But recognize that ICT operators compete in an integral market that covers telecommunications, TV, and Internet.

177. **Implement the USF.** But restrict its use of to the objectives defined in the Act, such as the access of underserved urban and rural areas to ICT.

178. **Assess a way forward for parastatals in this sector, which may involve privatization or strategic partnership.** Also assess the rationale for having NetOne and TelOne as separate companies, or consider merging them. NetOne, for example, participates in a sector in which there is a lot of private interest in improving the low penetration rate. The strategic role of a public company in the dynamic cell and data markets should be revised— and eventually, the company could be privatized.

179. **Look for adequate ways to reach the submarine cable.** This can be done by the private sector (EcoNet is already investing) or promoted by the Government through parastatals or through a PPP project. In the second case, the Government should take care to not hamper private incentives to invest. The inefficient result of duplication in investment is preferred to the inefficient result of no investment at all. In either case, access regulation to all operators and ISP for nondiscriminatory pricing and quality access should be granted.

180. **Assess the rationale and value of starting to charge for the right to use the radio spectrum, taking into account constraints from existing licenses.** In this case, the Government should revise the incidence of a spectrum charge and the annual 3.5 percent nominal license fee in light of the burden faced by the private sector. Beyond that, the spectrum could be offered through competitive tender procedures.

Cross-Sector Recommendations

181. A number of steps should be taken that cut across various infrastructure sectors:

- **Enforce protection against vandalism and theft of infrastructure.** Stiffer penalties (including prison) are a possibility. However, while this may make sense given the relevance of infrastructure for the economy, penalties must be harmonized with those applied to other criminal cases in Zimbabwe.
- **Net-off cross credit and debt arrears among parastatals and the Government.** This has to be done subject to the restrictions from the Public Finance Management Act.
- **Improve collection rates by encouraging customer payment plans and by allowing disconnection.** In addition, foster user education to fight the perception problem of high prices.
- **Advance in the direction of independent regulatory agencies.** Each sector will function more efficiently if the agency is neither captured by the operators nor by the upper levels of the executive. In this respect, the idea of a unique super-regulatory agency is too weak and risky. This could work in the energy sector, but the GoZ should assess the pros and cons of merging PRA and ZERC,

given that the agency will inevitably have to constitute departments specialized in each sector, and the real savings will be at the Board level.

- **Prevent that board members of regulatory agencies and their close relatives have any stake on regulated firms.** One condition for entering into the Board should be the previous divestiture. Moreover, before entering and after leaving the Board, there should be a period of one year with no participation as board members or top managerial positions in regulated firms (i.e., one year quarantine).
- **Circumscribe the Competition and Tariffs Commission to only intervene in the competitive segments of infrastructures sectors, with the assistance of the regulatory agencies.** The control of the natural monopoly segments should be under the exclusive control of the independent regulators.[55]
- **Review PPP Guidelines.** This is a good moment to review the institutional and legislative framework, taking into consideration the following list of issues:
    a. The creation of a unique specialized PPP Unit, including the location of this Unit (recommended in the Ministry of Finance), and the interaction with sector-specific units.
    b. The standardization of procedures in the PPP Guidelines, notably many aspects that work against the objective of fair, transparent, and competitive selection of a provider (for example, the tender procedure and selection rules).
    c. Homogenization and alignment of principles among line ministries to prepare a coordinated action plan regarding PPP.
    d. Application of PPP Guidelines apply to forms of PPP different from procurement (against a payment), such as management contracts, concessions and privatizations.
- **The timing between regulation and PPP is crucial.** Proper regulation should occur before a process of PPP takes place. It is too costly to set up proper regulation once the operator is already in place.

[55] However, in the electricity and water cases, where the regulator is not working properly, there might be a temporary justification for a more generalized intervention of the Competition and Tariffs Commission.

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Appendix A. List of Main Parastatals in Zimbabwe.

Major public enterprises with 100 percent Government shareholding:

1. National Railways of Zimbabwe (NRZ)
2. Zimbabwe Electricity Supply Authority (ZESA)
3. Zimbabwe Iron and Steel Company (ZISCO)
4. Cold Storage Company (CSC)
5. National Oil Company of Zimbabwe (NOCZIM)
6. Zimbabwe National Water Authority (ZINWA)
7. District Development Fund (DDF)
8. Grain Marketing Board (GMB)
9. Air Zimbabwe
10. Agricultural and Rural Development Authority (ARDA)
11. Tel*One
12. Net*One
13. Industrial Development Corporation (IDC)
14. Zimbabwe Mining Development Corporation (ZMDC)
15. Minerals Marketing Corporation of Zimbabwe (MMCZ)
16. Central Mechanical Engineering Department (CMED)
17. Zimbabwe Defense Industries (ZDI)
18. Zimbabwe Development Corporation (ZDC)

Public Enterprises with a Government stake through RBZ shareholding (Percent)

1. Astra Holdings (66)
2. Cairns (65)
3. Tractive Power Holdings (65)
4. Fidelity Printers and Refineries (100)
5. Export Credit Guarantee Company (100)
6. Aurex (100)
7. Sirtech (60)
8. St Lucia Park (50)
9. Homelink (100)
10. Old Mutual (8)
11. Dairibord (21)
12. Cotton Company of Zimbabwe (7)
13. Infrastructure Development Bank of Zimbabwe (16.75)
14. Tuli Coal (70)

Source: Reserve Bank of Zimbabwe (2007)

Appendix B. Financial Statements of Selected Parastatals and Local Authorities.

Zesa Holdings

Revenue - Expenditure

Description	2009
Revenue	
Electricity Sales	447,027,849
Interest Receivable	544,092
Connection Fees	2,570,426
Other Income	20,975,422
Total Revenue	**471,117,789**
Expenditure	
Payroll Costs	90,240,668
Generation Costs	61,541,258
Electricity Imports	77,263,737
Transmission & Distribution Costs	64,674,075
ZESA Holdings	2,343,833
ZESA Enterprises	5,884,169
Powertel	2,650,467
Provision for bad debts	81,505,462
Depreciation	78,695,102
Total Expenditure	**464,798,769**
Operating profit before finance changes	6,319,020
Finance Changes	
Exchange Differences	21,082,915
Foreign Loans Differences	17,126,293
Other Finance Changes	1,940,781
Net Surplus(Deficit)	**-33,830,969**

Statement of Financial Position

Description	Dec-09
Capital Employed	
Long Term Loans	41,807,481
Non Distributable Reserves	1,292,433,402
Retained Earnings	-33,830,969
Total Capital Employed	**1,300,409,914**
Employment of Capital	
Fixed Assets	1,757,312,587
Intangible Assets	952,614
Investments	963,989
Total Non-Current Assets	**1,759,229,189**
Current Assets	
Stores & Materials	96,243,911
Deferred Tax	3,749
Debtors	265,142,868
Bank & Cash	16,749,151
Total Current Assets	**378,139,680**
Current Liabilities	
Bank overdraft	-
Creditors & accruals	448,443,842
Current portion of loans	388,515,112
Total current liabilities	**836,958,954**
Net Current Liabilities	**-458,819,275**
Total Employment of Capital	**1,300,409,914**

National Oil Company of Zimbabwe

Revenue - Expenditure

Description	2009
REVENUE - FUEL SALES	141,238,898
-LUBRICANTS	600,000
-TRANSPORT REVENU	583,546
-RETAIL SALES	19,816
TOTAL REVENUES	**142,442,260**
COST OF SALES	-125,290,798
TOTAL COST OF SALES	**-125,290,798**
GROSS PROFIT	**17,151,462**
COMMERCIAL VEHICLE EXP	-1,311,628
ADMINISTRATION COSTS	-4,706,882
PROFESSIONAL FEES	-414,077
BOARD MEMBERS FEES	-27,780
INSURANCES	-193,278
MOTOR VEHICLES EXPENSES	-483,766
SALARIES AND WAGES	-7,208,963
PROJECT EXPENSES	-366,984
TOTAL EXPENSES	**-14,713,359**
GROSS PROFIT-EXPENSES	**2,438,103**
OTHER INCOME	1,052,537
FINANCE CHARGES	-749,114
TOTAL OTHER INCOME	**303,423**
OVERALL PROFT BEFORE BRIDG	**2,741,527**
PIPELINE REVENUES	17,592,662
STORAGE & HANDLING FEES	187,272
BRIDGING COSTS	-38,592,372
	17,802,130
OVERALL PROFITS	**-15,060,604**

BALANCE SHEET

Description	Dec-09
ASSETS	
NON CURRENTS ASSETS	
LAND & BUILDINGS	147,781,040
PLANT AND EQUIPMENT	10,423,089
FURNITURE AND FITTINGS	595,257
PASSENGER MOTOR VEHICLES	1,723,340
COMMERCIAL M/ VEH,TOTAL	3,849,410
LAB EQUIPMENT	149,003
ELECTRONIC EQUIPMENT	345,065
TOTAL NON CURRENT ASSETS	**164,866,205**
WORK IN PROGRESS	
WIP - Masvingo S/S	143,900
WIP - Gweru S/S	206,708
WIP - Chihoyi S/S	9,299
WIP - Rusape S/S	110
WIP - CEO Residence	16,827
WIP - Beitbridge Depot	781,777
WIP - Beitbridge Truck Inn	1,133,773
WIP - Kadoma S/S	64,364
WIP - Jet A1 Fueling facility	996,791
TOTAL WORK IN PROGRESS	**3,353,549**
CURRENT ASSETS	
INVESTMENTS	701,690
LOCAL BANKS	5,182,244
FOREIGN BANK ACCOUNTS	13,052,618
PETTY CASH ACCOUNTS	15,725
DEPOSITS	150
DEBTORS	249,587
INVENTORY	70,227,293
TOTAL CURRENT ASSETS	**89,429,307**
TOTAL ASSETS	**257,649,061**
EQUITY AND LIABILITIES	
SHARE HOLDERS EQUITY	
Ordinary Share Capital	
Capital Reserves	
General Reserve	
Retained Earnings Prior Year	
Retained Earnings Current	-15,060,604
Revaluation Reserve-Fixed Assets	114,670,876
Corporate Taxes	
TOTAL SHAREHOLDERS EQUITY	**99,610,273**
CURRENT LIABILITIES	
CREDITORS	138,518,339
TOTAL STAT. COLLECTIONS	19,520,449
TOTAL CURRENT LIABILITIES	**158,038,788**
TOTAL EQUITY AND LIABILITIES	**257,649,061**

National Railways of Zimbabwe

Revenue - Expenditure

Description	2009
Freight Operation Revenue	38,857,560
Freight Revenue by Business Sector	2,369,755
Transit Sector Revenue	11,443,600
Total Revenue	**52,670,915**
Operating Costs	
Freight Operation Costs	28,718,858
Freight Facilities & Equipment Maintenance	11,140,669
Overhead Support Services	11,263,505
Total Operating Expenditure	**51,123,032**
Surplus (Deficit) - Freight Operation	**1,547,883**
Infrastructure Maintenance	
Permanent Way	4,828,603
Signaling & Communication	2,002,862
Electrification & Ancillary	751,220
Station Buildings & Platforms	246,185
Interest on Infrastructure Investment Loans	212,530
Total Infrastructure Costs	**8,041,400**
Surplus(Deficit) - Before Passengers Services	**-6,493,517**
Passengers Services Operations	
Income	3,983,760
Expenditure	13,222,139
Surplus(Deficit) - Passenger Services	**-9,238,379**
Net Rail Surplus/(Deficit)	**-15,731,895**
Real Estate Business Sector	
Income	2,686,626
Expenditure	1,281,272
Surplus(Deficit) - Real Estates	**1,405,354**
Miscellaneous Income	
Late Payment Fees	1,096,746
Sundry Income	1,739,313
Total Misc Income	**2,836,059**
Financing Costs	
Interest on Loans	191,854
Provision & Sundry Expenses	-1,405,093
Total Financing Costs	**-1,213,239**
Total (Costs)/Income	**4,049,298**
Net Surplus/ (Deficit)	**-10,277,243**

Statement of Financial Position

Description	Dec-09
Non Current Assets	
Property, plant and equipment	1,268,805,177
Investments	60,000,000
	1,328,805,177
Current Assets	
Inventories	6,500,000
Receivables	17,250,000
Related party receivables	
Cash and bank balances	200,000
	23,950,000
Total Assets	**1,352,755,177**
Equity and Liabilities	
Reserves	
Accumulated(loss)/ Profit	-3,000,037
Revaluation Reserve	1,328,098,086
	1,325,098,049
Non Current Liabilities	
Long Term Loans	5,041,874
Deferred income	
Deferred tax	-
	5,041,874
Current Liabilities	
Short term portion of long term loans	7,115,599
Payables	15,499,655
Tax Payable	0
Bank Overdraft	0
	22,615,254
Total Reserves & Liabilities	**1,352,755,177**

ZIMBABWE National Water Authority

Revenue - Expenditure

Description	2009
Income	
Clear Water Sales	32,137,689
Raw Water Sales: Prior adjustment	12,719,441
Raw Water Sales: Adjustments (Runde)	
Borehole Drilling	54,479
Sundry & Interest on Debtors	2,738,435
Subtotal	**47,650,044**
Statutory Income	
Water Levies	0
Discharge Permits	355
Water Sample Analysis	0
Sundry	2,014
Subtotal	**2,369**
Total Income	**47,652,413**
Expenditure	
Human resources	14,280,700
Provision of Bankpay; Arbitration	1,931,000
Provision of bonus	880,000
Professional Fees	238,593
Premises	469,883
Transport & Travel	1,245,342
Communication	861,200
Repair & Maintenance	0
-Dams	540,740
-Properties , Plant & Equip	3,291,937
Inputs & Services	
-Chemicals	6,204,687
-Clear Water for resale	2,309,504
-Fuels & Oils	270,484
-Electricity	3,172,702
-Other	605,183
Bank Changes	60,737
Penalty of late payment of payee	670,792
Depreciation-Plant & Equipment	37,092
-Motor Vehicle	161,296
-Computers	3,161
-Furniture & Fittings	1,874
Total Expenditure	**37,236,907**
Operating Profit/(Loss)	**10,415,506**
Less: - Provision for Doubtful debts	**11,019,265**
Profit/(Loss) Before Tax	**-603,759**

Statement of Financial Position

Description	Dec-09
Equity & Liabilities	
Retained Earnings at beginning of year	-
Non Distributable Reserve	10,966,805
PSIP Grant Current Year	185,000
Current Period Profit (Loss)	-603,759
Funds of the Authority	**10,548,046**
Government Loan:-Zimphos Debt Payment	800,000
Long-Term Loans:-Chinese Equipment	5,106,157
Total Equity and Liabilities	**16,454,203**
Assets	
Non Current Assets	
Property, Plant & Equipment	5,003,596
Current Assets	
Water Debtors	26,887,935
Other Debtors	390,439
Stock at Cost	3,258,069
Cash & Bank Balances	1,187,462
	31,723,905
Current Liabilities	
Trade Creditors	3,587,524
Other Creditors & Accruals	14,218,636
Provision-Other	2,467,138
	20,273,298
Net Current Assets	**11,450,607**
Total net Assets	**16,454,203**

HARARE WATER

Income and Expenditure Summary for the period 1 February 2009 to 31 December 2009

Expenditure	
Salaries and Allowance	16,186,338
Admin. Charges	1,200,000
General Expenses	***24,707,029***
Chemicals	11,095,055
Electricity	9,391,293
Protective Clothing	474,209
Stationery	352,364
Fuel	579,406
Other	2,814,702
Repairs and Maintenance	935,814
Capital Charges	120,000
Revenue Contribution to Capital Outlay	626,929
Net Expenditure	**43,776,110**
Income	
Water and Sewerage	83,571,264
Others	50,300
	83,621,564
Net Income (Deficit)	**39,845,454**

TELONE

Revenue - Expenditure

Description	2009
Income	
Telephone	237,286,142
Telegraph	-
Telex	54,929
Leased Circuits	5,725,854
Internet services	2,469,070
Packet Switch	-
V - Sat Service	10,653
Inter Connect Revenue	16,800,962
Manufacturing Revenue	45,770
Inter Company Income	-
Interest Receivable - Investment	762,519
Interest Receivable - Subscribers	29,886
Miscellaneous	155,918
Total Revenue	**263,341,703**
Expenditure	
Operating Costs	
Board Costs	44,290
Staff Costs	26,269,172
Transportation	3,236,518
Accommodation	3,448,126
Advertising	121,586
General Expenses	395,097
Office Costs	935,592
Store Purchases	2,616,312
Contracted Work	366,679
Telephone Foreign Handling Costs	4,906,432
Telex Foreign Handling Costs	-
Telegraph Foreign Handling Costs	-
Data Services Handling Costs	-
VSAT Handling Costs	439,992
Internet Handling Costs	1,715,136
Mobile Cellular Handling Costs	48,392,847
Regulatory Fees	11,164,651
Total Expenditure	**104,052,428**
Transfer to Capital Account	-572,143
Interest Payable	7,664,817
Depreciation	-
Total Operating Costs	**111,145,103**
Operating Profit(Loss)	152,196,600
Finance Changes	
Exchange Gain (Losses)	-10,181,861
Other	-
Total Finance Charges	**-10,181,861**
Profit/(Loss) Before Prior Year Iter	**162,378,461**
Exceptional Items	**-13,537,362**
Profit/(loss)	**148,841,099**
Provisional Tax Paid	-312,473
Profit/(loss)	148,528,626
Provisional Tax Payable	45,991,900
Profit/(loss)	**102,849,199**

Statement of Financial Position

Description	Dec-09
Assets	
Non Current Assets	
Property, plant & equipment	5,552,284
Available for sale investments	597,899
Investments Held for Trading	33,415,676
	39,565,859
Current Assets	
Inventories	33,262,927
Accounts Receivables	209,904,836
Investments held for trading	8,113,061
Cash and Bank Balances	8,843,047
	260,123,871
Total Assets	**299,689,730**
Equity and Liabilities	
Capital and Reserves	
Share Capital	1
Currency Translation Reserve	-289,693,442
Revaluation Reserve	
Accumulated Profit/(Loss)	148,528,626
	-141,164,815
Non-Current Liabilities	
Local Loans: due after one year	0
Foreign Loans: due after one year	112,689,952
Long Term Provisions (Grants)	-
Total Long Term Loans	**112,689,952**
Current Liabilities	
Accounts Payable	231,612,920
Loans: due within one year	94,360,431
Short term provisions	2,191,240
Deferred Income	1
	328,164,592
Total Liabilities	**440,854,545**
Total Equity and Liabilities	**299,689,730**

NETONE

Revenue - Expenditure

Description	2009
Sales Revenue	100,095,804
Cost of Sales	34,597,435
Wages	4,134,423
Salaries	5,447,200
Property Costs	3,027,721
Operating Overhead	1,875,442
Vehicle Expenses	618,976
Personal Expenses	577,199
Sales & Marketing	1,784,078
Administration Cost	12,389,371
Depreciation	8,634,029
Total Expenditure	73,085,874
PBIT	27,009,930
Financing Costs	2,141,724
Net Before Tax	**24,868,206**

Statement of Financial Position

Description	Dec-09
Capital Employed	
Fixed Assets	
Total Fixed Assets	**156,084,698**
Investments	
Long Term Investment	-
Total non Current Assets	-
Current Assets	
Stock	4,625,143
Trade Debtors	47,671,974
Other Debtors	251,475
Short term investment	-
Prepayments	10,598,048
Bank	3,486,065
Total Current Assets	**66,632,705**
Total Assets	**222,717,404**
Reserves and Liabilities	
Share capital	-
Capital Reserves	-
Revaluation Reserves	113,846,010
Retained Profit	24,868,206
Total Reserves	**138,714,216**
Current Liabilities	
Current portion of long term loans	28,978,520
Lease Financing	-
Trade Creditors	35,441,970
Other Creditors	7,594,172
Provision of bad debts	6,532,916
Tax Payable	5,455,610
Total Current Liabilities	**84,003,188**
Total Reserves and Liabilities	**222,717,404**

Appendix C. A Conceptual Framework for Properly Managing Infrastructure and Services.

1. **Several infrastructure sectors, such as electricity, water and sanitation, roads and transportation, and ICT, share common characteristics.** First, the cost structure is characterized by natural monopoly. That is, from the cost side, it is efficient to provide the good or service by one firm. Second, the price-elasticity of demand is low, while there are few or no alternative substitutes. Third, some services are provided in networks and involve (net) positive externalities. Fourth, it is possible to develop competition in particular segments in each sector, but this requires nondiscriminatory access and use of the essential facility (the grid or network) operated by a monopolist. Fifth, all sectors are capital-intensive (they have a high capital/product ratio). Finally, they have specific and irreversible investments that depreciate slowly. As a result, the feasibility of competition or even contestability in the market (with the exception of particular segments) is limited, giving the operator room to eventually abuse market power. The optimal pricing policy is to remunerate the capital cost of infrastructure, utilized efficiently, which implies a long-term relationship between the operator and the regulator.
2. **In this long-term relationship, however, new room is created for opportunistic behavior.** On the one hand, the sunk and specific characteristic of the assets represents a temptation for governments to use funds that should remunerate the capital (the quasi-rents) for politically attractive purposes (such as low prices, over-employment in public enterprises, and reallocation of funds to the Government's programs) without sacrificing much performance in the short term. However, this will produce permanent problems for Governments with chronic public deficits because the combination of scarce funds and the private sector's reluctance to participate may result in a state of poor and deteriorated infrastructure. On the other hand, the operator may behave opportunistically— especially when it enjoys certain monopoly power against the regulatory authority[56]—through contract renegotiation, with the purpose of taking advantages in tariffs, subsidies, investment commitments, and the like.
3. **Both kinds of risks should be mitigated in the design of a regulatory environment, for both public and private provision.** For example, in the case of public enterprises, the higher costs of productive inefficiency and the possible extraction of quasi-rents to be used with other public purposes reduce disposable funds to invest in expansion and quality, leaving investment as a residual decision that depends on the availability of public funds. In the case of private operators, the absence of rules designed to avoid opportunistic behavior by both public and private actors also implies higher tariffs and underinvestment.
4. **A central challenge for the Government to avoid this "low-quality equilibrium" is the choice of the provision model to adopt and how to implement it.** Proper public management requires the elimination of: a) interference from politics; b) the capture by interest groups (suppliers, unions, others); and c) the pursuit of multiple goals stemming from very difficult evaluations. Proper private participation requires transparent and foreseeable regulations and an independent and efficient regulatory

[56] Advantages arise from information asymmetries (about the operator's own costs, environment, effort, demand) and because the replacement of an operator can be very traumatic in the short-term.

agency, to induce efficient behavior that benefits consumers and taxpayers over time.

Dimensions that Need to be Addressed in the Regulatory Framework.

5. **Given that contracts are essentially incomplete, the effectiveness of a publicly or privately based management model depends on: the consistency and clarity with which the different roles of actors are defined (for example, rights and responsibilities in the areas of policy definition and execution applicable to government officials); and on the allocation of risks among parties (government and private investors).** A non-exhaustive list of main issues to be covered by regulation includes[57]: (a) the design of the vertical, horizontal, and regional structure of each sector, with the definition of those segments that can operate under competition and those that can operate under monopoly conditions; (b) an appropriate contract design for the main parameters that govern the operator's obligations and commitments; (c) a mechanism for efficient selection of operators; (d) the possible models of public-private participation (PPP, for public- private partnerships); (e) renegotiation risks; and (f) institutional design.

Optimal Vertical, Horizontal, and Regional Structure

6. **In any sector, the development of competition is essential because this constitutes a very effective regulatory tool that helps the regulator in its task of replicating the competitive outcome, with the corresponding advantages to consumers.** Nevertheless, either due to errors in the initial design or to legal, jurisdictional, or historical constraints, the economic structure in infrastructure sectors does not frequently respond to these conditions.
7. **A basic principle in structural design is that society should take advantage of economies of scale and scope, and avoid the conformation of monopolies that are unjustified for efficiency reasons.** In the horizontal dimension, the provision of a bundle of services depends on the existence of complementarities in operation and technology, derived from joint production or externalities (for example, the joint provision of clear water and sanitation). This property is not very important in electricity or petroleum products. In the vertical dimension, in the case of electricity, even when some economies of scope could exist (for example, coordination or innovation), the activities of generation, transmission, and distribution of electricity are sufficiently different and, therefore, can be provided by different companies. For this reason, it is appropriate to limit vertical integration in order to avoid some risks. For example, the presence of market power in some segment might distort the competitive condition of regulation in other segments, or inefficiency in some segment might spread to other parts of the system. In the geographic dimension, the centralization of a service in a national company would depend on the trade-off between the geographic expansion of a natural monopoly and the benefits of regional provision (for example, from yardstick competition). Finally, when regulated and competitive segments interact, the regulator should delineate conditions for open and nondiscriminatory access to the essential facility operated by a public or private regulated monopoly.

[57] An excellent source for these topics is Amstrong, Cowan, and Vickers (1994).

Regulatory Framework

8. **A regulatory framework or contract should define the rights and obligations of the operator, and the risks and incentives under which it will operate.** In particular, the dimensions that affect the intensity and feasibility of competition for the contract (or types of PPP) are the incentives, allocation of risks among parties, elimination of artificial exclusivities, reasonableness of the tariff level and structure, separation of activities (provided significant scale and scope economies are not lost), and provisions for contract renegotiation.
    a. ***Detail and flexibility of the contract:*** The balance among clarity, coverage, and flexibility of contracts may vary with the availability of instruments to react to unforeseen contingencies. For example, in a country where the technical quality of the regulator is not proven, it may be efficient not to rely on discretion but rather to define detailed rules for each relevant dimension, subject to performance evaluation.
    b. ***Performance evaluation:*** When the option of competition in the market is unavailable, end users do not have instruments to discipline the provider. In this case, contracts should define the objectives on coverage, quality, and other important matters, and leave the operator with the decision and risk of how to fulfill them—subject to penalties for nonperformance—in a way similar to what users would do if they were able to switch providers (as in a competitive context). Specific requirements on investments would be justified only in the exceptional cases where it is difficult to define and measure the proposed objectives without ambiguities.
    c. ***Tariff level and structure*****:** Ideally, tariffs should reflect incremental costs for each dimension of service, subject to cost and demand conditions and profitability constraints. Whenever it is deemed necessary by the regulator because of objectives related to access, coverage, externalities, high fixed costs, and the like, low-consumption or access schemes may be considered. To finance such schemes, the regulator may resort to subsidies, but this entails some risks. For example, when subsidies are financed with public resources (direct subsidies), there is a risk of regulatory capture ending up in overcompensation to the provider, for example, because taxpayers' perception on excess subsidies is lower than users' perception on excess tariffs. But direct subsidies may not be a feasible instrument when public resources are scant, which leaves the option of self-finance of services, and the corresponding risk that send the wrong signals to the operator for provision and expansion. In either case (direct subsidies or cross-subsidies), the regulator must issue clear signals to the operator in order not to affect incentives to efficient provision and investment.[58]
    d. ***Mechanisms of tariff adjustment:*** In the literature of dynamic regulation, there are two extreme alternative approaches to tariff adjustment. The first one is cost-based regulation, under which tariffs and eventually subsidies are adjusted to cover operation and investment costs. This mechanism may apply to full

[58] For example, a direct subsidy should not be eliminated after the provider has invested in sunk assets (to avoid underinvestment). Cross-subsidies should be levied by the provider only after it finished expansion plans (to avoid the wrong incentives for expansion).

costs (*cost-plus* regulation) or to capital, (*rate of return* regulation). Both schemes share the characteristic that they do not induce cost reduction appropriately because cost savings are passed through to end users immediately. The second approach is called *price cap* regulation: tariffs are independent of the costs in the short term (with annual or biannual indexation to inflation and with an X-factor that passes through productivity gains to consumers), but are revised periodically (every five to ten years, depending on the evolution of future costs). This mechanism induces cost reduction or efficiencies in production, but the operator may be exposed to excessive or insufficient revenues in every period. While price cap regulation is "prospective" (future tariffs do not depend on effective cost savings), cost-plus regulation is retrospective (tariffs depend on historic costs). Usually, the common practice remains in the middle of these two approaches, if regulatory lags to accept cost changes take more than a year, or profits are passed through to consumers at dates earlier than specified, through re-determination of the X-factor. Ultimately, when the regulatory objective is to replicate the competitive processes, the mechanism of tariff adjustment should be aligned to this objective. In such a sense, a price cap mechanism with periodic tariff revisions that allow for a reasonable return under efficient operation is a good way to replicate a process in which companies face a price that is independent of individual costs, but that also follows industry costs closely as technological improvements are diffused through competitors.

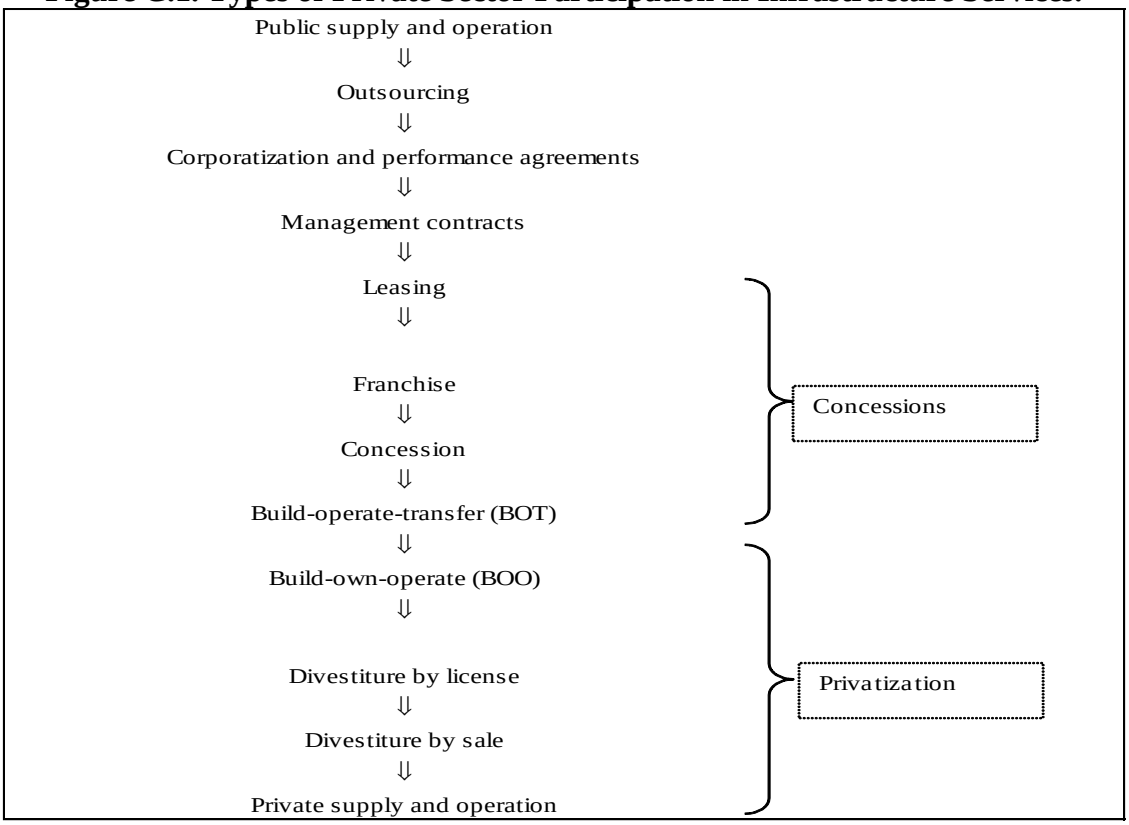
e. ***Allocation of risks*:** Optimal risk allocation suggests that risks should be borne by the party that is in better conditions to control them—in this way minimizing the possibility of moral hazard—or to diversify them or require smaller compensation to face them. Given the existence of risks in investments, operations, revenues, regulation, political interference, and so on, the multidimensional problem of risk allocation should pursue efficiency in a wide sense, which includes contact credibility and sustainability under extreme situations when outcomes are difficult to anticipate. For example, it is reasonable that a road concession should award the operator that bids the lowest present value of revenues and absorbs the construction and operation risks. In this case, the evolution of traffic is a strong determinant in the viability of a road concession, but is exogenous to the control of the operator. On the other hand, it may not be reasonable that Governments stay unaccountable of the regulatory risk that they impose on investors. If investors are fully insured (by international organizations), Government officers face a moral hazard problem, at least in the short run, since they do not have incentives to issue risk-reducing policies. Of course, there are long-run costs associated with these risks. If investors perceive the risk of expropriations, capital flies out of the country.

f. ***Guarantees*:** In order to delimit the opportunistic behavior of the private operator, the contract should foresee the obligation of the concessionaire to render the service until a new operator is selected (or, at least, during a reasonable notice that allows for replacement) and include guarantees to be executed in case of abandonment of the service. However, the regulatory framework should recognize the quality of the institutional environment, and to resort to international protection clauses (international treaties) to ensure an impartial and fair processes, in this way reducing the cost of capital (and the corresponding cost of service) required by the investor.

Different Types of Public-Private Provision (PPP) in Infrastructure and Infrastructure Services

9. **Private participation in the management of infrastructure and public utilities is possible in different ways.** For instance, from the transfer of assets (privatization) to narrow-scope contracts such as BLT (build-lease-transfer), in which the private investor builds and finances the asset and the public sector manages it, or different types of concession contracts such as BOT (build-operate-transfer), in which management is also private. The private sector can participate in different ways in infrastructure services according to the degrees of private participation (see Figure C.1).

Figure C.1. Types of Private Sector Participation in Infrastructure Services.



Source: Guasch (2004).

10. **The types of public-private participation (PPP) differ not only in terms of how end- users see them, but fundamentally on the allocation of risks, investment responsibilities, operative requirements, and contract incentives.** Starting with a pure public enterprise (entirely public operation and supply), the participation of the private sector may range from the supply of inputs or specific services to the private enterprise (outsourcing), the introduction of incentives with public management (through the constitution of corporatized companies) or with private management (through management contracts), different types of concessions (leases, franchise, concessions) or BOT contracts for the development of new infrastructure, and privatization (as shown in Table C.1).

Table C.1. Provider and Responsibilities under Different Types of Private Participation

Variable	Management contracts	Concessions	Privatizations
Ownership of physical and land assets	Government	Government	Private operator
Ownership of vehicles	Government	Government / Private Operator	Private operator
Investment responsibilities	Government	Private operator	Private operator
Service control	Government	Government / Private Operator	Government / Private Operator
Tariff control	Government	Government / Private Operator	Government / Private Operator
Revenue risk	Government	Private operator	Private operator
Cost risk	Government	Private operator	Private operator
Labor risk	Government	Private operator	Private operator
Management cost risk	Private operator	Private operator	Private operator

Source: Guasch (2004).

11. **In sectors such as telecommunications and, to a certain degree, electricity generation, the participation of the private sector has generally been in the form of privatization, accompanied by structural sector reforms, regulation, and pro-competition measures.** In other sectors, such as airports, roads, freeways, railroads, water and sanitation, and downstream segments of the energy sector, there are usually legal and (sometimes) constitutional constraints that limit the participation of private agents. In these cases, the intermediate solution of public-private partnerships (has been applied. PPPs sometimes imply a strong private role in the building and operation of infrastructure, but they do not necessarily imply a total and indefinite transfer of the assets to the private sector.

12. **There are two central characteristics of PPP that are worth mentioning): the complementary relationship (bundling) between investment and operation carried out by the same company; and the transitory private ownership (or use) of the assets related to infrastructure.**[59] Indeed, the bundling of investment and operation increases incentives to engage in cost-minimizing investments throughout the whole project life (that is, the externalities of both investment and operation are internalized, under tariff schemes different from cost-plus). But the possibility of establishing clear rules to guarantee operators' rights (for example, the collection of payments) may be a main limitation in diverse cases. The requirements to invest in infrastructure—which are very important in the Zimbabwean economy—as opposed to simply maintain existing assets, are a central determinant of how much to commit and delegate to a private operator.

13. **Besides the legal and political viability of each type of PPP, the differences in the allocation of risks and incentives can be significant.** These differences may lead to unsatisfactory results, depending on the particular provisions defined in each contract or regulatory framework. According to the specifics of each sector, the ways of imposing service obligations or investment requirements to the private operators, the guarantees (or lack of them) of exclusivity in a certain territory, the process of tariffs adjustment, the assessment of assets that form the base of remuneration, the different moments for canon payment (at the beginning of the

[59] See Engel, Fischer, and Galetovic (2008).

contract or periodically), induce different decisions by private operators and authorities, and hence different advantages for each type of PPP arrangement.

14. **Thus, while the categorization is important with respect to the roles and risks attributable to each party for every PPP arrangement, the contract details can be very different under each one of these categories when all other features are incorporated.** Specifics of the mechanism of tariff adjustment, the tariff structure, the assessment of the residual value of the company at the end of the contract, the institutional quality, and so on can lead to practically infinite real characterizations of management models.

Selection Mechanisms (Competition for the Market)

15. **The process of competition for the market—that is, the competition for the right (and obligations) to provide a certain service in an ex post noncompetitive condition— is the starting point for the interaction between the regulatory authorities and private operators of infrastructure services.**[60] In such a sense, assigning concession contracts is very different from selling assets in competitive industries, since there is a relationship between regulator and operator that affects the meaning of the tender. The question for the licensing authority is how a competitive tender can help obtain better terms and conditions through a process of competition for the market that replaces the (absence of) competition in the market.

16. **The general recommendation is to design a process that ensures transparent selection and optimizes the concurrence of potential bidders, while discouraging strategic opportunistic behaviors (that give place to later no fulfillment or renegotiation) of both parties.** To design a tender procedure, the Authority may have different dimensions or variables of interest in hand, such as a canon (or subsidy), tariffs and prices, the quality of the services, investments, and employment. Since the interest of the potential operators is in maximizing profits throughout the contract period—subject to (a) market risks (such as the evolution of the demand, competition, and operative and financial costs); (b) contractual risks (such as regulatory opportunism in the shape of renegotiations, subtle alteration of contract rights, or even confiscation); and (c) possible manipulation of the tender procedure in the search for objectives different from the best representation of the interest of the State or final consumers— transparency in the selection process constitutes both a constraint and a variable of interest at the same time.

17. **The highest transparency is achieved when the competition for the market is structured based on one dimension, while the other dimensions are set in advance (for example, fixing the technical requirements, or financial capacity) in order to avoid the comparison of bids in these additional dimensions.** This is a decision to be taken by the Authority and should not mean that the chosen variable (lowest tariff or highest canon, for example) is the most relevant one for the Authority (compared to coverage, subsidies, taxes, quality or investments, and the like), but rather indicates that the Authority is not willing to expose other dimensions to the competitive result.

[60] This process is intended to be a starting point and not a substitution for regulation (as was originally proposed by Demsetz (1968).

The Problem of Renegotiation

18. **In long-term relationships, several risks may appear, including lack of compliance with contract clauses, social resistance to (presumably) high tariffs, and breach of contract clauses by line ministers or regulators.** Renegotiation is a viable option to solve risks from incomplete contracts, when external factors arise (such as macroeconomic shocks). However, other opportunistic risks may arise, which should also be avoided, such as opportunistic behavior by the Government or operator. Specifically, renegotiations that start at the beginning of the contract may put into risk the results sought by the competitive tender procedure, by converting it into a bilateral contract. The tender procedure should be very strict in the selection stage, trying to detect over-optimistic bids that, after the contract award, will require prompt renegotiation. As a general rule, the contract rules set forth in advance provide the important but difficult-to-define conditions that are not subject to renegotiation. The following is a list of typical factors that lead to renegotiation (see details in Guasch, 2004): inadequate attention to political and institutional issues, Government tolerance of aggressive bidding, design of faulty contracts, opportunistic behavior by Government (changing rules and effects of a contract), and defective regulation.

Institutional Design

19. **A final dimension that is crucial in a model of infrastructure management with private participation is the institutional framework that accompanies the process of policy implementation.** This consideration is centered on the role of diverse public organizations in the management of the infrastructure. A basic division of tasks between the legislative and the executive power, in alignment with the recommendations of the economic theory of the regulation, is that the role of the legislature should be concentrated in the definition of the regulatory frameworks, while the ex-post control of the tasks should be performed by the executive power and the regulatory organizations or public companies; the legislature should not intervene directly in the operative decisions or in regulation (such as the discussions on tariffs). The executive should be in charge of the definition of the sector policies to be confirmed or rejected by the legislature in the form of new legislation, and delegate the regulatory tasks to public agencies. These agencies should be sufficiently protected from the political swings that characterize the ministries or cabinet departments. On the other hand, the role of the judicial power should be limited to the interpretation of the law and contracts.

20. **From another perspective, both models of public and private management have common and specific institutional requirements.** In both cases, it is necessary to structure the functions of planning, selecting, and evaluating investment projects appropriately, deciding as to what agencies will execute them and how their authority will be exerted, and controlling the results during the whole process. The dimensions of planning, selection, and evaluation of projects are functions of the State that do not change too much under both models. This last observation rules out the idea of private management without state planning. For example, Guasch and Fajnzylber (2008) propose the following components for best practice with respect to planning investments where there is participation by private operators:

(i) Sector ministries: Planning and identification of projects.

(ii) Minister of Finance: Prioritization and coordination of projects (to internalize the effects on public debt)

(iii) PPP Agency: Design of contracts and selection mechanisms for participation of the private sector (there are advantages when the office that designs and plans PPP is different from the office that controls and follows up contracts)

(iv) Sector regulatory agency: Control of the execution of contracts

(v) Monitoring or audit units: In charge of the ex-post control.

This model can be extended to public provision in a straightforward fashion.

Appendix D. Examples of Tariff Schedules for Mobile Telephony, Selected African Countries.

		Monthly fee (post paid)- Subscription (prepaid)	Post paid	Intra Urban Tariff (peak) on net	Intra Urban Tariff (off-peak) on net	National calls (peak) mobile to fixed	National calls (off peak) mobile to fixed	Free minutes
Zain (Zambia)	classic per second		Yes	0.27	0.15	0.53	0.36	
	classic per minute		Yes	0.25	0.15	0.44	0.30	
	family plan		Yes	0.26	0.13	0.42	0.27	
	generation x plan		Yes	0.26	0.13	0.42	0.27	
	freedom plan	10.70	Yes	0.22	0.14	0.32	0.27	40
Zain (Malawi)	macheza plan		No	0.33	0.12	0.44	0.16	
	friends per minute plan		Yes	0.20	0.15	0.29	0.20	
	friends per second plan		Yes	0.30	0.24	0.42	0.30	
	commerce plan services	9.9	Yes	0.20	0.15	0.22	0.20	
	business services	7.5	Yes	0.20	0.15	0.20	0.15	20
	executive pre paid plan		No	0.20	0.15	0.22	0.20	
Zain (Kenia)	Pamoja prepaid		No	0.08	0.03	0.09	0.09	
	Vuka prepaid		No	0.09	0.09	0.13	0.13	
	Business- Biashara postpaid / Business- Pamoja postpaid	3.91	Yes	0.08	0.03	0.16	0.16	
	Business- Zain Jipange postpaid	3.91	Yes	0.08	0.03	0.18	0.18	
	Vuka postpaid	3.91	Yes	0.09	0.09	0.13	0.13	
Vodacom (Lesotho)	Super talk 50	13.52	Yes	0.19	0.14	0.19	0.14	50
	super talk 100	25.96	Yes	0.18	0.14	0.18	0.14	100
	Family	4.30	No	0.36	0.13	0.39	0.13	
	Budget	8.61	No	0.30	0.11	0.32	0.11	
	Master	17.21	No	0.20	0.11	0.22	0.11	
	Executive	21.52	Yes	0.20	0.11	0.22	0.11	
	Corporate Direct	7.17	Yes	0.16	0.11	0.22	0.13	
MTN (Swaziland)	Conecta Plan	13.0	Yes	0.27	0.12	0.30	0.12	50% of fixed fee
	Conecta Plus	23.9	Yes	0.22	0.12	0.24	0.12	50% of fixed fee
	Conecta 1000	163.8	Yes	0.18	0.12	0.20	0.12	fixed fee
	Pay as you go standard		No	0.30	0.22	0.30	0.22	
	Pay as you go-call per second		No	0.41	0.41	0.41	0.41	
	MTN Zone		No	0.27	0.12	0.27	0.27	
Vodacom (S.A.)	Business call	22.01	n.a.	0.21	0.11	0.21	0.11	
	Talk 120	37.48	n.a.	0.21	0.11	0.21	0.11	120 minutes
	Talk 240	51.16	n.a.	0.21	0.11	0.21	0.11	240 minutes
	TopUp 135	16.06	n.a.	0.21	0.11	0.32	0.11	fixed fee
	TopUp 590	70.20	n.a.	0.20	0.20	0.20	0.20	fixed fee
MTN (S.A.)	MTN Anytime 50	5.95	n.a.	0.27	0.27	0.27	0.27	fixed fee
	MTN Anytime 350	41.64	n.a.	0.23	0.23	0.23	0.23	fixed fee
	MTN Anytime 1500	178.47	n.a.	0.18	0.18	0.18	0.18	fixed fee
	MTN Off peak 50	5.95	n.a.	0.34	0.13	0.34	0.13	fixed fee
	MTN Off peak 100	11.90	n.a.	0.34	0.13	0.34	0.13	fixed fee
	MTN Off peak 200	23.80	n.a.	0.34	0.13	0.34	0.13	fixed fee
Leo (Namibia)	Leo 50	50.00	n.a.	0.11	0.11	0.11	0.11	50 minutes
	Business Lite	150.00	No	0.11	0.11	0.11	0.11	150 minutes

Source: Authors, compilations, based on information available on operators' webpages. Some operators, such as Vodacom S.A., offer more than 20 different packages.