



## 中非基础设施建设合作成就

过去几十年, 中国企业在非洲参建大量的铁路、公路、港口、机场等交通设施, 水利枢纽和电力设施

文 | 智宇琛 中国社科院西亚非洲研究所南非研究中心副秘书长

### 中国参与的非洲交通骨干网络建设

在铁路建设方面, 中国企业多年来在非洲参与了多项重大铁路建设工程。中国铁建承建了全长 478 公里的罗安达铁路和全长 1344 公里的本格拉铁路对安哥拉“能源走廊”建设及国民经济发展至关重要。中国铁建承建的埃塞俄比亚至吉布提铁路成为该国的“生命之线”。在肯尼亚, 中交集团承建的蒙内铁路(蒙巴萨港-内罗毕)全长 480 公里, 设计运力 2500 万吨极大促进当地经济贸易发展。中国能建、中国铁建等企业承建的尼日利亚哈科特-迈杜古里、拉各斯-卡诺及沿海铁路等长大干线形成西部非洲铁路骨干网。

在公路建设方面, 中国企业凭借自身优势圆满完成了众多建设任务。中国电建承建的 12 条普通公路形成了坦桑尼亚国家交通骨干网络。中交集团承建的全长 126 公里的国家 2 号公路一期工程是连接该国北部最大城市韦索和首都布拉柴维尔的交通要道。中交集团承建的全长 78.4 公里的亚的斯亚贝巴-阿达玛高速公路是埃塞俄比亚第一条高速公路, 也是东非地区规模第一、等级最高的高速公路。中国建筑、中国铁建、中国电建等企业参建的阿尔及利亚南北高速、东西高速、贝佳亚至哈尼夫高速公路、摩洛哥伊阿高速

等都是非洲的重要公路工程。

在港口和机场建设方面, 中国企业也做出了积极贡献。中国路桥承建的友谊港 4、5 号泊位工程对毛里塔尼亚及周边地区经济发展将起到巨大推动作用。在加蓬, 中交集团积极参与投资运营让蒂尔港建设项目。中交集团、中国电建等企业还承担了毛里塔尼亚努瓦迪布港、几内亚科纳克里码头、尼日利亚拉各斯港和莱基港、埃及塞得港等项目。在机场建设方面, 中交集团所属中国港湾工程有限公司不仅顺利实施了苏丹喀土穆国际机场工程, 还承建南苏丹朱巴国际机场改扩建工程。中国水电、国机集团、中国建筑、中国电建等企业承建了马里、塞拉利昂、坦桑尼亚、刚果(金)、毛里求斯、肯尼亚等国多个机场建设项目。

### 中国参与的非洲水利枢纽和电力设施建设

在苏丹, 中国电建承建的苏丹麦洛维大坝被誉为苏丹的“三峡工程”, 总装机容量为 125 万千瓦, 灌溉农田面积可达 100 多万亩, 惠及 400 多万苏丹人民。中国电建承建了上阿特巴拉水利枢纽和罗赛雷斯大坝等水利工程, 并一揽子总承包建设了包括 300 多座小型水坝在内的雨水收集项目。

在尼罗河水资源开发中, 中国电建、中国能建和中国建筑等企业承建的埃塞俄比亚特克泽水电站、纳莱-达瓦河水电站, 乌干达伊辛巴水电站和卡鲁玛水电站等项目总装机容量近 200 万千瓦。在赞比西河水资源开发中, 中国电建承建了津巴布韦和赞比亚的卡里巴南、北岸大型水电站工程, 为该地区矿业、农业发展和次区域合作提供稳定的电力保障。

在一些电力缺乏较为严重的国家, 中国企业承建的电站发挥了较好的经济社会效益。刚果(布)英布鲁水电站的建成实现了该国电力的自给自足, 刚果(金)宗戈水电站解决了金沙萨和下刚果省的用电难题, 喀麦隆曼维莱水电站、颂东水电站都是该国最重要的供电设施, 赤道几内亚吉布洛水电站及其相关工程不仅解决了 25 个城市的居民用电, 也对其上下游农田灌溉产生积极作用。

中国企业还积极帮助非洲国家建立电力工业体系。中国电建承建的宗格鲁水电站发电量占尼日利亚总发电量近 20%, 欧莫托休、奥贡及帕帕兰多等大型电站总发电量超过其全国发电量的 50% 以上。由中国能建承建的穿越尼日利亚科吉州、尼日尔州和联邦首都特区等 3 个州的大型输电项目, 是尼中部向首都送电的

### 中非合作基础设施建设重要项目

项目名称	所在国	实施主体
卡里巴北岸水电站	赞比亚	中国电建
罗安达供水项目	安哥拉	中国电建
援安哥拉医院	安哥拉	中铁工程
加纳电气化项目	加纳	中国电建
布维水电站	加纳	中国电建
雅温得供水项目	喀麦隆	三峡集团
内罗毕环城路	肯尼亚	中交集团
马普托供水工程	莫桑比克	中冶集团
英布鲁水电站	刚果(布)	国机集团
“一揽子”合作基建项目	刚果(金)	中国电建
凯乐塔水利枢纽项目	几内亚	三峡集团
国家电信骨干网	喀麦隆	中石油
城市电网改造	肯尼亚	国机集团
努瓦克肖特港扩建工程	毛里塔尼亚	中国电建
贫困三角洲公路	毛里塔尼亚	中铁工程
塞拉利昂国机机场	塞拉利昂	国机集团
麦洛维水电站	苏丹	中国电建
乌姆-阿布公路	苏丹	中国电建
FAN水电站	埃塞俄比亚	中国能建
安哥拉农场	安哥拉	国机集团
巴塔电网	赤道几内亚	中国电建
OBO公路	刚果(布)	国机集团
金沙萨恩吉利国际机场	刚果(金)	中国电建
阿达玛风电项目	埃塞俄比亚	中国电建
亚的斯亚贝巴轻轨	埃塞俄比亚	中铁工程
宗戈水电站	刚果(金)	中国电建
吉布洛水电站	赤道几内亚	中国电建
曼维莱水电站	喀麦隆	中国电建
克里比疏港	喀麦隆	中交集团
内罗毕—锡卡高速公路	肯尼亚	中国电建
蒙内铁路	肯尼亚	中交集团
朱巴国际机场	南苏丹	中交集团
天然气处理厂及输送管线	坦桑尼亚	中石油
大布巴哈电站	加蓬	中国电建
卡里巴南岸水电	津巴布韦	中国电建
苏布雷水电站	科特迪瓦	中国电建
阿比让港口扩建项目	科特迪瓦	中交集团
古伊纳水电站	马里	中国电建
毛里求斯新机场	毛里求斯	中国建筑
宗格鲁水电站	尼日利亚	中国电建
伊辛巴水电站	乌干达	三峡集团
卡鲁玛水电站	乌干达	中国电建
城乡水利工程	乍得	中铁工程
亚的斯至阿达玛高速路	埃塞俄比亚	中交集团
亚的斯亚贝巴至吉布提铁路	埃塞俄比亚	中国铁建
尼日利亚铁路现代化项目	尼日利亚	中国铁建
农业部粮库建设项目	赞比亚	国机集团

图表来源：作者整理

电力主干网。中国电建等企业还通过在当地建立人才培训中心、投资设立电力设备生产基地等方式，培养电力人才和提供电力设备。

在新能源领域，中国企业也积极利用先进技术开拓非洲市场。由中国电建承建的阿达玛风电项目是中国第一个技术、标准、管理、设备整体走出去的风电项目，采用中国标准进行设计、施工和验收，同时在该国引入新技术和建立有关标准。

### 中国积极拓展房建和市政设施建设市场

中国援建并由中国建筑承建的非盟会议中心在当地树立了良好口碑。近年来中国企业承建的其他重要项目还有：坦桑尼亚尼雷尔国际会议中心、塞内加尔国家歌剧院、加蓬体育场，以及数量众多的援非学校、医院、政府大楼等项目。

中国企业在北非地区的拓展尤其引人关注。中国建筑承建合同总额15亿美元的阿尔及尔大清真寺项目是中国企业在非洲承建的最大项目。中国建筑还承建了阿尔及利亚司法部13省监狱一揽子项目以及7座五星级酒店工程。中石化于2008年承建了被誉为“世纪工程”的阿尔及利亚因萨拉至塔马哈赛特饮用水建设项目。

中国电建、中国能建、国机集团等企业承建了罗安达、马兰热、克利马内、马普托等主要城市的14项市政道路、电力系统、城市给排水、通信等城市基础设施建设项目，解决了30万居民的饮水问题。中国电建在加纳承建的“光明工程”惠及全国7个省700余个村镇，促进了当地经济社会发展。国机集团承建的加纳塞康迪-塔克拉底、苏尼亚尼等三大区域性供水项目解决了该国西部50万人的卫生供水问题。（编辑：杨海霞）



# State of Infrastructural Development Cooperation between China and Africa

By Zhi Yuchen, Secretary general of South Africa Research Center CASS

A six-month survey was carried out in which data was collected on 286 large-scale infrastructural projects executed by Chinese companies in Africa in the past five years. The projects covered by the survey involved three main fields: transportation, water conservancy and electricity, building and municipal engineering. The projects in the transportation field included highways and roads, railways and subways, airports, wharves and ports. The water conservancy and electricity projects included dams, water channels, irrigation systems, hydropower stations, thermal power stations, electric transmission lines and electricity substations. The building and municipal engineering projects included urban construction, urban facilities, municipal water supply systems, sewage treatment, government buildings, and health and education buildings. The number and distribution of these projects across African continent are provided in Table.

In east Africa, Chinese companies are largely engaged in transportation infrastructural projects. Examples of their involvement are the railways from Mombasa to Nairobi and from Ethiopia to Djibouti connecting coastal cities with inland agriculture and industrial centres; the highways from Nairobi to Sikha and from Addis Ababa to Adama, 12 roads in Tanzania and eight roads in the north of Ethiopia, the international

connecting roads linking the borders of Tanzania and Uganda. All these roads contribute to the traffic network of those countries. Other projects have included the ring road around the city of Nairobi, the subway in Addis Ababa and two airports in Tanzania, all of which facilitate the traffic in and between the main cities.

In terms of water conservancy and electricity, the total investment of Tekeze, Dawa River and FAN Hydropower Station in Ethiopia, Isinbay and Karuma Hydropower Station in Uganda, HGF Water Control Project in Kenya exceeds 5 billion US dollars and the total installed capacity is 2 million kilowatt. The substation and transmission projects from Ethiopia to South Sudan, and those of the Meles and Revival dams are important for the Ethiopian economy. In addition, the Engineering Procurement Construction (EPC) ADAMA wind farm project has contributed significantly to the use of new energy in Africa.

In the building and municipal engineering field, Chinese companies are participating in the AU headquarters project and the Nyerere international conference centres which are supported by the Chinese government. The presidential office, in Uganda, and the Dodoma University, in Tanzania, projects have received international acclaim. The water supply systems and

sewage treatment stations in Nairobi, Dar es Salaam and other cities have brought with them a plentiful and healthy supply of water for the locals.

In southern Africa, the contribution of Chinese companies to the engineering and building of municipal infrastructures is impressive. Municipal infrastructural projects include urban roads, power supply systems, water supply systems and sewage treatments. Communication facilities in 14 cities, including Luanda, Malanje, Quelimane and Maputo, have been successfully executed by Chinese companies. They have also assisted with the building of eight hospitals, 18 schools and universities, more than 10 thousand apartments, and many government buildings in Angola, Zambia and Mozambique, some of these projects being supported by the Chinese government.

In the area of transportation, Chinese companies participate in many important projects following the 'Angola model', including the energy corridors in the west of Angola, and the ports of Luanda, Cabinda and Lobito. Also worth attention are the 1833 km of the Benguela and Luanda railways built by Chinese companies to connect with the railways of Zambia and Tanzania and to provide transport from the Atlantic and the Indian Ocean to the hinterland of Africa. In addition

to railway lines, China has provided railway products which include locomotives and railroad cars. These have been popular in South Africa and are responsible for over 3 billion US dollars in sales over the past five years. Furthermore, Chinese companies also transfer technology, build product lines and service networks in South Africa.

In the water conservancy and electricity sphere, Chinese companies have participated in the renowned Zambezi River resource utilisation project. The south and north coast of Kariba Lake power stations, the Dick Dam, the Zambia KAEFER Gorge Hydropower Station and the Lesotho Metolong Dam have strategic significance for Zambia, Botswana and Lesotho.

In western Africa, Chinese companies are also playing important role in the construction of electricity industry. The Bouvet and Akosombo Hydropower Station have transformed Ghana into an electricity exporting country; the Soubre Hydropower Station has changed the traditional electric power structure in Côte d'Ivoire. In Nigeria, Chinese companies have not only built four large-scale power stations and established an ALG power transfer programme which provides more than 50% of the electricity in the country, but has also assisted with the construction of the electricity industry through technology transfer, training, and investment in manufacturing.

The construction of medium-scale power stations in Benin, Togo, Mali and Guinea have been highly praised by the presidents and government officials of those countries. In the transportation field, railway lines in Nigeria, from Port Harcourt to Maiduguri, Lagos to Kano, and the Coastal Railway through the Niger River Delta oil zone were constructed by a Chinese contractor. Chinese companies also invest in and/or support the construction of ports and wharves such as those of Abidjan in Cote d'Ivoire, Port Etienne and the Port of Friendship (supported by China) in Mauritania, Port Conakry in Guinea,

Lekki Port and the Free Trade Zone in Nigeria.

In the building and municipal engineering sphere, projects representing more than 100 US million dollars each have been carried out by Chinese companies in Nigeria, Ghana and Côte d'Ivoire and are highly praised by the local people. In Nigeria, Chinese companies have built apartments for the officials of five state governments and constructed 8 km<sup>2</sup> of artificial sandy beach at Port Lagos. In Ghana, the 'light plan' has solved the electricity problems of 700 villages in seven states; water supply projects in three main areas are providing healthy water for more than 500 thousand people; and an EPC project has provided 30 thousand welfare apartments, thus improving the living conditions of local people. Through fair competition and bidding, Chinese companies undertake many infrastructural projects with the support of the Chinese Government. These have included the Offices of the Mauritanian President and Administration, an international conference centre, the University of Nouakchott, the Sierra Leone National Grand Theatre, and the Mali Hospital. In addition, Chinese communication companies co-operate with companies from Togo and Nigeria to provide information services for millions of customers.

In central Africa, agreements between African countries and the Chinese financial support sector have resulted in business opportunities for Chinese companies. In the transportation sector, projects with investments of over 100 million US dollars include the national roads N-1 and N-2 connecting Pointe-Noire, Ouessou and Brazzaville Road OBO, Kita connecting with Gabon and Cameroon and, in the Democratic Republic of Congo, the main street of Kinshasa, Lumumba Avenue, and Road K-K leading to the Atlantic Ocean in the Democratic Republic of Congo.

Although not so large in scale, the hydropower station projects supported by package agreements and

export-loans from China are critical to countries in central Africa. The Imboulou Hydroelectric Plant has made the Republic of Congo self-sufficient in terms of electricity. In the Democratic Republic of Congo, the Zongo Hydroelectric Power Plant is supplying Kinshasa and the Bas-Congo. In Equatorial Guinea, the Djibloho Hydropower Station not only supplies electricity to 25 cities but irrigates thousands acres of farmland. In addition the Manweilai and Songdong hydropower stations in Cameroon and the Bubaha Hydropower Station in Gabon are all important hydroelectric power facilities for those countries.

In the building and municipal engineering field, the package agreements and export loans from China also play important roles. These kinds of agreement support projects such as the water conservancy project in N'Djamena and the sewage disposal system in Malabo, which have solved the drinking water problems of the local people; the national communication network in Cameroon and the Bata power grid in Equatorial Guinea, which promote industrial development; and the central hospital and the People's Palace Square in Kinshasa, which enhance the living conditions of people in the Democratic Republic of Congo. The investment of Chinese companies has also brought with it infrastructural projects such as the Belinga Iron Mine in Gabon, where the Chinese investor has undertaken the railway project from Belinga to Libreville and other ports. The Chinese investor in the development of the Port-Gentil has formed a strategic partnership with the Government of Gabon and is in charge of the construction of related roads, wharves and bridges.

In northern Africa, although Chinese companies face 'high competition' and 'high risk' situations, they have nonetheless managed good performances in infrastructural cooperation. In the transportation sector, Chinese companies are involved in the 'two vertical and three horizontal'



high-speed road network which covers the east to Tunis, west to Morocco, north to the Mediterranean and south to the interior of central Africa, as well as the 'two vertical and one horizontal' railway network which has increased the transportation efficiency of the south coast of the Mediterranean and of the non-main railway line of Libya. However, when Chinese companies made the bid for these projects, they encountered competition from French, Japanese and US companies. In addition, the instable political situation in Libya caused these companies huge losses.

In the water conservancy and electricity field, Chinese companies have made great progress in Sudan. The Merowe Dam is the longest dam in the world and the second largest hydroelectric power project on the River Nile, which also irrigates more than 25 thousand acres of farmland and thus benefits 4 million people. The reservoir capacity of the Rosyth Dam and the Atbara water conservancy is 70 billion m<sup>3</sup> and benefits more than one third of Sudan people. The installed gross capacity of hydroelectric power stations executed by Chinese companies in Sudan is more than 2.43 million kilowatts which is four times what the country had before. In addition, Chinese companies helped to build 300 small-scale dams in a package project to solve local hydropenia problems.

In the building and municipal engineering field, the water supply system from In Salah to Tamanrasset in Algeria is called the Great Century Project, and the high technology used in the Algeria National Stadium has significantly reduced the cost. In addition, the successful construction of the Constantine Marriott Hotel, the Annaba Sheraton Hotel and the Gemma Mosque demonstrate the excellent abilities of Chinese companies.

In summary, infrastructural development has become one of the most important sectors for cooperation between China and Africa. According

to preliminary results, projects executed by contractors from China exist in all sub-regions of the African continent. These include more than 6000 miles of roads, 7000 miles of railway lines,

16 ports and approximately 20 city airports, 90% of hydroelectric power stations in the whole continent as well as water and electricity supply systems in more than 30 cities.

### Major infrastructure projects for China-Africa cooperation

Project	Country
Luanda city water supply system	Angola
Hospital in Angola	Angola
Angola farm	Angola
Yaoundé city water supply system	Cameroon
National Telecommunication backbone network	Cameroon
Manweilai Hydropower Station	Cameroon
Port of Kribi	Cameroon
Chad water conservancy project	Chad
Package cooperation projects	Congo, Dem. Rep
Kinshasa Airport	Congo, Dem. Rep
Zongo Hydropower Station	Congo, Dem. Rep
Imboulou Hydropower Station	Congo, Rep
OBO road	Congo, Rep
Soubre Hydropower Station	Cote d'Ivoire
Abidjan port expansion project	Cote d'Ivoire
Bata power grid	Equatorial Guinea
construction goals of Station	Equatorial Guinea
FAN Hydropower Station	Ethiopia
Adama wind power project	Ethiopia
Addis Ababa urban rail	Ethiopia
Addis Ababa - Adama high speed road	Ethiopia
Addis Ababa - Djibouti Railway	Ethiopia
Baja power station	Gabon
Ghana Electrical engineering	Ghana
Bouvet Hydropower Station	Ghana
Kelleta Key Water Control Project	Guinea
Nairobi round city highway	Kenya
Transformation of urban power network	Kenya
Nairobi -- Thika highway	Kenya
Nairobi Mombasa Railway	Kenya
the Guinagh Hydropower Station	Mali
Nouakchott port expansion project	Mauritania
the Poor Delta roads	Mauritania
Mauritius new airport	Mauritius
Maputo city water supply system	Mozambique
Zongo Hydropower Station	Nigeria
Modern railway	Nigeria
Sierra Leone Airport	Sierra Leone
Juba airport	South Sudan
Merowe Hydropower Station	Sudan
Umm Abu road	Sudan
Natural gas processing plant and pipeline	Tanzania
Kayunga Hydropower Station	Uganda
Karuma Hydropower Station	Uganda
Kariba North Bank Hydropower Station	Zambia
Ministry of Agriculture grain depot	Zambia
Kariba South Bank Hydropower Station	Zimbabwe