



## CONCEPT NOTE

### Structural Infrastructure

The NDP 2017-2021, which was the first instrument to mobilise “Vision 2030, The Chad we want”, places importance on basic infrastructure for a structural transformation of the Chadian economy. These infrastructures will be designed to support the agro-sylvo-pastoral sectors promoted within the growth centres. These infrastructures will concern the transport, Information and Communications Technology (ICT) and energy sectors. The development and revitalisation of these infrastructures are necessary conditions for improving the competitiveness of the national economy. Moreover, innovations in the agro-sylvo-pastoral sectors will be backed by ICT in order to increase productivity in these sectors and enhance their resilience to climate shocks.

#### Background

The diversification of the Chadian economy, a major focus of the NDP 2017-2021, depends on the country's domestic and external openness, inclusive accessibility to ICT services and energy coverage.

A continental country covering 1,284,000 km<sup>2</sup> situated in the heart of Africa, Chad is doubly landlocked (internally and externally) and transport infrastructure is relatively undeveloped. The road network remains underdeveloped in relation to the size and needs of the country. Moreover, the network of rural roads, which is essential for facilitating the access of food products to the regional markets and N'Djamena, is restricted. Yet, the diversification of the Chadian economy depends on the integration of the rural economy into the market system. The lack of rail links remains a major obstacle to the smooth transportation of both domestic and imported products. As a result, domestic and international transport costs linking Chad to its main maritime outlets are among the highest in the world. The major challenges are thus to ensure links with the main international corridors accessible to the country (Cameroon, Nigeria and Sudan) and to extend the internal network in order to link the different growth centres between them. River and lake navigation is neither well structured nor organised. River and lake transport is left to the discretion of the informal sector operating during high-water periods (late July to mid-November). As regards the aviation sector, the airport network has six airports and 47 aerodromes open to traffic.

As regards ICT, Chad was ranked among the worst 10 countries in the world (142nd) in July 2015, according to the International Telecommunication Union (ITU) ICT Development Index (IDI). In 1999, the number of subscribers to the network of fixed telephone lines across the country reached 12,000, i.e. a telephone penetration rate of 10% and the rate of access to the internet was 2%. The low rate of access to electricity in urban areas (4.3% in 2015), its very low territorial coverage coupled with its excessive cost (125 CFAF/KWh) also restrict internet access. Like many developing countries, Chad plans to rely on ICT innovations to integrate the rural economy into the market system and enhance the resilience of the economy to climate shocks. National energy coverage must be considered a major factor in industrial development policy, productivity of factors of production and economic competitiveness. Indeed, the rate of access to electricity was estimated at 6.4% of the population in 2015, one of the lowest on the continent. The level of electricity supply is low and its selling price remains among the most expensive in the world, despite being subsidised by the State.



The energy development policy must be implemented to ensure the interconnection of the national territory in order to improve the coverage of the population's energy and the development of productive activities and services.

Priority will be given to the energy coverage of growth centres in order to improve the productivity and competitiveness of the agro-sylvo-pastoral sectors. It is also a question of taking up the gauntlet of the promotion of renewable and environmentally friendly energy to serve as a catalyst for the strategy of strengthening the productive base through the agricultural, livestock and fisheries sectors.

Oil exploitation and the multi-faceted commitment of the country's partners are opportunities to pursue efforts to improve access to Chad, and to provide access to energy and ICT services.

### **Measures already taken by the Government**

As part of the implementation of the first two generations of the National Poverty Reduction Strategy (SNRP1 2003-2007 and SNRP2 2008-2011), the National Transport Scheme (NTS) and the National Development Plan 2013-2015, significant progress has been made in the field of transport. Indeed, the length of national paved roads increased from 346 km in 2000 to 2,227 km in 2015, an increase of 543.6% over the period. The length of rehabilitated rural roads increased from 2,130 km in 2001 to 5,125 km in 2015 and the number of permanent network roads accessible all year round from 20% in 2001 to 91.6% in 2015.

These efforts have led to an increase in domestic traffic (a 59% increase between 2009 and 2012). Some of the country's major economic cities (Moundou, Abéché and Sarh) are now connected to the capital by a tarmac road network. The number of airports and aerodromes has significantly increased in recent years and Hassan Djamous International Airport in N'Djaména was brought in line with international standards in 2016.

Institutional reform in the ICT sector, leading to the liberalisation of the mobile phone sector in 2000, has significantly increased its penetration rate. This rate rose from 0.07% in 2000 to 39.76% in 2014. The number of telephony subscribers increased from 1.6 million in 2008 to 5.3 million in 2014. Mobile telephony is being used more and more as a financial instrument through mobile banking. The internet access rate increased from 5.5% in 2013 to 9.6% in 2015. This significant growth is explained by the granting of 3G and 4G licences to mobile operators. With regard to the ICT sector's contribution to the economy, the turnover of the entire electronic communications sector amounted to CFAF 178 billion in 2014. One thousand one hundred and seventeen jobs were created that same year by the sector, 905 of which were filled by men compared with 212 by women. Finally, in 2013, almost CFAF 37.09 billion in government taxes and fees was reported by the mobile telephony sector. Many taxes are now collected by the State through mobile telephony services.

The initiatives carried out in the transport and ICT sectors have also been carried out in the energy sector. In the context of capacity-building related to the production, transmission and distribution of electricity, the State has made significant investments in the construction and rehabilitation of electricity infrastructures, increasing the supply of electricity and strengthening Chad's National Utility Company SNE's production capacities, increased plant maintenance and the extension of power grids. In terms of production, the available power in N'Djaména is 142.2 MW. It should be added that the four sub-stations (Garangosso, Djambalbar, Gassi and Lamadji) are connected to the 90 KV loop so that shortly the entire city of N'Djaména will be connected to the network. A project by Glencore to supply the town of Moundou from the Mangara oil field is under way. This project will enable the town of Moundou to be powered with 2 units of 2 MW and a gas power plant.



The same applies to projects for powering cities and secondary centres by means of photovoltaic power plants managed and operated by the International Renewable Energy Agency (IRENA).

In terms of access costs, the latest revision resulted in a reduction of about 37% in tariffs and a reduction in the two-tier rate structure. For domestic use (low voltage), the kilowatt hour (kWh) is CFAF 85 for the first tranche (0 to 150 kWh) and CFAF 125 for the second tranche. For other types of consumption, there is a single tranche invoiced at CFAF 125 per kWh.

## Strategic Guidelines

In terms of transport, the NDP 2017-2021 maintains the following strategic guideline: “to develop the basic physical infrastructures necessary for the production, processing, distribution and marketing of market goods and services”. These basic economic infrastructures will mainly serve the growth centres.

Key figures for the infrastructure sector in Chad	
<b>Transport sector</b>	
Number of km of paved national roads	2,227 km (2015)
Rate of increase of km of tarred national roads	21,10% (2012-2015)
Number of km of rehabilitated rural roads	5,125 km (2015)
Rate of increase in domestic traffic (2009-2012)	59%
Number of airports (2015)	6
Number of aerodromes (2015)	47
<b>ITC Sector</b>	
Rank in the ICT Development Index (IDI) - 2015	142 <sup>nd</sup> out of 152 countries
Mobile telephony penetration rate (2014)	39.76%
Number of mobile phone subscribers (2014)	5.3 million
Internet access rate (2014)	14.1%
Turnover in the electronic communications sector (2014)	CFAF 178 billion
Jobs created by the electronic communications sector (2014)	1,117
Government taxes and fees (2013)	CFAF 37.09 billion
<b>Energy</b>	
Electricity access rate (2013)	3.9%
Power available in N'Djamena (2015)	142.2 MW
Cost per kilowatt hour for low-voltage domestic use for the first tranche 0 to 150 kWh (2013)	CFAF 85
Cost per kilowatt hour for 150 kWh + (2013)	CFAF 125

The expected output of this strategic direction is “infrastructure as a lever for sustainable development”. This output will be achieved through: “the implementation of economic infrastructures”.

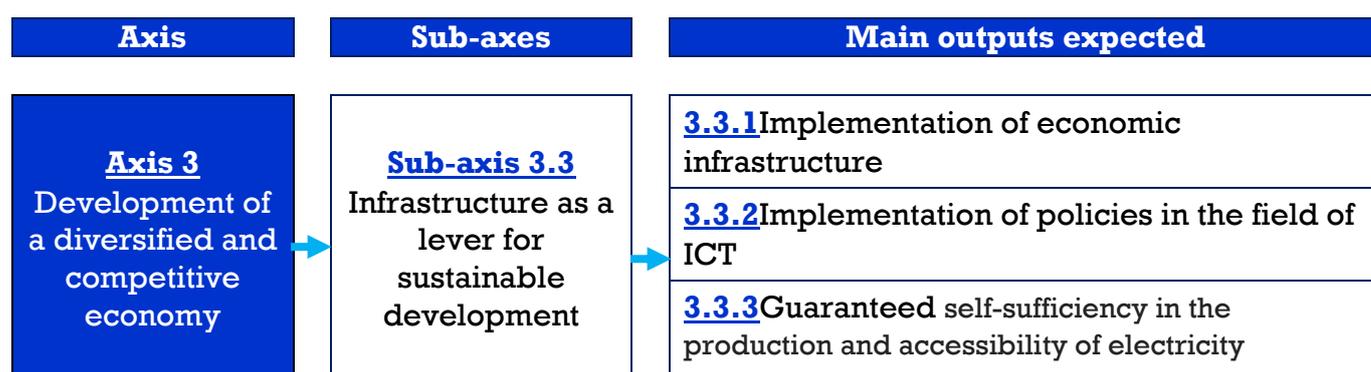
This output will be achieved through the three intermediate outputs as follows: (i) the development of physical infrastructure to support the production, processing, distribution and marketing of commodity chain products; (ii) the continued strengthening of the institutional and human capacity of the authority in charge of the design, implementation and control of investment projects; and (iii) guaranteed security of transport

operations and better organisation of urban transport.



“Improving the conditions for developing and accessing ICT” is the strategic guideline adopted by the NDP 2017-2021 for the ICT sector. This will be achieved through: “satisfactory implementation of ICT policies”. The success of this output is based on the following intermediate outputs: (i) clear rejection of the ICT policy; (ii) strengthening of the institutional, technical and human capacities of the ICT sector; (iii) implementation of ICT infrastructure.

**Figure: Schematic view of expected results**



The energy component of the NDP 2017-2021 is broken down into the following strategic guideline: “Ensuring the self-sufficient production and accessibility of electricity”. This guideline will be achieved through “guaranteeing the self-sufficient production and accessibility of electricity”. Chad expects to improve the energy coverage rate through the following two intermediate outputs: (i) increased production capacity and (ii) more economical and reliable renewable energy production infrastructure.

## Financing

The total cost of implementing the basic economic infrastructure over the period covered by the NDP 2017-2021 is CFAF 1,764,510,140,000, i.e. 71.45% of the cost of Axis 3 relating to the diversification of the Chadian economy and 31.86% of the overall cost of the NDP.

This total amount is allocated as follows: CFAF 828,893 million for structural infrastructure, i.e. 47% of the cost of Axis 3; CFAF 315,517,938,000 for ICT, i.e. 18% of the cost of Axis 3 and CFAF 620.09 billion for energy, i.e. 35% of the cost of Axis 3. Six PPP financing projects totalling CFAF 191.95 billion, i.e. 9.63% of the total cost will be implemented with regard to basic economic infrastructure.

Intermediary Outputs	Total (in CFAF)
Transport Sector	828, 893, 000, 000
ICT Sector	315, 517, 938, 000
Energy Sector	620, 099, 202, 000
<b>Total</b>	<b>1, 764, 510, 140, 000</b>