

## Malawi Infrastructure Sector Overview

### 1.1 Economic Opportunity and infrastructure

Malawi's biggest economic challenge is to diversify its economy and move to export led growth, improving its foreign exchange reserves and allowing for more public investment, including additional infrastructure. There are frequent and lengthy electricity shortages due to weak capacity, big issues for households and businesses. Generation of power is increasing but distribution is not keeping pace with needs. CEAR has made little investment to upgrade or even repair, especially the two important rail links from Njingi to Nkaya and Blantyre to the Sena line in Mozambique. There is a dependence on drought vulnerable hydroelectricity generation, increasing operating costs for firms, farmers and households. Inadequate coverage of irrigation (less than 3% as of 2015) is reducing the opportunities to move to a commercially based agricultural production. Alternatives to engineered irrigation, such as water harvesting and on-farm practices supplemented by small-scale irrigation structures, are insufficiently used. Malawi must become a 'land-linked country' rather than landlocked. Land-linked means making sure Malawi has access to the international gateways through adequate infrastructure. Weak telecommunication infrastructure increases business costs, limits domestic and international trade and reduces access to finance (hindering mobile banking).

The following opportunities are key to promoting inclusive growth:

- Growth and job creation:** Agriculture accounts for 54% of GDP and 85% of employment Lack of water harvesting and irrigation for medium to large scale farmers. Government is focusing on commercialisation, mechanisation, water harvesting and development and large scale irrigation targeting medium to large scale farmers. Roads are not well maintained especially secondary roads, limiting farmer access to markets. The Banking industry in Malawi is also not well developed. Most payments are in cash and access to credit is limited and expensive. This is clearly a constraint for trade operations and a source of major delays. For instance, customs brokers usually pay duties in cash at border posts. You have forgotten mining especially with the fairly new geophysical survey published with huge prospects for rare earth elements. The mining industry needs reliable power, strong regulatory framework and of course adequate transport infra. BUT the opportunities are there.
- Inclusion and poverty reduction:** Between 2004 and 2010, poverty in rural areas (where most Malawians live) increased slightly from 56% to 57%. Extreme poverty increased at a greater rate from 24% to 28%. More recently, poverty likely has increased further, given the large-scale floods of 2015 and the major drought of 2016, which also had a major impact on growth.
- Investment in infrastructure:** During the mid-2000s, Malawi's infrastructure spending was close to \$200m per year (6% of GDP). About half of that spending was in the transport sector. Because of widespread inefficiencies in several infrastructure sectors, an additional \$200m is wasted. Key areas of inefficiency include under-pricing of power (worth \$72m a year), under maintenance of roads (\$32m) and utility distribution losses (\$21m). Even if those inefficiencies could be eliminated, Malawi would still face an infrastructure funding gap of almost \$300m a year but the situation would improve drastically.
- Climate and environmental resilience:** Experiencing electricity shortages due to weak capacity and dependence on drought vulnerable hydroelectricity generation. Inadequate water sourcing and management in urban areas creates shortages for households and poor coverage of engineered irrigation (less than 3% as of 2015) reduces farmers' productivity, leaving them vulnerable to more frequent weather shocks.
- DFID Comparative Advantage:** DFID is well placed to focus on "knowledge generation" and undertake strategic studies. An example of good practice is what TradeMark East Africa (TMEA) has done in the East Africa region, providing the appropriate knowledge for better investment in infrastructure. Funding studies in power (Gx, Tx and Dx) and/or transport and ICT would provide crucial knowledge to agencies and assist with improved investment decisions.

### 1.2 Stakeholder Analysis

This section sets out in short bullet points the relative engagement of key players in infrastructure.

Public sector	<ul style="list-style-type: none"> <li>In 2017, the government received \$80m in general budget support to strengthen policy and institutional reforms in agriculture and to enhance public financial management systems.</li> <li>Fiscal position has deteriorated and public debt to GDP ratio has risen. Increased debt service pressures have reduced space for needed infrastructure and social spending.</li> </ul>
Private sector	<ul style="list-style-type: none"> <li>Total investment committed to PPPs since 1990: \$6m (which is related to infrastructure).</li> </ul>
Donors	<ul style="list-style-type: none"> <li>The IFC in Malawi is focusing on agribusiness, banking, improving the business climate and advisory opportunities for public-private partnerships (PPPs) in infrastructure.</li> <li>The current World Bank portfolio comprises 16 projects with a total commitment of \$1.4bn. The key sectors addressed in the whole portfolio include: agriculture, education,</li> </ul>

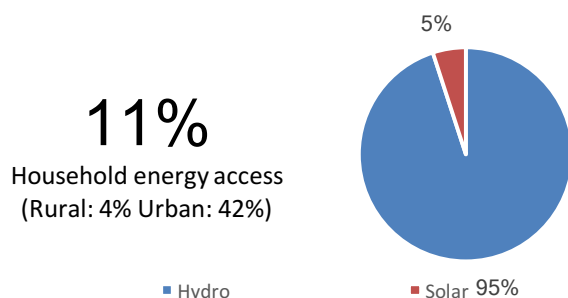
# 1. Sectoral analysis

## 2.1 Energy

### Overview

- Malawi's installed electricity-generating capacity is 363MW of which 93.3% is hydroelectric.
- With an electrification rate of only around 10%, Malawi has one of the most severely constrained power sectors in sub-Saharan Africa.
- While the vast majority of Malawi's power is hydro-based, efforts are underway to diversify generation sources
- Between now and 2020, the Malawi Government plans to add over 100 MW of power. Despite these efforts, a power shortfall remains projected for 2020.
- SAPP role in this? Once the interconnector with Mozambique is completed Malawi will be linked to SAPP.

### Energy Access for households and business



Currently 16.02m are unconnected and on average it makes up 3.28% of average household consumption.

### Energy Planning

- Total system capacity stands at just 351 MW, nearly 20% of which was added only in 2013 with the commissioning of the 64 MW Kapichira II hydropower project. This represents the first new generation supply in over 13 years.
- Peak demand presently exceeds supply by almost 100 MW, and demand forecasts by the Government of Malawi's Department of Energy indicate that this gap will grow significantly between now and 2030.

### Major investments planned

- 300MW Kammwamba Coal Fired plant being championed by Government of Malawi. Plans are to bring 10% of output on line by 2019 and 90% by 2020 with the final 100% by 2021.
- An additional 12 MW at the Nkula A hydropower plant as part of the MCC-funded rehabilitation.

## 2.2 Transport

### Overview

- The main road infrastructure (excluding secondary and rural roads) of Malawi is in fairly good condition. These main roads link Malawi to its neighbours. This is the result of active
- donors' support, notably that of the European Union. Unfortunately, the government has
- not been able to establish a sustainable maintenance policy.. Border Posts between Zambia and Malawi, Malawi and Mozambique have received funding from USAID and AFDB and they are being upgraded/ rehabilitated.
- Opportunities:
- The most populated region of Malawi, southern region, needs more investment in roads and dry ports to complement the investment in railways specifically by CEAR/Vale in the Nacala railway line to exploit the opportunities provided by the modernized Nacala railway corridor provided the line.

### Import / Export of goods

Top 5 Exports	% GDP	Top Destination
Raw Tobacco	10.1	Belgium-Luxembourg 21%
Gold	1.53	UAE - 100%
Raw Sugar	1.38	Tanzania - 22%
Tea	1.36	South Africa - 37%
Dried Legumes	0.92	India - 76%

### Major investments

CEAR/VALE on the northern railway link between Mchinji and Nkaya (>km350). AfDB is also considering investing funds. Once this railway link will be up and running it will open up the regional portion of the Nacala corridor (from Zambia to Mozambique) increasing the volume of trade moving through Malawi to approx. 5mtpa.

### Trade corridors

- Malawi relies predominantly on 3 transport corridors:
- (1) The North-South Corridor: the road to Durban (2300km);
  - (2) The Beira corridor (Malawi leg): the road to Beira (>km700); and
  - (3) The Nacala corridor: the road and railway to the port of Nacala in Mozambique, (800km).
- The road conditions on the aforementioned corridors is fairly good. Use of rail is limited to the Nacala corridor and recently CEAR has started to invest in the rehabilitation of the railway link between Zambia (at Chipata/Mchinji) and the Vale Nacala line cutting across Malawi to the port of Nacala Mozambique.
  - The railway link to the Sena Line through the Southern Region of Malawi has not been rehabilitated yet as costs are prohibitive (in excess of \$700m)

- Malawian traders pay high transportation costs for imports and exports. Minimal transport charges to Blantyre are \$90/ton from Johannesburg, \$45/tons from Beira or \$60-70/ton from Nacala. Charges are largely high due to the length of the route and the high unit costs of transportation which are due to the difficulty in organising back-loads from Malawi (volume imbalance between imports and exports). However unit costs of transport for imports compared favourably to those supported by other landlocked countries in Africa.
- The unit costs are higher for transportation inside Malawi because of the shorter distances and the underutilization of the fleet resulting from the unavailability of back loads and seasonal flows. As a comparison, unit costs inside Malawi are at least twice as high as in South Africa (6 cents tons per km vs. 3 cents).
- Doing business rating: 110/190
- Average time to clear customs: 9.9 days

**National Transport Master Plan (2017-2037):**  
[http://www.malawi.gov.mw/images/Publications/NTMP\\_Final\\_Documents/Final\\_Report/NTMP\\_Final\\_Report.pdf](http://www.malawi.gov.mw/images/Publications/NTMP_Final_Documents/Final_Report/NTMP_Final_Report.pdf)

### 2.3 Digital connectivity

#### Overview

- The telecommunications sector is fast-growing but underdeveloped. Telephone penetration rates in Malawi are the lowest in the Southern African Development Community (SADC) region.
- Mobile phone penetration in Malawi is 38%.
- Existing mobile phone companies have a combined customer base of about 5 million within a population of over 17 million. The service offered is at times not reliable, with many dropped calls and daily congestion.
- Call rates are one of the highest in the region. The Gov plans to increase the number of operators to bring efficiency to the sector.

#### Digital access

% of individuals using the internet		11.47%
Internet Bandwidth per user	Bits per sec	30.34
	Rank (/170)	148/170
E-Government Score	GSMA index	21.74
	Rank (/170)	141/170

#### Planned Investments / Initiatives

World Bank provided Malawi's government with a \$72.4m loan to help build the digital foundations needed to help the country connect to the global digital economy.

#### Digital service accessibility

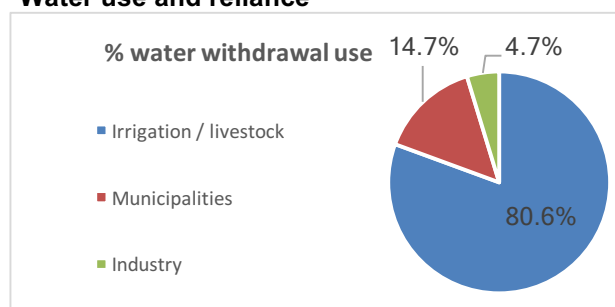
2G Network Coverage	% pop	77.78
	Rank (/170)	118
3G Network Coverage	% pop	22.04
	Rank (/170)	169/170
4G Network Coverage	% pop	14.93
	Rank (/170)	138/170
Cost of entry level basket (100 MB)	Rank (/170)	158
# of Mobile apps in national language	# apps	4
	Rank (/170)	167/170
Mobile phone subscriptions per 100 people		41.74

### 2.4 Water and Sanitation

#### Overview

- Development of irrigated agriculture is supported by several institutions including the Ministry of Agriculture and Irrigation (MAI), the Ministry of Water Development (MWD), the Department of Environmental Affairs, the Water Resources Board, the Department of National Parks and Wildlife, the Department of Forestry and training institutions.
- 10 million people do not have a decent toilet to use.
- 80% of WASH funding comes from donors. Allocation for WASH in the national budget has been meagre, at 0.08% of the total budget in 2014/15.
- The funding focus is so much on water infrastructure development, with no dedicated budget line for sanitation and hygiene interventions.

#### Water use and reliance



#### Agricultural water use

- Primary crops; maize, which accounts for nearly 90 percent of the cultivated land, supplemented by sorghum, millet, pulses, rice, root crops, vegetables and fruits; 54% of GDP; mainly rain-fed
- 85% pop deriving livelihoods from agriculture
- 83.3% population rural and 56.6% rural poor
- 61.41% agricultural land / under cultivation

#### Water resource availability

Improved water resource access	90.2%
Proportion of total actual renewable freshwater resources withdrawn: MDG Water Indicator (Aquastat)	7.9%
% water received from neighbouring countries	Considered relatively rich in water resources

**Infrastructure condition and investment**

- There are no clear and coordinated plans for financing the Sector Investment Plan and the National Sanitation Master Plan.
- At least 25% of water facilities are not functional at any given point in time. Rural councils are poorly financed to support operation and maintenance of water facilities.
- Lilongwe Water and Sanitation Project: \$102m

**Transboundary dependencies**

Water resources such as Lake Malawi, Lake Chilwa, Lake Chiuta and Shire, Ruo and Songwe Rivers are shared with the neighbouring countries of Mozambique and Tanzania as transboundary and cross-boundary waters. So far, no major conflicts have arisen over the utilization of these resources. However, in order to avoid potential conflicts, Malawi is signatory to a number of international treaties and conventions, including the SADC Protocol on Shared Watercourses and the 1997 UN convention of non-navigational uses of international waters.

**Climate-induced vulnerability**

Drought and flood events have increased in frequency, intensity, and magnitude with negative consequences for food and water security, predominantly impacting rural people. Following flooding in 2015, recovery efforts include rehabilitation of various sectors including infrastructure and transport, water and agriculture.

**2.5 Urban Infrastructure****Overview**

- Blantyre city produces 300t of waste per day, of which only 28% is collected by the municipality.
- City residents and companies illegally dump waste in inappropriate places or burn them, thus potentially creating harmful smoke.
- Deficits in utility supply, mainly to water and electricity, which currently undermine economic productivity.

**Urban Structure**

% urbanised	17%
# urban residents	3.06m
% living in informal settlements	66.7%
Urban poverty (%)	17.3
Urban employment (%)	
- Total	94.1% [national]
- Youth	50%
- Female	93% [national]

City size	# Cities	% Nat pop.	Tot pop.
Over 1m	1	6.44	1,161,400
500k-1m	3	12.77	2,292,604
100-500k	4	3.52	633,182

**Urban infrastructure overview**

Energy	% household access	42%
	Power reliability (per month)	6.7
Water	% access to improved water	90.2
	% household spend water utility	0.82%
	Cost of most recent flood event	\$51m
Urban transit	% household spend transport	4.66%
	Air pollution deaths in cities	600

**Donor engagement in cities**

- Lilongwe Water and Sanitation Project: \$102m

**3.0 Ongoing X-HMG Engagement**

Dpt / Org	Initiative	£ value
BEIS	Pilot Programme for Climate Resilience	225m
	Renewable Energy Performance Platform	48m
DFID	Africa Clean Energy Programme (ACE)	28.3m
	Community Led Infrastructure Finance Facility (CLIFF) Phase 2B	25m
	Transboundary Water Management in Southern Africa: Climate Resilient Infrastructure Development Facility	20m
	SHARE - Sanitation and Hygiene Research Programme	16m
	Transboundary Water Management in Southern Africa: Capacity building to better manage shared water resources in the South African Development Community (SADC)	9.4m
World Bank	Malawi: Shire River Basin Management Program (Phase-I) Project	125m
AFDB	Sustainable Rural Water and Sanitation Infrastructure for Improved and health and livelihoods	25.6m
	Malawi: Mzuzu-Nkhatabay road rehabilitation project	23m