

**northeast** group, llc

# Sub-Saharan Africa Power Sector: Market Forecast (2019 – 2028)

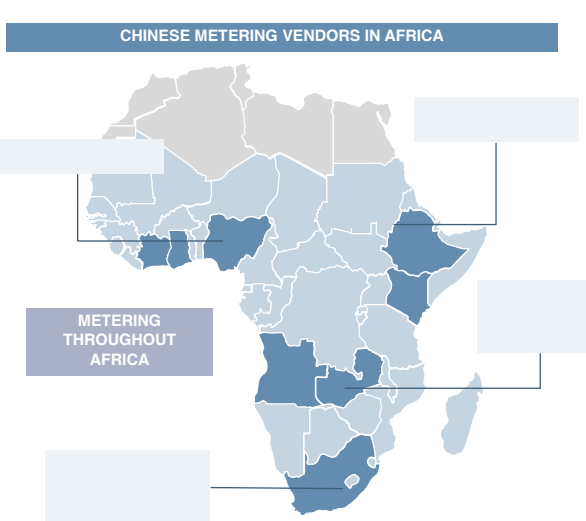
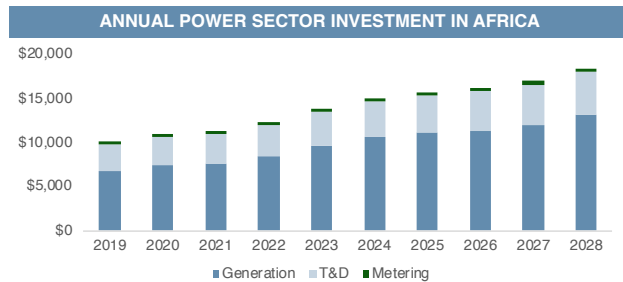
Volume III  
November 2019 | [www.northeast-group.com](http://www.northeast-group.com)

## Sub-Saharan Africa Power Sector: Market Forecast (2019 – 2028)

Economic development in Sub-Saharan Africa is inextricably tied to the growth of its power sector. There are still 600 million people in the continent without access to electricity and therefore unable to contribute to or benefit from the expected gains of the next decade. Meanwhile, the billions of dollars of investment needed to

reach these customers will provide an added boon to local economies and the modern infrastructure they provide will help the economies diversify. While the majority of the expected \$141bn in investment over the next ten years will come from large-scale generation, there will also be leapfrogging opportunities with micro grids, modern transmission and distribution grids, advanced metering, and additional smart grid infrastructure. If successful Africa's power sector investment plans will be a direct source of economic development and an enabler of future growth.

Yet, while projections remain strong, a number of challenges could thwart these ambitious plans. Most notably, the utilities that will largely be responsible for carrying out power sector investment are almost universally in financial ruin, dependent on multilateral aid and high-interest debt to carry



out their investments. While foreign assistance may help cover the upfront costs of generation, most utilities are currently not in a position to maintain these investments and sustain growth. One of the keys to financial sustainability is efficient and modern metering – the cash register of the power sector. Many African utilities are under-metered and suffer high T&D and collection loss rates. Investment in prepaid – and especially AMI – meters will be critical to sustaining revenues. Smart grid infrastructure will be critical to sustaining Sub-Saharan Africa's rapid growth.

Key questions answered in this study:

- How large will the power sector market be across Sub-Saharan Africa?
- What factors will drive investment in power generation, T&D, and metering?
- Which African countries are implementing prepaid and advanced metering projects?
- What major international and local vendors are best positioned to supply the region?

## Table of Contents

i. Executive summary	1
<b>1. What's new in 2019</b>	<b>3</b>
<b>2. Market forecast</b>	<b>18</b>
<b>3. South Africa</b>	<b>23</b>
<b>4. Nigeria</b>	<b>29</b>
<b>5. Kenya</b>	<b>38</b>
<b>6. Ghana</b>	<b>43</b>
<b>7. Ethiopia</b>	<b>48</b>
<b>8. Tanzania</b>	<b>53</b>
<b>9. Mozambique</b>	<b>58</b>
<b>10. Côte d'Ivoire</b>	<b>63</b>
<b>11. Angola</b>	<b>68</b>
<b>12. Senegal</b>	<b>73</b>
<b>13. Uganda</b>	<b>78</b>
<b>14. Cameroon</b>	<b>83</b>
<b>15. Zambia</b>	<b>88</b>
<b>16. Rwanda</b>	<b>93</b>
<b>17. Botswana</b>	<b>98</b>
<b>18. Namibia</b>	<b>103</b>
<b>19. Other countries</b>	<b>108</b>
<b>20. Vendor activity</b>	<b>110</b>
<b>21. Appendix</b>	<b>119</b>

## List of Figures and Tables

Sub-Saharan Africa power sector: Key takeaways	2
Figure 1.1: Electrification growth in sub-Saharan Africa	3
Figure 1.2: Forecast growth in electricity generation (2019 – 2028)	4
Figure 1.3: Multilateral electrification goals	5
Figure 1.4: Off-grid power will help drive smart infrastructure investment	6
Figure 1.5: Urbanization and rural electrification rates	7
Table 1.1: Off-grid power initiatives in Africa	8
Figure 1.6: Sub-Saharan Africa mini-grid pipeline	8
Figure 1.7: Interest coverage ratio of African utilities	9
Figure 1.8: Debt-to-equity ratio of African utilities	9
Figure 1.9: Tariffs compared to cost-reflective pricing	10
Figure 1.10: T&D losses in Africa	11
Figure 1.11: Prepaid meter penetration rates in Africa	12
Figure 1.12: Countries with largest planned/contracted AMI deployments	13
Table 1.2: Recent AMI and prepaid metering activity in Africa	14
Figure 1.13: Losses and metering rates at Nigerian utilities	15
Figure 1.14: Chinese metering vendors in Africa	17
Figure 2.1: Annual power sector investment in Africa	18
Table 2.1: Annual power sector investment in Africa	18
Figure 2.2: Cumulative generation capacity in Africa	19
Figure 2.3: Annual generation investment in Africa	19
Figure 2.4: Cumulative T&D investment in Africa	20
Figure 2.5: Annual T&D investment in Africa	20
Figure 2.6: Cumulative metering investment in Africa	21
Table 2.1: Cumulative metering investment in Africa	21
Figure 2.7: AMI penetration rate in Africa	22
Figure 2.8: Cumulative AMI investment in Africa	22
Figure 3.1: South Africa generation forecast	24
Table 3.1: South African municipal utility metering	27
Figure 3.2: South Africa meter market forecast by segment	28
Table 3.2: South Africa meter forecast data	28
Figure 4.1: Nigeria generation forecast	30

## List of Figures and Tables (cont.)

Figure 4.2: Metering status at Nigerian utilities	32
Figure 4.3: Nigerian metering investment plans	33
Table 4.1: Nigerian utility plans and goals	34
Figure 4.4: Meters under contract for leading MAP providers (2019 - 2023)	35
Table 4.2: Nigerian utility meter financing	36
Figure 4.5: Nigeria meter market forecast by segment	37
Table 4.3: Nigeria meter forecast data	37
Figure 5.1: Kenya generation forecast	39
Figure 5.2: KPLC revenue and prepaid metering	41
Figure 5.3: Kenya meter market forecast by segment	42
Table 5.1: Kenya meter forecast data	42
Figure 6.1: Ghana generation forecast	44
Figure 6.2: Ghana customers and sales growth	46
Figure 6.3: Ghana meter market forecast by segment	47
Table 6.1: Ghana meter forecast data	47
Figure 7.1: Ethiopia generation forecast	49
Figure 7.2: Ethiopia metering plans timeline	51
Figure 7.3: Ethiopia meter market forecast by segment	52
Table 7.1: Ethiopia meter forecast data	52
Figure 8.1: Tanzania generation forecast	54
Figure 8.2: Electrification growth in Tanzania	56
Figure 8.3: Tanzania meter market forecast by segment	57
Table 8.1 Tanzania meter forecast data	57
Figure 9.1: Mozambique generation forecast	59
Table 9.1: EDM strategic initiatives	61
Figure 9.2: Mozambique meter market forecast by segment	62
Table 9.2: Mozambique meter forecast data	62
Figure 10.1: Côte d'Ivoire generation forecast	64
Figure 10.2: Côte d'Ivoire power sector targets	66
Figure 10.3: Côte d'Ivoire meter market forecast by segment	67
Table 10.1: Côte d'Ivoire meter forecast data	67
Figure 11.1: Angola generation forecast	69

## List of Figures and Tables (cont.)

Figure 11.2: Electrification in Angola	71
Figure 11.3: Angola meter market forecast by segment	72
Table 11.1: Angola meter forecast data	72
Figure 12.1: Senegal generation forecast	74
Figure 12.2: Recent SENELEC meter deployments	76
Figure 12.3: Senegal meter market forecast by segment	77
Table 12.1: Senegal meter forecast data	77
Figure 13.1: Uganda generation forecast	79
Figure 13.2: UMEME customer and prepaid growth	81
Figure 13.3: Uganda meter market forecast by segment	82
Table 13.1: Uganda meter forecast data	82
Figure 14.1: Cameroon generation forecast	84
Figure 14.2: Electrification growth in Cameroon	86
Figure 14.3: Cameroon meter market forecast by segment	87
Table 14.1: Cameroon meter forecast data	87
Figure 15.1: Zambia generation growth	89
Figure 15.2: ZESCO prepaid metering	91
Figure 15.3: Zambia meter market forecast by segment	92
Table 15.1: Zambia meter forecast data	92
Figure 16.1: Rwanda generation forecast	94
Figure 16.2: Electrification growth in Rwanda	96
Figure 16.3: Rwanda meter market forecast by segment	97
Table 16.1: Rwanda meter forecast data	97
Figure 17.1: Botswana generation forecast	99
Figure 17.2: BPC customer and sales growth	101
Figure 17.3: Botswana meter market forecast by segment	102
Table 17.1: Botswana meter forecast data	102
Figure 18.1: Namibia generation forecast	104
Figure 18.2: Namibia RED prepaid metering	106
Figure 18.3: Namibia meter market forecast by segment	107
Table 18.1: Namibia meter forecast data	107

## List of Figures and Tables (cont.)

Table 19.1: Meter market size of additional African countries	108
Figure 19.1: Additional countries not considered in detail	109
Table 20.1: Leading international and local vendors in Africa	110
Figure 20.1: Leading international metering vendors in Africa	111
Table 20.2: Leading off-grid power providers	112
Figure 20.2: Meters under contract for MAP providers in Nigeria	113
Figure 20.3: Chinese metering vendors in Africa	114
Figure 20.4: El Sewedy activity in Africa	116

**Order Form:**  
**Sub-Saharan Africa Power Sector: Market Forecast (2019 – 2028)**

Pricing

Single user – \$3,750 | Enterprise license – \$5,400

*Clients purchasing a single user license are limited to one user for this report. The enterprise license allows all employees within a single organization to view the report. Any forwarding or sharing of the report to others who have not paid for it is strictly forbidden.*

**Email orders:** Two options: (a) Fill out and scan the sheet below; or (b) Email us a request for a secure link to pay by credit card (specifying single user or enterprise license). Please email orders to **ben.gardner@northeast-group.com**

**Telephone:** We can be reached at **+1.202.538.0848**. Please have all of the information below ready to expedite your order.

**Customer information**

SINGLE USER     ENTERPRISE LICENSE

NAME	POSITION	COMPANY	
ADDRESS			
CITY	STATE	POSTAL CODE	COUNTRY
TELEPHONE	EMAIL		

**Credit card information** Card type:

VISA     MASTERCARD     AMERICAN EXPRESS     DISCOVER

CARD NUMBER	EXPIRATION DATE	CV CODE	
CARDHOLDER'S NAME	SIGNATURE	DATE	
BILLING ADDRESS			
CITY	STATE	POSTAL CODE	COUNTRY

*By purchasing this report I agree to abide by the following terms and conditions: 1. Single-user license - use of this report is restricted to one individual. 2. Enterprise license – use of this report is restricted to individuals within a single enterprise or organization. I agree not to forward or share this report to others who have not paid for its use.*