

Chapter 8

Infrastructure Development

The government of Zambia has integrated infrastructure investment into broader economic growth objectives under the five-year national development plan. This chapter maps progress in developing and attracting investment in all key infrastructure sectors: telecommunications, electricity, transport, and water and sanitation. It indicates that Zambia has a relatively good network of primary and secondary roads, although it is significantly weaker in rural areas. The deteriorating rail networks are also a crucial issue because as a land-locked mineral-exporting country, Zambia has to rely on regional transport infrastructure. While private investment in telecommunications and the energy sector is relatively recent, it carries strong potential. This chapter also analyses the regulatory and institutional framework for infrastructure development, including how the government evaluates the country's most pressing infrastructure needs.

Sound infrastructure development policies ensure that scarce resources are channelled to the most promising projects and address bottlenecks limiting private investment. Developing Zambia's infrastructure is a priority for the government and it features prominently in the SNDP. An improved regulatory framework for infrastructure development, including the setting up of a Public-Partnership Unit, offers the government avenues to better address infrastructure bottlenecks, in particular by attracting private investment.

1. Process used to evaluate infrastructure investment needs

What processes does the government use to evaluate its infrastructure investment needs? Does the national government work in co-operation with local and regional governments to establish infrastructure investment priorities? Does the government have clear guidelines and transparent procedures for the disbursement of public monies funding infrastructure projects? Are the regulatory agencies that oversee infrastructure investment and the operations of enterprises with infrastructure investments independent from undue political interference?

The government has integrated infrastructure investment into broader economic growth objectives under the five-year national development plan. Therefore, emphasis is placed on infrastructure options that are most capable of stimulating economic growth by, for example, facilitating trade and commerce, increasing access to health and education facilities, and opening up new areas of investment. It is also important to the government that infrastructure raises growth by increasing social returns without crowding out other productive investments. While capital development is important, the government is also committed to upgrading physical infrastructure across the country. This process also allows infrastructure to help open up and develop rural areas, thereby curbing the rural to urban drift.

Guidelines and procedures for the disbursement of public funds

Zambia spent about USD 700 million per year between 2001 and 2006 on its infrastructure, with USD 457 million derived from tax revenues and user charges for utility services. Two-thirds of this spending is for capital

expenditure, while the rest goes to operations and maintenance. However, while this level of spending – about 10% of GDP – is high, it remains below the estimated 20% of GDP that Zambia needs to spend over the next decade in order to catch up to the infrastructure levels in other developing countries. Public resources make a significant contribution and official development assistance (ODA) is an important, but relatively small, source of finance. Private investment, at 15% of the total contribution, is on par with ODA, but there is greater scope for an increase. Zambia recently received a B+ credit rating from Fitch, which places it on par with Nigeria and Angola and could allow it to tap into international capital markets. Indeed, President Banda has recently expressed a goal to issue a global bond, of which the proceeds would benefit infrastructure development in Zambia. Such innovative financing mechanisms can help to close the country's infrastructure funding gap.

In addition to increasing financing, the government can also address inefficiencies in the public management of infrastructure, by improving cost-recovery in the power sector, improving capital budget execution in the transport sector, and improving operational efficiency in the water sector. These measures could save about USD 315 million a year – a sizeable amount given current spending levels and the significant financing needs.

The government has put in place a framework for public funding of infrastructure projects, including procurement guidelines. It advertises tenders for infrastructure projects both in the public, private and international media, depending on the size of the project. Bidders are then invited to attend the opening of the bidding document and responses to all the queries are made available to the bidders following tender evaluation. The ZPPA, ZCCP, ACC, ZDA and other related government agencies promote the principles of transparency and procedural fairness through public tender and bidding processes of public infrastructure contracts.

Where financing and administrative anomalies exist, corrective actions have been taken. For instance, in 2010, following a special audit of the Road Development Agency (RDA) by the Auditor General's Office, the Boards of the RDA and NFRA were disbanded and replaced, and disciplinary actions were taken against some members of staff. Moreover, measures are being undertaken to enhance inter-agency co-ordination and the government has been working on enhancing capacity in internal audit, procurement, financial management, and monitoring activities at the RDA. It is also working with stakeholders to draw-up a bankable ROADSIP II programme, which aims to rehabilitate the nation's roads over the course of ten years.

Establishment of Public Private Partnerships for infrastructure development

The government has recognised that the ability to encourage private investment is key to stronger economic performance. Indeed, the national treasury has limited resources for the rapid implementation of infrastructure development projects critical to stimulating economic growth. The government has therefore identified Public Private Partnerships (PPPs) as a viable means of infrastructure development that can effectively address the finance and management constraints faced by the public sector. In this regard, a PPP policy was launched in 2008 to provide an institutional and legal framework for encouraging the private sector to play a larger role in procuring and financing public infrastructure projects and services that have traditionally been the direct responsibility of the public sector. The main objectives of introducing PPPs are to:

- forge strategic partnerships with the private sector for improved service delivery and infrastructure development;
- enhance transparency, accountability, equity, fairness and “value for money” in public infrastructure development and service delivery;
- supplement fiscal revenues and expenditure through appropriate risk transfer to the private sector who can infuse increased competitiveness and innovation; and,
- improve the overall maintenance and management of public assets by infusing private sector efficiency and effectiveness.

In 2009, the government went further to enact the Public Partnership Act (no.14 of 2009) in order to provide a legal and institutional framework for PPPs. The government also established a PPP Unit under the Ministry of Finance and National Development (MFND). Its main function is to identify and promote opportunities for the engagement of the private sector in the development and delivery of infrastructure and services. The main MFND schemes include: Build Operate and Transfer (BOT), Build Own and Operate/Transfer (BOO/T), or management of public infrastructure under special management contracts or concessions. The Unit has a full time technical team of seven (7) members of staff, headed by a Director. As a further step, the government has also established a Public Partnership Council (PPC) chaired by the Minister of Finance and National Planning. Its membership includes four other Ministers and four persons appointed by Cabinet, whilst the Permanent Secretary responsible for Budget and Economic Affairs at MFNP acts as the secretary of the Council.

A PPP Technical Committee reports to the PPC, chaired by the Secretary to the Treasury that is constituted by senior government officials, namely: the Attorney general, and Permanent Secretaries responsible for Works and

Supply, Commerce, Trade and Industry and Local government and Housing. Other members of the Technical Committee include representatives drawn from: the Engineering Institute of Zambia, Economics Association of Zambia, national Construction Council, and the Environmental Council of Zambia. The PPP Unit works directly under the supervision of the Technical Committee.

Following its establishment, the PPP Unit has taken direct responsibility for supervising a number of on- going and new infrastructure development and management projects, undertaken in partnership with the private sector. These include the following projects:

Table 8.1. Examples of PPP projects

Type	Examples of projects	PPP type	Status
Roads	Lusaka – Ndola Kitwe-Chingola Chingola- Jimbe Lusaka – Livingstone Kafue – Chirundu	BOOT/Tolling	Invitations for tender have been advertised and some projects awarded
Rail	Zambia Railways network	Concession	Has been operational since 2003
Border Post Infrastructure	Kasumbalesa border with DRC Kazungula border with Botswana Nakonde border with Tanzania Mwami border with Malawi Jimbe border with Angola Kipushi border with DRC	BOOT	Kasumbalesa is being developed whilst invitations for tender are being processed for the other borders
Energy	Kafue Gorge Lower Itzhitezhi Hydro Upgrade of Indeni oil refinery and Tazama oil pipeline	BOOT	A developer for Kafue Gorge Lower has been identified
Estates and Housing	Government office complex UNZA hostels and Business Park	Maintenance contract has been agreed for the Government office complex whilst UNZA will involve BOT arrangements.	Completion of the Office Complex is in progress whilst the UNZA hostels have been completed. A feasibility study for the UNZA Business park is in progress.

The aim of the government is to engage the private sector in funding and managing such projects under structured strategic partnerships so as to leverage national resources that can then be channelled into other areas where direct public investment and intervention are required. Whilst the PPP concept has received wide recognition and support from the private sector, the government faces the challenge of establishing a more transparent and consistent framework for identifying infrastructure projects that should be floated as PPPs and selecting private sector partners that will be given development and management contracts. At present, these processes have been implemented administratively largely using executive orders rather than through public tenders. In addition, the government needs to strengthen its

contract negotiation and management capabilities so as to ensure that national interests are protected at all times and that selected contractors are subjected to enforceable regulatory standards. Meanwhile direct involvement of the executive in the determination of what compliance standards may be waived for particular investors should be lessened. By addressing such challenges, the processing of PPP contracts can be then made more transparent and engender wider public confidence.

Independence of regulatory agencies

The official government policy is that regulatory agencies overseeing investment and operations of enterprises must be independent from undue political interference and supervised by independent Boards. In practice, however, processes applied to appoint and revoke appointments of board members are not as transparent as would be desired. Ministry posts are periodically reshuffled by the President, preventing the accumulation of institutional memory in regulatory agencies. In most instances, each new Minister tends to reconstitute boards of agencies under their portfolio. In some cases, reconstituting boards can open the door for nepotism if appointed members are beholden to the dictates of the appointing authority, instead of serving the public interest.

In addition, portfolio ministries have a tendency to issue directives to the regulatory agencies, by-passing the boards and on some occasions going against internal procedures and official policy. In addition, the composition of some boards does not always take into account members' technical and managerial competencies, which could undercut the managerial efficiency of the agency.

2. Measures taken to uphold transparency and procedural fairness in contracts

What measures has the government adopted to uphold the principle of transparency and procedural fairness for all investors bidding for infrastructure contracts, so as to protect investors' rights from unilateral changes to contract terms and conditions? What steps have been taken to attract investors to supply infrastructure at fair and reasonable prices, to ensure that investor-state contracts serve the public interest, and to maintain public support for private involvement infrastructure?

Over the last five years, the government has implemented a number of initiatives to streamline procedures for public procurement, including for

infrastructure projects. The initiatives are aimed at enhancing transparency, protecting public assets against conversion, ensuring cost effectiveness, and preventing corruption. As part of this effort, the Zambia Public Procurement Act was passed in 2008. It repealed the Zambia National Tender Act and transformed the Zambia National Tender Board (ZNTB) – until then the public procurement entity – into the Zambia Public Procurement Authority (ZPPA), a regulatory agency.

The new Act has stronger checks and balances and makes provisions for independent persons that sit on the Procurement Committees. Previously, Committees of the ZNTB were constituted by senior government officials, who were also the consumers of the goods and services being procured, thereby presenting a conflict of interest. The ZPPA will be expected to provide more stringent oversight on all public entities that use public resources to procure goods and services, while also increasing spending thresholds that were imposed on Ministries, Provinces and Spending Agencies (MPSAs) under the ZNTB Act.

Another measure taken by the government is to restrict “single sourcing” of suppliers unless dictated by the situation (i.e. when there are no other suppliers or in response to national emergencies). Under the new Act, all MPSAs are required to advertise tenders in the press with expressly stated tendering instructions, including closing dates and times for the receipt of tenders. The advertisements are sometimes also placed in the international media, depending on the scale and technical complexity of the project.

Where tender conditions change or particular bidders request clarification, the response of the entity receiving tenders must be circulated to all other potential bidders and where site visits or technical specifications are to be provided, all purchasers of tender documents must be invited or given equal access to the information. The opening of tenders is also done in public with all bidders in attendance. In addition, tender awards for all major infrastructure projects are to be published in the press, including the range of bids received and reasons for the selection of successful bidders. So far, the main challenge faced in the implementation of the Act and regulations has been ensuring that MPSAs adhere to these procedures.

3. Telecommunications sector

In the telecommunications sector, does the government assess market access for potential investors and the extent of competition among operators? Does the government evaluate whether telecommunication pricing policies are competitive, favouring investment in industries that depend on reliable and affordable telecommunications?

Since 1994, when the ICT sector was liberalised, Zambia has experienced rapid growth of private service providers of mobile telephony, Internet, radio, and television broadcasting services. International suppliers of ICT hardware and software have also set up local branches in order to respond to the liberalised market and to growing demand for efficient and cost-effective services.

In 2009, an ICT policy was developed and a new Information and Communication Technology (ICT) Act No. 15 was passed by Parliament, both of which helped spur the growth of mobile telephony and Internet services. Other than the ICT Act, the Electronic Communication and Transaction (ECT) Act and the Postal and Courier Services Act were also passed in 2009 and placed the Zambia Information and Communication Technology Authority (ZICTA) under a single regulatory authority. These changes were undertaken in response to the convergence of Internet and telecommunications technologies, which had previously been considered as two different platforms. All ICT services are now placed under a single regulatory framework with a unified licensing regime administered by ZICTA. The regulatory aspects of the sector are more clearly defined under ZICTA, which licenses and regulates tariffs charged by all service providers.

Though the provision of fixed telephone lines and international voice services was liberalised, until 2010 investment in these services by the private sector was severely limited due to high license fees, leaving Zambia Telecommunications Corporation (ZamTel) as the only service provider. For example, until 2010, the international gateway fee was USD 12.5 million per annum. The change in the regulatory framework has further opened up the sector and reduced the market dominance of ZamTel in the provision of the microwave “back bone” for both domestic and international gateway services. In addition, the international gateway fees were reduced from USD 12.5 million to USD 300 000 per year, effective from 2010. This has created a more attractive and competitive investment environment. It has also led to the sharp reductions in tariffs paid by customers and to the modernisation of ICT services, such as migration to broadband from dial-up Internet services and the promotion of more competitive roaming services for mobile telephony.

Assessing market access for potential investors

ZICTA monitors subscriber growth trends for ICT services. In this regard, ICT service providers are required to submit quarterly returns providing market data, and yearly reports with detailed information on the range of services that they provide and proposed tariffs which must be approved by ZICTA.

Table 8.2. **Mobile telephony: Subscriber base growth trends**

	Subscribers	Growth rate (%)
2000	49 957	31.5
2001	97 900	96.0
2002	139 258	42.2
2003	204 150	46.6
2004	413 120	102.4
2005	949 558	129.8
2006	1 663 051	75.1
2007	2 639 026	58.7
2008	3 539 003	34.1
2009	4 165 101	17.7

Source: ZICTA.

Under this environment, mobile telephone service providers have established communications infrastructure country-wide. Rural communities have access to mobile telephones at more competitive rates. As a result, there has been a decrease in fixed line subscriptions, although ZamTel has migrated to digital systems. Also, despite the rapid growth of a mobile telephony subscriber base, Internet services have been largely restricted to corporations and public institutions.

Table 8.3. **Internet services: Subscriber base growth trends**

	Subscriber base by type			Growth rate (%)
	Dial up	Broadband	Total	
2001	7 627	621	8 248	
2002	10 826	821	11 647	41
2003	10 857	1 143	12 000	3
2004	15 334	954	16 288	36
2005	10 179	703	10 882	-33
2006	10 067	1 929	11 996	10
2007	12 578	5 368	17 946	49.6
2008	12 586	5 703	18 289	1.9
2009	6 684	10 720	17 754	-2.9

Source: ZICTA.

In relative terms, there has been a rapid migration from dial-up services, which imposed a higher cost and slow data processing, to broadband which is cheaper and faster. In addition, mobile telephone service providers are increasingly including Internet facilities that their customers can access using open platform mail services such as Yahoo, Gmail and Google. Such facilities have also helped to increase access to Internet services for individual users.

All the same, Zambia's ICT network is concentrated along the north-south area, where most of the mining activities are contained. In order to promote increased access and usage of ICT services throughout Zambia and to bridge the digital divide between urban, peri-urban and rural areas, a Universal Access and Services Fund has been established by the ICT Act of 2009. This fund, administered by ZICTA, aims to improve the provision of electronic communications services in unserved or under-served areas and communities. The fund is currently being built through turnover charges levied against ICT service providers. Mobile telephone service providers, for instance, are required to pay to ZICTA 5% of their sale turnover while Internet service providers need only pay 4%, following a recent reduction. However, it is perceived that the transparency of operation of the Universal Access and Services Fund could be improved, as the ICT service providers are not involved in monitoring or accounting for its use. In addition, this charge has made entry difficult for new entrants that wish to become Internet Services Providers (ISPs), especially given that this segment of the ICT market is growing much more slowly.

Monitoring competitiveness of pricing policies

ZICTA is empowered by the Act to approve all tariffs charged by ICT service providers. It also regularly monitors and evaluates whether telecommunication pricing policies are competitive, and whether they favour investment in industries that depend on reliable and affordable telecommunications. Section 40 (4) of the ICT Act also places an obligation on ZICTA to publish guidelines on the definition of the electronic communication market and approved rates in the daily newspapers. It also carries out evaluations of license-holders perceived to hold a dominant position in the market.

The process of tariffs approval, however, has rather demanding disclosure requirements. Service providers are required to provide detailed financial projections of income, expenditure and profit margins in support of their proposed tariff adjustment schedules. This poses the danger of reintroducing price controls rather than allowing the market forces of demand and supply to prevail.

4. Electricity sector

Has government developed a strategy to ensure reliable access to electricity services by users, and economic incentives to invest in and supply electricity? What programmes exist to ensure access to electricity services by a wide range of users and on a least-cost basis? Are these programmes time-bound and based upon clear performance targets?

Of all the infrastructure sub-sectors in Zambia, power has the greatest investment needs – an estimated USD 600 million annually to rehabilitate existing generation facilities and to develop an additional 1 700 MW in new capacity. These investments are sorely needed given that the inadequate functioning of the power sector poses one of the biggest constraints on economic growth and business activities. In the early 2000s, for instance, this reduced per capita growth by 0.13 percentage points, while firms have reported that infrastructure constraints, mainly in power, are the biggest obstacle for firm productivity. Since 2008, the country has experienced a series of power outages, which occur about 50 days a year and are more frequent than in other middle-income (6 days/year) and resource-rich (15 days/year) countries. Moreover, power provision is mainly directed at the mines and only 22% of the population has access to electricity. Access rates, at 3.5%, are particularly low in rural areas and this could undercut the potential for agriculture to move up the value chain.

Belying its power shortage problems, Zambia enjoys abundant hydropower resources. Out of a total installed capacity of 1 760 Mega Watts (MW), 1 672MW is produced by hydro generation plants while 88 MW is produced by thermal power plants. Moreover, Zambia has the potential to substantially increase electricity generation and become a major exporter to the Eastern and Southern African regions. For example, the country has about 4 000MW in untapped hydro-power generation capacity that can be immediately exploited and exported.

Exploiting its enormous energy potential presents an opportunity for Zambia to meet growing demand, which stands at around 1 500 MW. Moreover according to one projection, consumption from new mining operations will increase by 40% over the 2010/2011 period. However, despite the potential and the growing demand, generation capacity has stagnated for decades. The national utility, ZESCO, does not have sufficient resources to develop new capital projects, nor can it access international financial markets. Moreover, it remains a vertically integrated state monopoly, although private sector participation has been in place since the Electricity Act was passed in 1995. At present, in addition to ZESCO, the Copperbelt Energy Corporation, a private company, generates and transmits electricity domestically and in the region through the Southern African Power Pool (SAPP). It accounts for 50% of power consumed in Zambia, mainly by mines. Lunsemfwa Hydro Power Company, an independent power producer, operates at a smaller scale and supplies power to ZESCO through a Power Purchase Agreement. Additional private sector involvement in the power sector could help to boost generation and improve operations, although the low tariff structure has impeded private investment so far.

Stimulating private investment for increased and reliable electricity services

Government has recognised that in order to ensure reliable access to electricity services, there is need to encourage private sector investment in the development of new power generation infrastructure and distribution. This however requires a legal and institutional framework that would give confidence to the private sector, especially given that the pricing and supply of electricity has generally been regulated under a state monopoly.

In 1994, a National Energy Policy (NEP) was put in place for the electricity sector. Among the key strategies outlined in the NEP was the opening up of electricity power generation and its distribution to the private sector. In this regard, the Zambia Electricity Supply Act, which had entrenched the monopoly of ZESCO, was repealed and replaced by the new Electricity Act of 1995. In the same year, the Energy Regulation Act was also introduced and provided for the establishment of the Energy Regulation Board (ERB) in 1997. The ERB is the sole licensing authority for operators in all the energy sectors (i.e. including petroleum, bio-fuels and solar power).

In 2008, a new National Energy Policy was launched to bring into line energy sector development objectives in line with priorities of the country's Vision 2030, which commits the government to ensuring: "universal access to clean, reliable and affordable energy at the lowest total economic, financial, social and environmental cost, consistent with national development goals". It also provides for the development of 5 year intermediate energy sector programming according to national development plans. The new Energy Policy has guided the formulation of the Power Systems Development Master Plan (PSDM). This plan aims to co-ordinate the preparation and implementation of least cost expansion options for the generation, transmission and interconnection of electricity supply in the country. The immediate aim is to achieve stabilization of supply in the power sector and implementation of new projects that would add a total of 4 337 megawatts to the national electricity grid. Implementation of the PSDM, which is to be launched in June 2011, is expected to cost about USD 12.1 billion by the year 2030.

The PSDM is also guiding the implementation of other electricity sector development initiatives, such as the following:

- i) The Rural Electrification Master Plan: This aims to increase electricity access from 3.1% to 51% in rural areas and from 48% to 90% in urban areas by the year 2030 in order to foster economic development. The plan also aims to raise the nationwide electrification from the current 22% to 66%. The Master Plan, estimated at USD 50 m per year, is mainly targeting rural

areas not connected to the national grid and encompasses schools, health facilities and communities that are active in agriculture.

- ii) **Electricity Strategy:** This strategy identifies and prioritizes power projects for short, medium and long term development.

In addition to the above measures, the Office for Promoting Private Power Investment (OPPPI) was established in 2000. The OPPPI, which operates as a “stand-alone” unit of the Ministry of Energy and Water Development (MEWD), is tasked with the responsibility of promoting and facilitating private investment in hydro-electricity development. Among its main functions, the OPPPI closely monitors electricity generation capacities in the country and identifies new hydro-power development investment opportunities. In this role, it facilitates the preparation of technical feasibility studies and of project financing proposals. It also co-ordinates the identification of potential investors and assists them in procuring the necessary permits and investment incentives, working closely with both the ERB and ZDA.

The OPPPI, however, operates with a limited budget and is not able to initiate and update surveys on the country’s hydro-power generation potential which could be floated for private investment. It is also unable to facilitate the preparation of the necessary pre-feasibility studies that could then be packaged for investment promotion. Instead, a number of current initiatives that have resulted in new private investment in hydro-power development have been facilitated directly by the government engaging the private sector through bi-lateral co-operation arrangements. This has included the implementation of the Power Rehabilitation Project, which focuses on rehabilitating and upgrading the large hydropower stations presently operated by ZESCO. However, this process has exacerbated load shedding, as happened in May 2011 when the generators at Kariba North Bank hydro-power station were shut down for maintenance works, thus reducing the national capacity by 180 MW.

As a way of alleviating this situation, government Policy is to encourage and attract not only private investors but also to empower public companies. This is being done through the following:

- Promoting Public – Private Partnerships (PPPs) such as the Kafue Gorge Lower and Itzhi – Tezhi Power Projects. These are being financed and constructed by the private sector under Build, Own, Operate and Transfer (BOOT) arrangements.
- Promotion of Public Investments such as the Kariba North Bank Extension (wholly owned by ZESCO).
- Promotion of Private Investments such as the Kalungwishi and Kabompo Projects.

- The Multi – Year Electricity Tariff Adjustment Framework – this is aimed at attracting further investment into the sector by ensuring that tariffs allow for cost recovery.

Government has recently supported a strategy to ensure reliable access to electricity by users, while providing economic incentives to invest in and supply electricity. By June 2010, a total of 67 rural electrification projects out of this plan had been completed while 24 projects were ongoing. The Rural Electrification Authority (REA) is rolling out the Rural Electrification Master Plan (REMP) whose cost had been estimated at about USD 50 m per year and is mainly targeting rural areas not on the national grid. Schools, health facilities and communities that are active in agriculture are also included. As part of these efforts, government is now implementing its REMP.

Both the cost of producing power in Zambia (at USD 0.08 per kilowatt-hour [kWh]), and the tariffs charged to consumers, are some of the lowest in Africa. However, the low tariffs are not high enough for full cost-recovery, which has severely impeded private investment. Over the past few years, this has begun to change as the Energy Regulation Board has approved tariff increases, although the raises always fall short of ZESCO's requests. This is now beginning to attract private investors in power generation as the tariffs are becoming cost reflective, but additional revisions to the power tariff structure may be needed if Zambia hopes to attract even more investment in the sector.

The government's plan is to upscale installed capacity to 3 000 MW by 2016. Set out below is a table showing the projects being implemented aimed at the expanding national electricity generation capacity.

Table 8.4. **Expansion of hydropower generation capacities**

Station	Current capacity	Planned capacity	Status of major works
Power Project Kariba North Bank	600 MW	720 MW	Completed
Kariba North Bank Power Extension Project (NBE)	Nil	360 MW	Due for completion in 2012
Kafue Gorge Hydropower Project	900 MW	990 MW	Completed
Kafue Gorge Lower Project	Nil	750 MW	Due for completion in 2016
Itezhi-tezhi Project	Nil	120 MW	Due for completion in 2015
Kalungushi Hydro-electric Project	Nil	218 MW	Due for completion in 2016
Kabompo Gorge Hydro-electric Project	Nil	40 MW	Due for completion in 2015
Total	1 500 MW	3 198 MW	

The proposed Kafue Lower (700 MW), Itezi Tezi (120 MW), Kabompo (440 MW) and others are scheduled to come on line by 2016. The above

programmes are clearly time bound. For mini-hydro- generating projects the ZDA provides some incentives, while the REA also gives subsidies on merit.

Programme for ensuring least cost basis to electricity services

The government's objective is to align electricity tariffs with economic costs of supply whilst also enabling ZESCO to invest in the rehabilitation and expansion of its generation and distribution capacities. In this regard, the Energy Regulation Board (ERB) has established Key Performance Indicators (KPIs) that it uses to monitor the performance of ZESCO. The KPIs framework is a regulatory mechanism used to induce efficiency by directly relating tariff awards to the utility's performance.

In August 2010, ZESCO was awarded a tariff increase of 17% and a further adjustment of 17% in 2011. Electricity tariffs so far approved for ZESCO have however not been correlated to its performance. ZESCO was given a 3 year grace period to address efficiency improvements and align its performance incrementally, according to the agreed targets under five criteria, as shown below.

The results of the performance monitoring exercises conducted by the ERB against ZESCO's KPI are published in the print media as a condition of the Multi-Year Tariff Framework. The scores awarded to ZESCO against each of the above KPIs covering the period January 2008 to June 2010 are also shown below. The results indicate that ZESCO is not achieving the set targets although it has made notable progress in some areas, such as in bill collection. ZESCO faces serious challenges in collecting payments from public institutions, a situation that affects its cash flows and ability to invest in the timely rehabilitation and expansion of infrastructure. Moreover, while ZESCO is able to disconnect private consumers that default, it cannot apply this principle to the government. For example, in December 2010 ZESCO was negotiating a debt swap with the government to the order of ZMK 209 billion. ZESCO may also have to reconsider its staff tariffs, which the ERB has found to be uneconomical and unfair to regular customers, who have been bearing the cost rather than ZESCO itself. The Multi-Year Tariff Framework could also be revised to include mines, which consume the bulk of electricity in Zambia but pay relatively lower tariffs.

Another factor affecting the company is management instability. This is due to frequent replacements of both board members and senior management through government directives. The company is not able to operate with adequate autonomy despite being the dominant producer and distributor of electricity supply in the country (i.e. accounting for about 95% of all generated power and 90% of distribution).

Table 8.5. Key performance indicators and assessment results, December 2010

No.	Key performance indicators	Standards/Targets	Actual performance levels
1.	Metering	<p>ZESCO is required to meter all newly connected customers.</p> <p>Reduce the number of days it takes to connect new customers to 30 days by March 2011.</p> <p>Reduce backlog of 126 unmetered customers to 21 120.</p>	<p>Between January 2008 and December 2009, ZESCO connected a total of 58 284 customers, out of which only 10 562 were metered. This translated to only 18% of new connections being metered.</p> <p>In 2008, ZESCO recorded a marginal two-day reduction, while in 2009 a notable reduction of 15 days was recorded.</p> <p>As of June 2010, the backlog was 114 364.</p>
2.	Cash management	<p>Reduce the amount of money owed in unsettled bills by customers to less than 17% of total turnover by March 2011, from 45.37% in December 2007.</p> <p>Reduce trade receivables to not more than 17% of turnover by March 2011.</p> <p>Reduce debtor days, <i>i.e.</i> related to the time ZESCO takes to collect money from customers, which in January 2008 stood at 155 days. The utility was expected to reduce debtor days by an average of 32 days per annum.</p>	<p>ZESCO's total receivables for the first quarter of 2010 were 63% of turnover against a target of 24.7% set for that period. In the second quarter, the turnover was 50% against the target of 22.4%.</p> <p>In December 2008, trade receivables stood at 61% against a target of 48%. In the first 6 months of 2010, the receivables were 32% against a target of 23%.</p> <p>This target was not met in 2008, where only a reduction of 7 days was recorded, while in 2009 debtor days were reduced by 18 days. In 2010, debtor days were reduced by 7 days in the first quarter and by 5 days in the second quarter. This was against the set targets of 14 days per quarter.</p>
3.	Staff productivity	Measures the number of customers against each ZESCO employee. The target is 100 customers to one member of staff by March 2011.	In January 2008, the ratio was 63 customers to one ZESCO employee. June 2010, the ratio was 92 customers per employee.
4.	Quality of service	Measures improvements in ZESCO's quality of service in relation to the duration of unplanned outages, which are unexpected power outages excluding scheduled load shedding.	Unplanned outages in the first quarter of 2010 reduced by 30.1 hours, ending the first quarter at 22.2 hours against 52.3 hours recorded in December 2009. However, performance declined in the second quarter of 2010, which closed at 23.9 hours.
5.	Systems losses	Transmission losses, which are energy losses that occur during transmission of power, should not be above the 3% target.	Distribution losses (energy lost during distribution on 66 kv and below lines) stood at 15% at the end of both the 1st and 2nd quarters of 2010.

Source: Energy Regulation Board – December 2010.

For the foreseeable future, ZESCO will remain the dominant supplier of electricity in Zambia. The company will therefore have to ensure that its operations are managed in an efficient and effective manner. As the results of the most recent monitoring exercise carried out by the ERB in December 2010 indicate, ZESCO's performance is far below expected standards, a factor that translates into poor reliability of supply. This situation also increases the cost of access for consumers, especially the business sector, that could otherwise be mitigated if the company operated more efficiently. Priority therefore needs to be accorded to improving accountability and transparency in the management and operations of the company. This should also include infusing enhanced corporate governance standards and lessening political interference.

5. Transport infrastructure

What processes are followed to make informed decisions on the development of new transport facilities, and to maintain existing investment in transport infrastructure? Are the requirements for all modes of transport regularly reviewed, taking into consideration investor needs and the links between different modes of transport infrastructure?

As a land-locked country, Zambia is heavily dependent on road, rail and air transportation systems for the movement of goods and persons. The reliability and efficiency of these transportation systems is therefore critical to national and regional development, especially in the facilitation of trade. Road and rail transport are traditionally the most widely used modes, although some inland and trans-boundary water transport systems are also in place.

Road transportation

The state of Zambia's roads is mixed. On the one hand, 83% of its paved road system is in good condition, which is much better than other resource-rich African countries. The core road network covers 40 113 km and its maintenance has however been a daunting challenge for the government. Moreover, there is evidence to suggest that about 65% of Zambia's roads are over-engineered, meaning they are paved in spite of low traffic volumes. This may suit the largely urban structure of Zambia's population (the country has a 50% urbanisation rate) but rural roads have been neglected, with only 21% in good or fair condition and only 17% of the rural population enjoying access to an all-season road. Moreover, with an unreliable rail network system, roads are the most common mode of transporting goods and persons.

Table 8.6. ZESCO performance against KPIs' January 2008 to June 2010

%

Indicator	2008					2009					2010	
	First quarter weighted score	Second quarter weighted score	Third quarter weighted Score	Fourth quarter weighted score	2008 weighted score	First quarter weighted score	Second quarter weighted score	Third quarter weighted Score	Fourth Quarter weighted score	2009 weighted score	First quarter weighted score	Second quarter weighted score
Customer metering	3	6	8	18	8.72	9	30	30	0	30	30	0
Cash management	10	0	0	0	0.00	0	0	0	0	0	3	10
Staff productivity	9	14	15	15	15.00	8	10	0	15	9	10	11
Quality of service	20	20	0	0	11.96	20	20	20	0	0	20	0
System losses	0	0	25	25	14.88	0	25	25	0	7	25	4
TOTAL	41.63	40.37	47.87	58.16	50.55	37.46	85.35	75.40	15.00	45.56	87.73	24.52

Source: Energy Regulation Board, December 2010.

To rehabilitate and develop road infrastructure, the government launched the Road Sector Investment Programme (ROADSIP I) in 1997 to provide a framework for the mobilisation of both domestic and external resources required to meet road network investments. ROADSIP has received support from external donors who agreed to use it as a basket funding mechanism for their contributions. In addition, the government introduced a Fuel levy whereby 3% of the price paid by consumers was earmarked for transfer to ROADSIP.

As a result of these efforts, Zambia has enough resources for the maintenance and rehabilitation of its roads and indeed, spends much more (3% of its GDP) than other countries in the region like South Africa and Namibia. In 2004, the government established the National Road Fund Agency (NRFA) which is responsible for the collection and management of ROADSIP funds. Around the same time, the government also established the Road Development Agency (RDA) to spearhead the implementation of ROADSIP. Under this arrangement, local authorities no longer have direct responsibility for mobilising resources and carrying out road works in their jurisdiction, including township roads. In addition, the Roads Department of the Ministry of Works was disbanded and its role taken over by the RDA. All road works are now undertaken by the private sector contracted by the RDA across the whole country. Local authorities can only be sub-contracted by the RDA to provide supervisory services.

In 2005, the government, together with co-operating partners started developing the ROADSIP II which enhances its precursor by including a more elaborate programme of bankable road projects. By the end of 2010, about 6 600 km of road networks had been rehabilitated (i.e. about 16.5% of Zambia's total road network). Amongst the major challenges faced in the implementation of road rehabilitation and expansion projects has been that project co-ordination is centralised in the RDA, which is based in Lusaka. However, the RDA has too wide a span of responsibility over the country's road networks. Presently the capacities of the RDA are stretched and mired in contract administration. The ideal situation would be to allocate major trunk road networks to the RDA, and to allow local authorities to take direct responsibility for district and township road networks.

In 2010, senior management of the RDA and the NRFA were dismissed and the Boards of the two agencies dissolved by the government, in response to the Auditor General's report that highlighted gross mismanagement of contracts and abuse of resources. New boards have since been appointed together with senior management of the two agencies. Additionally, measures are being undertaken to enhance inter-agency co-ordination and implementation of more rigorous internal audit, procurement, financial management and road-works monitoring systems.

Development of regional trade facilitation corridors

As a land-locked country, Zambia places importance on the development of transport corridors linking the country to the sea ports of Eastern and Southern Africa. The North-South Corridor, together with its adjacent spurs, services a number of countries, with Zambia as the central “hub”. For example, the Southern side of the Corridor links the Copperbelt to the Southern ports in South Africa, and also interconnects with the Trans-Kalahari linking to Botswana and Walvis Bay port in Namibia. It also interconnects through Zimbabwe to the ports of Beira and Lobito in Mozambique. On the Northern side, it interconnects to the port of Dar-es-Salaam in Tanzania and Katanga in the DRC, which is also a major regional market for Zambia.

In this regard, Zambia has been working closely with regional governments and international co-operating partners in order to address development and investment needs of priority regional corridors and to improve border transit systems so as to facilitate trade and commerce. Much of the collaboration has been in the development of road and rail transport corridors, transboundary electricity inter-connections, and One-Stop Border Posts (OSBPs). For example, works to build the Kazungula Bridge over the Zambezi River linking Zambia to Botswana are due to start soon, together with the implementation of the Nacala Development Corridor agreement signed between Malawi and Mozambique in 2003.

In addition, Zambia hosted the North-South Corridor – International Financing Conference held from 6th to 7th April 2009 in Lusaka. This was showcased as an example of an “Aid for Trade” development initiative, linking infrastructure to trade programmes. This conference, attended by the member states and Secretariats of COMESA, EAC and SADC, and the International Community, achieved the following results, among others:

- i) generation of strong financial and technical support for the North South Corridor whereby about USD 1.2 billion of funding was committed by development partners for upgrading road, rail, ports and energy infrastructure and to support implementation of trade facilitation instruments;
- ii) emphasis on the need to develop similar Aid for Trade programmes in respect to other priority regional transport and transit corridors, notably improving: the Central Corridor from the Port of Dar es Salaam in Tanzania to Rwanda and Burundi; the Northern corridor from Mombasa in Kenya to Uganda, Rwanda, Burundi and DRC; and the Lamu – Southern Sudan – Ethiopia Corridor;
- iii) identification of the need for Member States to show greater commitment to the identified projects and programmes by both providing counterpart

funding and implementing and harmonising supporting policies and regulations, so as to trigger additional and sustained funding from development partners; and,

- iv) underscoring of the need to put in place an institutional arrangement to programme and manage the North South Corridor Pilot Model for Trade Programme; put in place a mechanism to access and disburse the committed funds; identify funding gaps; propose a sequence of implementation; prepare bankable projects; and seek ways in which the private sector can come on board and complement public sector investment and financing for implementation of infrastructure projects.

The government has also endeavoured to introduce relevant legislation in order to harmonise the road traffic and safety standards in conformity with regional and international protocols. The aim is to improve the efficiency of road transport and transit systems. Particular attention is given to the harmonisation of transit charges and of axle load control. Zambia is also part of regional efforts to simplify border crossing and checkpoints for transportation, and to establish adjacent border posts to reduce the waiting time for truck drivers and transit formalities. The One Stop Border Post concept has been adopted and implemented at Chirundu Border Post between Zambia and Zimbabwe and similar structures are already being constructed at Kasumbalesa border with the DRC and at Nakonde, the main road border post with Tanzania. This will help to assuage traffic jams and long delays at the Chirundu border.

Railway transport networks

Presently, Zambia has two main railway networks, the Tanzania-Zambia Railways (TAZARA) jointly managed by the two countries, and Zambia Railways managed under concession by Railway Systems of Zambia (RSZ), a private operator. TAZARA links Zambia from Kapiri Mposhi (located about 200kms from Lusaka towards the Copperbelt) and the Port of Dar-es-Salaam in Tanzania. Zambia Railways links Zambia to the DRC and Angola in the North, and Zimbabwe/South Africa in the South. In 2010, the Chipata-Mchinji rail line was inaugurated, a joint venture of the governments of Zambia and Malawi. The Chipata-Mchinji rail line, which is about 30 km long, is intended to pass through Malawi and to provide the shortest sea route link from Zambia's Eastern Province to the ports of Beira and Nacala in Mozambique.

The government has been concerned with the increased use of road transport networks for moving bulk commodities, such as copper, fuel, coal and cement, which is accelerating the degradation of road infrastructure. As part of the privatisation policy, the management and operations of the Zambia Railways network were concessioned to Railway Systems of Zambia (RSZ) in

early 2003, a South African consortium comprising New Limpopo Project Investments and Spoornet. The objectives of the concession (which is for a period of 20 years) was to allow the private sector to inject capital and modern railway transport management systems in order to improve the competitiveness of this mode of transportation, especially as the bulk of Zambian imports and exports use Southern African ports. However, traffic volumes are currently quite low, and this has for now made revenue-collection challenging, especially for maintenance; this may pose additional challenges for the profitability of the concession.

The government recently approved an initiative by Zambian members of the private sector to construct a 220 km rail line linking the Copperbelt to North-Western province with possible expansion to Angola. North-Western province has become an important investment hub for large new copper and uranium mines being developed, and Lumwana will for instance be Africa's largest copper mine once fully operational.

Zambia's railway transport systems are both inadequate and unreliable, forcing the business sector to use more costly road and air transportation. This also contributes to congestion at borders and degradation of trunk road networks. This moreover makes Zambia uncompetitive through the high costs of moving goods by road and air. This problem extends beyond poor physical infrastructure systems, and includes discriminatory tariff-setting policies such as for exports from the DRC, which are charged USD 2.00 per tonne-km compared to the normal USD 0.05. As a result, exporters choose to transport their goods by road rather than by rail. As for TAZARA, the governments of Zambia and Tanzania are exploring opportunities of establishing a joint venture with private investors in order to recapitalise the network and take over its management. A Parliamentary inquiry was also recently carried out to establish the benefits of granting a concession of Zambia railways to RSZ, as the expected improvements in efficiency and reliability, as well as in terms of rapidly recapitalising the network's operating infrastructure, are yet to be achieved.

Among the contributory factors to the concessioning arrangement has been the lack of an appropriate regulatory framework that would address operational standards, safety, and the rigorous enforcement of investments into rehabilitation and expansion of track and rolling stock, which should be undertaken by RSZ. This is exacerbated by lack of enforcement capabilities on the part of Zambia Railways Limited, which is tasked with monitoring the operations and overall performance of the concession company. For example, Zambia Railways Limited can only act through the Ministry of Communications and Transport when trying to obtain the co-operation of RSZ. On the other hand, RSZ is able to deal directly with government over issues for which it should be accountable to Zambia Railways Limited, and

uses this to leverage decisions and special dispensations outside of the full framework and spirit of the concession agreement and its objectives.

Air transport systems

In December 1995, the government liquidated the national carrier Zambia Airways, and since then air transportation services have been left to the private sector. The government has instead operated an “open sky” policy and focused on the establishment of a regulatory framework to encourage private investment and the rehabilitation and expansion of airport infrastructure. As part of the improvement of infrastructure, a major programme of rehabilitating and expanding airport buildings and runways is being implemented across the country. This has included the reclassification of Livingstone Airport into an international airport with a longer runway (extended from 2.3 km to 3 km) in order to facilitate the landing of large aircraft into the tourism capital of Zambia.

Since the government divested from directly running the national airline, a number of private operators have attempted to establish and operate airlines. Several have however collapsed mid-stream, largely due to the high cost of fuel. Zambia’s aviation fuel costs are the highest in the region and discourage investment in airlines whilst also increasing the cost of goods transported by air. Indeed, the problem reached such an unsustainable level that the flag carrier, Zambian Airways, suspended operations at the beginning of 2009. In response to the expansion of trade and investment, a number of foreign airlines are nonetheless increasing the frequency of their flights into Zambia, thereby providing reliable access and linkages with regional international markets.

6. Enhancing water supply to meet development goals

Has the government evaluated the investment needs in water required to support its development goals? To what extent is the private sector involved in water management, supply and infrastructure financing?

Zambia has abundant water resources, covering 8 700 m³ per capita per year, which is higher than the Sub-Saharan African average of 7 000 m³ per capita per year. Water resources comprise lakes (*e.g.* Kariba, Tanganyika, Mweru and Bangweulu) as well as a number of rivers (*e.g.* Kafue, Zambezi, Chambeshi and Lungwa rivers). Zambia’s water courses account for about 60% of water resources in the SADC region. Access to reliable and safe water supplies is, however, a major challenge. Rapid urbanisation and demand from

industries, especially mining and manufacturing, have stretched supply capacities. The situation is exacerbated by low investment in water and sanitation supply systems. For example, daily demand for water in Lusaka is around 350 000 m³ whilst production by the Lusaka Water and Sanitation Company (LWSC) is about 240 000 m³ per day, leaving a supply deficit of about 31%.

Industries and more affluent households are forced to invest in sinking bore holes in order to guarantee adequate and reliable water supply for their needs. However, this practice is putting pressure on the underground water that supply companies can harvest for distribution to the population and industries. Most bore holes are sunk without assessment and planning permission, resulting in the degradation of underground water quality.

Assessment of water supply needs

An assessment to determine the demand for water in various sectors was carried out between 1992 and 1995 and showed that total water demand was 40km cubed; about 36 km³ per year or an average of 1150 m³/s is used for hydropower generation. Out of the remaining 3 km³/year, agriculture uses about 3.31 km³, industry 0.21 km³, and households 0.48 km³. According to more recent estimates made by the Ministry of Energy and Water Development (MEWD), national access to safe and reliable water supply is presently at 60.1%.

As for water resources for agriculture, a total of 55 projects have been selected and categorized as short, medium or long term at an estimated cost of USD 3 649.04 million. However, no comprehensive study has been conducted to date to evaluate the water needs of the sub sector. It is clear that Zambia is not using its water resources to their full potential – only 27% of its 6 000 MW hydropower potential has been tapped, for instance. Moreover, only 3% of agricultural land is under irrigation although there is enormous potential, especially in the Copperbelt area and around Lake Kariba.

Responding to challenges of securing adequate supplies of reliable and safe water

In response to these challenges, the government has set improving access to reliable and safe water supply, regarded as both a social and economic good, as one of its priorities. As such, water supply should be developed and managed in a manner that both provides economic benefits, and promotes human dignity and the social well being of all citizens. The government has also recognised that water and sanitation are critical factors to the alleviation of poverty and hunger, the promotion of sustainable development, and to environmental integrity and human health.

In this aim, the government has committed itself to meeting the MDG target of increasing access to adequate, safe and cost effective water supply to 80% of the population by 2015, and 100% by the year 2030. In the case of the commercial sector, the government has also committed itself to facilitating adequate supplies that match current and future requirements, considered as a critical contribution to the establishment of an enabling environment for investment and growth of the economy.

In order to achieve these objectives, the government has adopted principles of Integrated Water Resources Management (IWRM) that take into account competing demands and uses of water resources. In this regard, a National Water Policy was approved and launched in February 2010. Its overall objective is to promote sustainable water resources management and development in order to facilitate equitable provision of adequate quantities and quality of water, both for water supply and for sanitation. This was an important milestone in the water sector, as the policy embraces modern principles of water resource management.

The policy has further provided a platform for the implementation of the Water Resource Management (WRM) Bill, which repealed the Water Act of 1949. Once enacted, the new WRM Bill will provide for the equitable utilization of water resources, as well as for sustainable protection, preservation, conservation, management and development of the resource and its ecosystems. The Bill will specifically address:

- controlling indiscriminate drilling of bore holes;
- developing sustainable practices in the management and exploitation of the country's water resources so as to avoid degrading ground water; and,
- strengthening regulatory provisions used to penalise industries and households polluting or vandalising water supplies.

The current Water Act (1949) does not provide for the management of transboundary water resources. This has made it difficult for Zambia to effectively address challenges related to this important resource. The new Bill, once in place, will therefore allow for an integrated approach in dealing with management of water resources, as well as with climate change.

Current framework for water management and supply

Until the mid-1990s, water supply and sanitation services were mainly provided directly by central government through the Ministry of Works and Supply and local authorities (i.e. Councils). The principle law governing water supply and sanitation service provision in Zambia is the Water Supply and Sanitation Act No. 28 of 1997. This Act mainly deals with the regulation of the service provision and provides for powers of service providers. It also provides

for the establishment of an autonomous Regulator, the National Water Supply and Sanitation Council (NWASCO), which operates as a statutory body.

The Water Supply and Sanitation Act mandates NWASCO to regulate water and sanitation providers for efficiency, reliability and cost effectiveness of their services. Amongst the main areas of concern being addressed by NWASCO is water pollution, especially from mining activities which are affecting the quantity and quality of urban water supply. This is also posing a danger to health and increasing water treatment costs faced by service providers. In addition, NWASCO is concerned with the strategies applied by service providers in addressing “unaccounted” water losses resulting from vandalism and poor maintenance as this is lowering supply whilst increasing production costs. Currently, distribution losses by utilities are 45% of total water supply, while only 65% of total costs are recovered. Indeed, total losses stand at 236% of all current sector revenues. These inefficiencies are a major drawback to service provision and indeed undercut the financial resources of utilities.

The Water Supply and Sanitation Act also delegates and mandates the local authorities to provide water and sanitation services in their respective areas. There are currently two types of Water Supply and Sewerage service providers in Zambia, which are Commercial Utilities (formed by joint ventures among Local Authorities) and Private Schemes (companies supplying water and sewerage services as a fringe benefit to employees). Urban water supply and sanitation service provision has also been fully transferred from local authorities to commercial utilities with the aim of increasing efficiency and sustainability in operations. For the rural districts that are not served by commercial utilities, the Ministry of Works and Supply has continued to provide this service.

All 72 local authorities have established commercial water utilities (either as joint ventures or single entities) to provide water and sanitation services. There are presently 11 Commercial Utilities and seven Private Schemes currently licensed by NWASCO to provide water supply and sanitation services. All these institutions are by law required to obtain an operating licence from NWASCO which also monitors and regulates their activities. Out of the total urban population of about 5.4 million, 99% (or about 5.3 million) live in the service areas of the eleven commercial utilities. Each province has one Commercial Utility except for the Copperbelt Province where there are three such providers, as indicated below.

Through these interventions, water supply in urban areas increased from 45% in 2002 to 74% in 2010. On the other hand, sanitation coverage only increased from 28% in 2004 to 34% by 2010. Meeting the growing demand for adequate, reliable and safe water and sanitation services, especially in the

Table 8.7. **Water and sanitation utilities in Zambia**

Name of utility	Province	Year started	No. of towns covered
Nkana Water and Sewerage Company	Copperbelt	2000	3
Lusaka Water and Sewerage Company	Lusaka	1989	3
Kafubu Water and Sewerage Company	Copperbelt	2000	3
Southern Water and Sewerage Company	Southern	2000	17
Mulonga Water and Sewerage Company	Copperbelt	2000	3
Chambeshi Water and Sewerage Compagny	Northern	2003	12
Eastern Water and Sewerage Company	Eastern	2009	8
North Western Water and Sewerage Company	North-Western	2000	7
Western Water and Sewerage Company	Western	2000	6
Lukanga Water and Sewerage Company	Central	2007	6
Luapula Water and Sewerage Company	Luapula	2009	7
Total number of towns served			75

urban areas, still remains a major challenge for the government given the investments required compared to the limited resources.

In addition, commercial utilities face serious liquidity challenges largely attributed to their inability to enforce the collection of payments for services provided to public institutions. In the case of defaulting private consumers, utility companies are able to disconnect service until all arrears have been settled. The government however frowns upon any attempt to disconnect supplies for public institutions, and may even issue directives countermanning such actions. This has also led to the substantial undercapitalisation of utility companies as they cannot mobilise adequate resources to sustain existing supply systems or invest in the rehabilitation and expansion of infrastructure. This has also contributed to the increasing costs of water and sanitation services faced by private consumers, as the utility companies attempt to mitigate unreliable payment streams due from the public institutions.

Financing for water and sanitation

Infrastructure funding to the sector has been a major concern despite the sector policies in place to facilitate infrastructure development. Another major challenge is that the legal and institutional frameworks are weak or inadequate and do not encourage private investment, especially as the government, which is the major consumer of water and sanitation services, can default in settling bills at will. There are also growing imbalances between investments taking place in the development and management of water resources in the urban compared to the rural areas, largely due to the fact that

urban areas have larger numbers of private consumers that pay for services. By contrast, rural areas are dominated by public institutions that are able to access piped water, and the economic returns of expanding supply infrastructure into villages are generally negative.

The government has however acknowledged the need to address the undercapitalisation of commercial utilities by strengthening public management and financial accountability amongst the Ministries and Spending Agencies. In addition, the government has put in place a deliberate public investment policy for the water and sanitation sector so as to increase funding and address deficits in infrastructure development.

Amongst the measures taken to address water and sanitation financing, the government issued a Statutory Instrument (SI) under the Water Supply and Sanitation Act (SI No. 65 of 2001), enabling NAWASCO to establish the Devolution Trust Fund (DTF), as a basket funding instrument. The DTF, which became operational in September 2003, is a non-profit making body but aims to accelerate the mobilisation of investment funds for projects to meet the growing needs for water and sanitation services by both the urban and rural population. It also promotes technology, offers the best in terms of quality of service to cost ratio, is commercially viable and is able to service a high number of the poorer members of society in both urban and rural areas.

Since its establishment, the DTF has so far mobilized ZMK 92.2 billion from the government and external partners (i.e. European Union, DANIDA and KfW of Germany). In addition, the government obtained a loan from the African Development Fund for the Rural Water Supply and Sanitation Project to provide adequate and sustainable water supply and sanitation projects and services in five Districts of Central Province, namely: Chibombo, Mumbwa, Kapiri Mposhi and Serenje.

Out of the total amount mobilized by the DTF, ZMK 75.4 billion had been disbursed by 2009 for rural and peri-urban water- supply projects. By 2010, the DTF had financed 67 water projects, benefiting a population of about 836 000 in peri-urban communities in Lusaka, Eastern, Southern, Northern and North-Western provinces.

References

- Assessment of ZESCO Against Key Performance Indicators, Energy Regulation Board, March 2011.
- Government of Zambia (1997), *Water Supply and Sanitation Act*, Number 28, Lusaka.
- Government of Zambia (1998), Ministry of Energy and Water Development, *Framework and Package of Incentives for Private Sector Participation in Hydropower Generation and Transmission Development*, Lusaka.

Government of Zambia (2008), Ministry of Finance and National Planning, *National Public-Private Partnership Policy*, Lusaka.

Government of Zambia (2010), Ministry of Finance and National Planning, *Public-Private Partnership's: Key Definitions and Projects*, Lusaka.

Government of Zambia (2011), Ministry of Finance and National Planning, *Sixth National Development Plan: 2011-2015*, Lusaka.

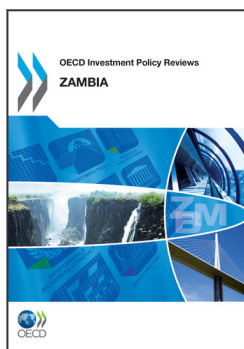
Government of Zambia (2011), *Budget Address 2011*, Delivered to the National Assembly by the Minister of Finance and National Planning, Lusaka.

Government of Zambia (2008), *Public Procurement Act*, Number 12, Lusaka.

Shuller Habeenzu (2010), *Zambia ICT Sector Performance Review 2009/2010*, Research 101 Africa. Vet.

World Bank (2007), *Corporate Governance of State-Owned Enterprises in Zambia*, Washington, DC.

Zambia Business Survey (2010), *Profile and Productivity of Zambian Business*, Lusaka.



From:
OECD Investment Policy Reviews: Zambia 2012

Access the complete publication at:
<https://doi.org/10.1787/9789264169050-en>

Please cite this chapter as:

OECD (2012), "Infrastructure Development", in *OECD Investment Policy Reviews: Zambia 2012*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264169050-12-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.