African Electricity Data Transparency

Country-by-country profiles and evaluation of national electricity data sources

January 2022
What is this report?
• This report identifies and evaluates the availability and quality of national electricity data sources for 54 countries in Africa.

What did we do?
• We examined each country to identify if publicly available electricity production data could be found.
• Where we could find data, we evaluated the source according to publishing lag, level of disaggregation (in terms of fuel-types and geography), granularity, ease of download, and other data metrics.
• We then awarded an overall score out of 5 as follows:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>5</td>
<td>Real-time data with full disaggregation and ease-of-access</td>
</tr>
<tr>
<td>4</td>
<td>Monthly or better data with good fuel breakdown and other metrics</td>
</tr>
<tr>
<td>3</td>
<td>Better-than-annual data available with some fuel breakdown + other data</td>
</tr>
<tr>
<td>2</td>
<td>Annual available data with &lt; 1 year lag, mostly high-level or difficult to access</td>
</tr>
<tr>
<td>1</td>
<td>Little and / or low quality and / or long lag data available</td>
</tr>
<tr>
<td>0</td>
<td>No publicly available data</td>
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</tbody>
</table>

Why did we research this report?
• African electricity data transparency is essential for guiding, informing and tracking Africa’s energy development, both in terms of clean and efficient growth and shifting from fossil-fuels to clean sources in countries with more mature energy infrastructure.
• Reliable, up-to-date and publicly available data enables informed, evidence-based policy-making, and allows others, including academia, civil-society and the donor community, to hold governments and policy-makers to account.

About the authors
Guy Cunliffe is a South African energy and sustainability analyst with previous experience working with the Energy Systems Research Group, at the University of Cape Town, on climate equity, SDG-7 and the just transition.

Pete Tunbridge is Junior Electricity Tracking Analyst, who has been researching electricity data transparency at Ember for the past two years.
Key findings

• National data is available for many countries in Africa, but the quality is generally low, with long lag times and inconsistent publishing frequency.

• No country achieved the highest overall score. South Africa scored the highest with 4/5, whilst 21 countries had no publicly available data at all.

• Data transparency in Africa is improving. Many countries have new/updated national data sources that have been developed in the last few years.

• As infrastructure evolves, including electricity systems, but also ICT and data systems, it is likely that data transparency will continue to improve - but Africa will need substantial support to accelerate these developments.
Countries listed by region and in descending order of annual electricity demand according to Ember’s Global Electricity Review data for the year 2019:  

1. South Africa  
2. Egypt  
3. Algeria  
4. Morocco  
5. Nigeria  
6. Libya  
7. Tunisia  
8. Sudan  
9. Zambia  
10. Mozambique  
11. Ethiopia  
12. Angola  
13. Kenya  
14. Ghana  
15. DRC  
16. Zimbabwe  
17. Côte d’Ivoire  
18. Cameroon  
19. Tanzania  
20. Senegal  
21. Namibia  
22. Uganda  
23. Mali  
24. Botswana  
26. Mauritius  
27. Gabon  
28. Madagascar  
29. Guinea  
30. Niger  
31. Burkina Faso  
32. eSwatini  
33. Togo  
34. Benin  
35. Malawi  
36. Equatorial Guinea  
37. Lesotho  
38. Rwanda  
39. Mauritania  
40. South Sudan  
41. Eritrea  
42. Cabo Verde  
43. Burundi  
44. Seychelles  
45. Liberia  
46. Somalia  
47. The Gambia  
48. Sierra Leone  
49. Chad  
50. Central African Republic  
51. Comoros  
52. São Tomé & Principe  
53. Djibouti  
54. Guinea-Bissau
South Africa has very good national electricity production data available, with short lag and very high granularity. **Eskom**, the national electricity utility and system operator, is the main source of electricity generation data, which is available from [here](#), and has the following characteristics:

- Hourly granularity of generation, import and export data going back to 01 April 2017
- Data broken down into “thermal” (i.e. Eskom’s coal fleet) + more detailed breakdown of renewables, nuclear, gas and diesel (including IPPs, but excluding plant, plant-unit or sub-national regional level)
- Capacity, demand (in MW), outage and load factor (incl. demand-side management) data also included; no financial data
- Data is freely available, but requires completion of an online form, after which it is delivered in csv form by email, typically within 48 hours (but sometimes with longer delays of up to 1 month)

Other data sources:
- Dept. Mineral Resources & Energy publishes annual (comprehensive fuel-split) energy balance data, but with very long lag (the most recent available energy balance at the time of writing was 2018)
- StatsSA publishes monthly generation and distribution data, but with no fuel-split (very high-level)
- NERSA (National Energy Regulator of South Africa) last published electricity supply statistics in 2012

Overall Score: 4 / 5

<table>
<thead>
<tr>
<th>Publishing lag</th>
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<th>Additional data (capacity + others)</th>
<th>Ease of download</th>
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<tbody>
<tr>
<td>4</td>
<td>&lt;= 1 month lag</td>
<td>5</td>
<td>3</td>
<td>2 Incomplete regional</td>
<td>4 Indirect open access in csv / xls format</td>
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Monthly or better data available with good fuel breakdown and other data

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  - Capacity, demand (in MW), outage and load factor (incl. demand-side management) data also included; no financial data
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Egypt has some electricity production data available, but it is limited by publishing lag and frequency at which it becomes available, as well as the granularity of reporting.

The Egyptian Electric Holding Company (EEHC) - the Egyptian national electricity utility - publishes electricity data in its annual financial reporting, available from the Ministry of Electricity and Renewable Energy website, with the following characteristics:

- Reported data is highly detailed, broken down by plant level, with additional information on capacity, efficiency, investment and revenue, load factors and transmission losses, among other metrics.
- However, the annual reports are published by financial year (July - June), which are difficult to work with, and can thus cause a ≥1 year lag in availability of data (the most recent report available, at the time of writing, covered data up to June 2020).
- Reports are free to download, but in pdf format over multiple pages, and are thus difficult to aggregate and analyse.

Some data is also available from the Ministry website [here](#), but is old, very high-level and rarely updated.

### Overall Score:

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<tr>
<td>1 &gt; 1 year lag</td>
<td>1 Yearly by financial year</td>
<td>3 Some disaggregation of fuels</td>
<td>4 Plant Level</td>
<td>4 3 additional cat's or capacity + 1 other</td>
<td>2 Challenging to access / pdf format</td>
</tr>
</tbody>
</table>

Little and / or low quality and / or long lag data available.
Algeria has some electricity production data available, but it is limited by publishing lag and frequency at which it becomes available, as well as the level of fuel disaggregation.

Algeria's Ministry of Energy and Mines publishes annual energy balances, available from its website [here](#):

- Most recent report available at the time of writing was for the year 2019, published in 2020 (unclear when), implying minimum 1 year lag in availability
- Data is published with plant breakdown, but with only high-level fuel breakdown, and it is unclear whether the data is representative of the entire energy sector, or only state-owned generation
- Capacity data is also included, but no other electricity data metrics are published

Other sources checked for data include CEREEFE (Commissariat aux Énergies Renouvelables et à l’Efficacité Énergétique)

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**Overall Score:** 1 / 5

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<tr>
<td>1</td>
<td>Yearly by calendar year</td>
<td>Only high-level fuel split (e.g. &quot;thermal&quot;)</td>
<td>Plant Level</td>
<td>2 additional cat's or capacity</td>
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Little and / or low quality and / or long lag data available
Morocco

Overall Score: 2 / 5
Annual available data with < 1 year lag, mostly high-level or difficult to access

- Morocco has some electricity production data available, with < 1 year publishing lag and annual granularity.
- The Moroccan Ministry of Energy Transition and Sustainable Development maintains the Moroccan Energy Observatory, an online portal which provides access to annual energy and electricity data:
  - The data is updated on annual basis within 6 - 12 months of the end of the preceding year
  - Annual (net) electricity production is covered, with disaggregation by fuel type (incl. net exports)
  - There is little other data, such as plant or fuel capacity, efficiency and/or losses, financial or consumption data, and no disaggregation by plant, plant-unit or region
  - Data is freely available for download in a convenient, easy-to-use csv format
  - Historic data going back to 1991 is also available
- The National Office of Electricity and Water publishes annual data on transmission and distribution, but with only very high-level generation data (no fuel or unit breakdown)
### Nigeria

**Overall Score:** 1 / 5
Little and / or low quality and / or long lag data available

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<tr>
<td>5 (&lt;=  1 week (i.e. Real-time))</td>
<td>4 Weekly or better</td>
<td>1 No fuel split</td>
<td>1 Less than regional</td>
<td>3 2 additional cat's or capacity</td>
<td>1 Difficult to access / poorly formatted</td>
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- Nigeria has limited quality electricity production data available: although grid reports are available on a daily basis, these contain only very high-level data.
- The Nigeria Electricity System Operator publishes daily reports on the Nigerian electricity grid:
  - Data includes aggregate supply, peak demand and grid frequency and stability, as well as capacity and load factors
  - However, there is no disaggregation of fuels or plant / units or detail on electricity consumption (beyond peak demand)
  - The data is published in daily pdf’s, but without aggregation or inclusion of historic data from previous days - thus data would be very difficult to aggregate and work with over longer analysis periods
- Other sources checked for data include the Nigeria Electricity Regulatory Commission
**Libya**

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<td>0 Less than regional</td>
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- Libya has no recent (> 2018) electricity data publicly available from national sources.
- The only generation data available from local Libyan sources is from the Bureau of Statistics and Census - Libya:
  - Data was published in an annual Statistical yearbook, last published online in 2015, and is very high-level (no disaggregation of generation by fuel, plant or unit)
- Other sources checked for data included:
  - Libya's [General Electricity Company](#)
  - The [Ministry of Electricity and Renewable Energy](#)
Tunisia

Overall Score: 2 / 5

Annual available data with < 1 year lag, mostly high-level or difficult to access

- Tunisia has some electricity production data available, with < 1 year publishing lag and monthly granularity, but with limited fuel coverage and sub-national disaggregation and no other electricity data metrics reported.

- The Tunisian Ministry of Industry, Energy and Mines has an open data portal which provides electricity supply data:
  - Production data is monthly and goes back to January 2018 (with annual data available for earlier years)
  - Data includes only natural gas and gasoil, with no further disaggregation, and no renewable contribution
  - Data is available up to May 2021, at the time of writing (implying 6-12 month lag)
  - No additional data metrics (e.g. capacity, net imports, consumption, etc.)
  - Data is freely available for download in xls format

- Other potential sources of data include:
  - Tunisia's Institute of National Statistics publishes annual fuel-split generation data (including hydro and wind production), downloadable in csv format, only up to 2018 (most recently updated 16 Mar 2021)
  - Tunisia's national electricity and gas utility STEG (Société Tunisienne de l'Électricité et du Gaz) publishes annual production data, but the most recent year available is 2016 (and the webpage has not been updated since 2017)
Sudan has no recent (≥ 2018) electricity data publicly available from national sources. The only generation data available from local Sudanese sources is from the Sudanese Thermal Generation Company. Data was published in an annual operational report, last published online in 2014. The report did include a detailed breakdown of generation by fuel, with additional data on capacity, but is very old.

Other sources checked for data include:
- The Sudanese Electricity Distribution Company Ltd (SEDC)
- The Sudanese Ministry of Energy & Oil

Overall Score: 0 / 5
- Publishing lag: No data available
- Time granularity: No data available
- Fuel breakdown: No data available
- Sub-national / unit data: No data available
- Additional data (capacity + others): No data available
- Ease of download: No data available
Zambia

Zambia has no electricity data that could be found from publicly available national sources. Sources checked for data include:

- The national statistics agency [ZamStats](http://www.zamstats.gov.zm) (where energy statistics were last published in 2007)
- The Zambian [Ministry of Energy](http://www.ministryofenergy.mz)</p>

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- Zambia has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The national statistics agency [ZamStats](http://www.zamstats.gov.zm) (where energy statistics were last published in 2007)
  - The Zambian [Ministry of Energy](http://www.ministryofenergy.mz)
Mozambique has some electricity production data available, from a combination of two national sources:

Firstly, the national statistics agency (the Instituto Nacional de Estatística) includes a section on electricity in its annual *Statistical Yearbook* (most recently compiled for 2020, pp 66-71), which provides:

- A breakdown of electricity production by region and consumption category, as well as imports and exports from/to neighbouring countries
- Data is provided annually, from 2016 to 2020
- This breakdown does not indicate fuel-type and does not include other data metrics (e.g. capacity)

Secondly, the national energy utility EdM (Electricidade de Moçambique) publishes annual statistical reports, with:

- Annual fuel-split data
- Additional data metrics, including capacity, system efficiency and consumption
- However the most recent publication available on the website at the time of writing was for 2015

### Overall Score: 2 / 5

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<tbody>
<tr>
<td>2 (6 month - 1 year lag)</td>
<td>2 (Yearly by calendar year)</td>
<td>3 (Some disaggregation of fuels)</td>
<td>3 (Regional)</td>
<td>1 (No additional data)</td>
<td>2 (Challenging to access / pdf format)</td>
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</tbody>
</table>

Annual available data with < 1 year lag, mostly high-level or difficult to access
Ethiopia has no electricity data that could be found from publicly available national sources.

Sources checked for data include:
- The state-owned generation company [Ethiopia Electric Power](https://www.ethiopiapower.com)
- The state-owned transmission and distribution utility [Ethiopian Electric Utility](https://www.ethiopian-electric.com)
- The Ethiopian [Ministry of Water and Energy](https://www.minwaterenergy.gov.et)
- The Ethiopian [Central Statistics Agency](https://www.escb.gov.et)
Angola has no electricity data that could be found from publicly available national sources.

Sources checked for data include:

- The national electricity distribution utility [ENDE](http://ende.angola.gov.ao) (Empresa Nacional de Electricidade de Angola)
- The Angolan [Ministry of Energy and Water](http://www.ministeriodeenergia.gob.ao)
- The national statistics agency [Instituto Nacional de Estatística](http://www.ine.gov.ao)
Kenya

Kenya has good national electricity production available, with \( \leq 6 \) month lag and monthly granularity.

- The Kenya National Bureau of Statistics (KNBS) publishes monthly electricity generation and import/export data as part of the monthly Leading Economic Indicators publications:
  - Electricity generation data is reported monthly and disaggregated by fuel group, with fossil fuels grouped under “thermal” generation, and renewable generation further broken down into solar, wind, hydro and geothermal
  - Electricity trade data shows monthly imports and exports of electricity from Kenya’s neighbouring countries
  - Monthly data is available from Jan-2020 through Oct-2021; the most recent publication, covering October 2021, was released in December 2021.
  - Generation data is not further disaggregated by region, plant or unit level, and does not include capacity data
  - Although not in csv format, data is presented in neat pdf tables and is freely available for download off the KNBS website

- Other sources checked for data include:
  - The Ministry of Energy
  - The state-owned electricity generation utility KPLC (Kenya Power)
  - The state-owned electricity transmission company KETRACO (Kenya Electricity Transmission Company)

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**Overall Score:** 3 / 5

Better-than-annual granular data available with some fuel breakdown + other data

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<tbody>
<tr>
<td>3</td>
<td>Monthly</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
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</table>

- <= 2-6 month lag
- Monthly
- Ember-level fuel disaggregation
- Less than regional
- 1 additional category (not capacity)
- Challenging to access in csv / xls format
Ghana

Overall Score: 3 / 5

Better-than-annual granular data available with some fuel breakdown + other data

- Ghana has good national electricity production available, with ≤ 6 month lag as well as several additional data metrics.
- The Ghana Energy Commission publishes annual energy and electricity statistics for calendar years within the 2nd quarter of the following year, which includes comprehensive data on generation, capacity, transmission and distribution, and demand profiles:
  - Annual generation data is disaggregated by high-level fuel grouping (‘hydro’, ‘thermal’ and ‘other renewables’)
  - Additional detailed disaggregation of renewable capacity is provided, by system (off-grid, on-grid and mini-grid) and technology (solar, incl. distributed and utility-scale; wind, and hydro)
  - Additional data on exports and imports, peak load profile, transmission losses, distribution and sales consumption-by-sectors, and distribution reliability is provided
  - Although not in csv format, data is presented in neat pdf tables and is freely available for download off the GEC website
- Other sources checked for data include the Electricity Company of Ghana

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<tbody>
<tr>
<td>3</td>
<td>&lt;= 6 month lag</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>3</td>
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<tr>
<td>2</td>
<td>Yearly by calendar year</td>
<td>1</td>
<td>3</td>
<td>&gt;3 additional cat's (incl. capacity)</td>
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Ghana
The Democratic Republic of the Congo (Congo-Kinshasa) has very limited electricity production data available from national sources: the one source identified is published with inconsistent frequency and long lag, and has no fuel split or sub-national disaggregation.

- The Congolese national statistics agency (Institut National de la Statistique) includes electricity capacity and production statistics in its Annual Statistic Yearbook publication.
  - The data includes gross and net production, as well as imports, exports and transmission and distribution statistics, but generation data is not specified by fuel.
  - The most recent edition available, 2020, was published in December 2021, and previous editions have been published inconsistently (only 2014, 2015 and 2017 are available on the website).
  - Data is compiled with comprehensive national statistics in a pdf report.

- Other sources checked for data include the national electricity utility SNEL (Société Nationale d’Électricité).

**Overall Score:** 1 / 5

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Little and / or low quality and / or long lag data available

- The Democratic Republic of the Congo (Congo-Kinshasa) has very limited electricity production data available from national sources: the one source identified is published with inconsistent frequency and long lag, and has no fuel split or sub-national disaggregation.

- The Congolese national statistics agency (Institut National de la Statistique) includes electricity capacity and production statistics in its Annual Statistic Yearbook publication.
  - The data includes gross and net production, as well as imports, exports and transmission and distribution statistics, but generation data is not specified by fuel.
  - The most recent edition available, 2020, was published in December 2021, and previous editions have been published inconsistently (only 2014, 2015 and 2017 are available on the website).
  - Data is compiled with comprehensive national statistics in a pdf report.

- Other sources checked for data include the national electricity utility SNEL (Société Nationale d’Électricité).
Zimbabwe has some electricity production data available, in monthly granularity, but it is limited by publishing lag and frequency at which it becomes available.

ZimStat (the Zimbabwe National Statistics Agency) includes electricity production, net imports and consumption-by-sector data in its Quarterly Digest of Statistics publications:
- The data includes production by power station, including Hwange (coal), Kariba (hydro), ‘Other Power Station’ and ‘Independent Power Producers’ (with fuel unspecified)
- The most recent quarterly digests available are from 2019, with 2020 reports (and data) unavailable at the time of writing - thus creating a > 1 year lag
- Data is compiled with comprehensive national statistics in a pdf report

Other sources checked for data include:
- The national utility ZPC (Zimbabwe Power Corporation)
- The Zimbabwean Ministry of Energy & Power Development

Overall Score: 2 / 5

Annual available data with < 1 year lag, mostly high-level or difficult to access
Côte d’Ivoire

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- Côte d’Ivoire has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The Ministry of Petroleum, Energy and Renewable Energy
  - The national statistics agency Institut National de la Statistique
Cameroon

Cameroon has no electricity data that could be found from publicly available national sources.

Sources checked for data include:
- The Ministry of Water and Energy
- The national electricity regulator (Agence de Régulation du Secteur de l’Electricité)
- The national statistics agency (INS Cameroun)

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<tr>
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<tr>
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<tr>
<td>Ease of download 0/5</td>
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Tanzania

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<th>Additional data (capacity + others)</th>
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<tbody>
<tr>
<td>1 &gt; 1 year lag</td>
<td>1 Yearly by financial year</td>
<td>3 Some disaggregation of fuels</td>
<td>3 Regional</td>
<td>4 3 additional cat's or capacity + 1 other</td>
<td>2 Challenging to access / pdf format</td>
</tr>
</tbody>
</table>

- Tanzania has some electricity production data available, but it is limited by publishing lag and frequency at which it becomes available, as well as the granularity of reporting.
- The Tanzanian Energy and Water Utilities Regulatory Authority (EWURA) includes electricity data in its *Electricity Sub-Sector Regulatory Performance Report* for the preceding Financial Year
  - The most recent report (at the time of writing) was published in March 2021 for FY 2019/20 (1 Jul - 30 Jun)
  - The report provides production statistics with some disaggregation of fuels, also disaggregated by on-grid and off-grid supply (in addition to net imports)
  - Additional data includes capacity by plant, plant availability and utilisation (denoted by fuel), and transmission infrastructure
  - Data is compiled in a pdf report
- Other sources checked for data include the Tanzanian Ministry of Energy
Senegal

<table>
<thead>
<tr>
<th>Overall Score:</th>
<th>1 / 5</th>
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</table>

- Little and / or low quality and / or long lag data available

<table>
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<th>Additional data (capacity + others)</th>
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</tr>
<tr>
<td>&gt; 1 year lag</td>
<td>Yearly by calendar year</td>
<td>Some disaggregation of fuels</td>
<td>Incomplete regional</td>
<td>2 additional cat's or capacity</td>
<td>Challenging to access / pdf format</td>
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</tbody>
</table>

- Senegal has limited electricity production data available from national sources: the one source identified is published with inconsistent frequency and long lag, and may not be comprehensive for the country’s electricity sector.

- The national electricity utility Senelec includes some electricity statistics in its annual reporting:
  - The most recent report available at the time of writing was for the year 2018 and was published in April 2020.
  - The report includes operational data on the company’s electricity production, but does not appear to cover all of Senegal’s electricity generation.
  - Production data is specified with some fuel and plant disaggregation, and capacity data is also included.
  - Data is compiled in a pdf report, and is difficult to convert to more user-friendly formats.

- Other sources checked for data include:
  - The Ministry of Petroleum and Energy.
  - The National Agency for Renewable Energies.
  - The national statistics agency (Agence Nationale de Statistique et de la Démographie).
Namibia

Namibia has good electricity production data available, from a combination of two national sources.

Firstly, the national electricity utility NamPower provides high-level generation data in its annual reports:

- The reports cover NamPower’s financial year (Jul - Jun), and the most recent report (at the time of writing) covers 2019/20
- The report provides generation data at plant-level, as well as net imports, and also includes capacity data
- The data is provided in a pdf report and is difficult to convert to more user-friendly formats

Secondly, the Namibia Statistics Agency publishes monthly Electricity Sectoral Reports, with the most recent available at the time of writing for October 2021:

- Reports are published with a 2-3 month lag and include a monthly breakdown of electricity production and imports (going back to January 2018), in pdf data tables
- The reports include no fuel-breakdown, and no other electricity data

Other sources checked for data include the Ministry of Mines and Energy

Overall Score: 3 / 5

<table>
<thead>
<tr>
<th>Publishing lag</th>
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<th>Fuel breakdown</th>
<th>Sub-national / unit data</th>
<th>Additional data (capacity + others)</th>
<th>Ease of download</th>
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</thead>
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<td>4 Plant Level</td>
<td>3 2 additional cat's or capacity</td>
<td>2 Challenging to access / pdf format</td>
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</tbody>
</table>

Better-than-annual granular data available with some fuel breakdown + other data
Uganda has good national electricity production available, with ≤ 6 month lag and disaggregation by generating unit.

The Ugandan Electricity Regulation Authority (ERA) provides detailed electricity production data in xls format on a quarterly basis:
- Data is published in quarterly granularity, with one-quarter lag - the most recent dataset (at the time of writing) was published in September 2021, and covered generation up to June 2021
- Generation data is disaggregated by plant, and the dataset also includes plant-unit capacity and fuel type (albeit with fossil fuel plants listed as ‘thermal’)
- The data is easy to access and freely downloadable off the ERA website, and is presented in user-friendly xls format

Other sources checked for data include the Uganda Electricity Transmission Company (UETCL)

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**Overall Score:** 3 / 5

Better-than-annual granular data available with some fuel breakdown + other data

<table>
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<tr>
<th>Publishing lag</th>
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<th>Fuel breakdown</th>
<th>Sub-national / unit data</th>
<th>Additional data (capacity + others)</th>
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</table>

- Yearly by calendar year
- Some disaggregation of fuels
- Unit
- 2 additional cat’s or capacity
- Direct open access in csv / xls format
Mali has no recent (≥ 2018) electricity data publicly available from national sources.

Mali’s CREE (Commission de Régulation de l’Electricité et de l’Eau) last published a compilation of national electricity statistics in 2015:

- The report provided annual generation data, with comprehensive fuel disaggregation, for years 2009 - 2015
- However more recent data could not be found from national sources

Other sources checked for data include:

- The Ministry of Mines, Energy and Water of Mali
- The national statistics agency INSTAT-Mali
Botswana

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<th>Overall Score:</th>
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<tr>
<td>&gt; 1 year lag</td>
<td>Yearly by financial year</td>
<td>Ember-level fuel disaggregation</td>
<td>Plant Level</td>
<td>2 additional cat's or capacity</td>
<td>Challenging to access / pdf format</td>
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- Botswana has limited electricity data available, from a combination of two national sources that provide detail on fuel-use at plant level, but have > 1 year lag, inconsistent publishing frequency and limited reporting granularity.
- Firstly the national electricity utility BPC (Botswana Power Corporation) provides high-level electricity production data in its annual reporting
  - Reports are published for BPC financial year (Apr - Mar) which are published up to a year after the reporting period, and include electricity generation by plant unit and by fuel type, as well as capacity
- Secondly, Statistics Botswana publishes annual Selected Environmental Indicators Digest reports
  - The most recent publication (at the time of writing) covers annual production by fuel-type from 2010 to 2018, and was published in 2021
  - The report also includes final electricity consumption by sector for the same period
- Both reports are available in pdf format only
The Republic of the Congo (Congo-Brazzaville) has very limited electricity production data available from national sources: the one source identified is published with > 1 year lag and inconsistent frequency.

The national statistics agency (INS-Congo) publishes annual statistical yearbooks, which include annual production of electricity by region:

- The most recent publication (at the time of writing) was for the year 2018, with uncertain publishing frequency, and covered the years 2014 - 2018.
- Electricity production statistics were disaggregated by region within Congo, but only with high-level fuel disaggregation.
- More recent data (beyond 2018) was not available.

Other sources checked for data include the national electricity utility E2C - Congo.
Mauritius has good electricity data availability, from two national sources, with ≤ 1 year publication lag, annual granularity and disaggregation by fuel type and generating plant (but not unit).

Firstly, Statistics Mauritius publishes comprehensive and detailed energy and water statistics in xls format, with 2020 being the most recent year available at the time of writing:
  - The statistics include energy generation disaggregated by fuel type and by region, annually for years 2010-2020.
  - Data also includes plant capacity, transmission and distribution, and consumption-by-sector.
  - Data is easily accessible and free to download in comprehensive xls format from the Statistics Mauritius website.
  - 2020 statistics were published in November 2021.

The Energy Efficiency Management Office of Mauritius also publishes electricity production data, but in pdf format and with a longer publication lag - the most recent report was published in 2020 and covers annual data up to 2019.

**Overall Score:** 2 / 5

Annual available data with < 1 year lag, mostly high-level or difficult to access.

<table>
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<th>Sub-national / unit data</th>
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<td>Plant Level</td>
<td>3 additional cat's or capacity + 1 other</td>
<td>Direct open access in csv / xls format</td>
</tr>
</tbody>
</table>
Gabon

Gabon has very limited electricity production data available from national sources: the one source identified is published with inconsistent frequency and long lag.

- The national electricity utility SEEG-Gabon (La Société d’Energie et d’Eau du Gabon) includes annual electricity production in its annual operational report, but the latest report published (at the time of writing) was for the year 2018.
  - The report includes annual electricity production data with some disaggregation of fuels.
  - High-level electricity production by intranational region is also included, along with fuel-capacity data.
  - Data is compiled in a pdf format and is not easily converted to more user-friendly formats.

- The other sources checked for data include the national statistics agency Stat-Gabon.

<table>
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<th>Little and / or low quality and / or long lag data available</th>
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<tr>
<td>Ease of download</td>
<td>2</td>
<td>Challenging to access / pdf format</td>
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</table>
Madagascar

- Madagascar has some electricity production data available, with ≤ 6 month publication lag and monthly granularity, but with limited fuel and technology coverage.
- The state-owned national electricity utility JIRAMA publishes monthly electricity production data in xls format
  - Data is published with a 3 - 6 month lag, and is disaggregated at by production plant and by fuel
  - However, the data only covers gasoil and diesel fuel generation, with no other fuel-types included
  - The data does not include capacity or any other additional categories
  - Data is published with inconsistent frequency, in xls format
- Other sources checked for data include the Madagascar Ministry of Energy, Water and Petroleum

Overall Score: 2 / 5

<table>
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<th>Publishing lag</th>
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</table>
Guinea

Guinea has good electricity production data availability, from two national sources, with ≤ 1 year publication lag, annual granularity and disaggregation by generating plant (but not unit)

The state-owned electricity utility EDG (Electricité de Guinée) published production data on its website
- Data (at the time of writing) was available for 2019 and 2020 and included a breakdown of electricity production by plant
- Fuel disaggregation is only high-level, i.e. ‘thermal’ and ‘hydro’
- Other data, including plant capacity, is not included

The national statistics agency INS-Guinée (Institut National de la Statistique) publishes annual environmental and energy statistics reports; the most recent reports available at the time of writing were from 2020 (environmental) and 2018 (energy)
- The more recent environmental report has high-level electricity production data by high-level fuel breakdown (up to 2019)
- The report also includes capacity and consumption-by-sector data

Overall Score: 2 / 5

Annual available data with < 1 year lag, mostly high-level or difficult to access

<table>
<thead>
<tr>
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<td>Plant Level</td>
<td>No additional data</td>
<td>Challenging to access in csv/xls format</td>
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</table>

- Challenging to access in csv/xls format
Niger has some electricity production data available, from one national source, with < 1 year publication lag, annual granularity, and partial disaggregation by fuel type.

The national electricity utility NIGELEC (Société Nigérienne d’Électricité) publishes annual operational reports:
- Data includes annual production data for 2019 and 2020, with some disaggregation by fuel and region
- The report also includes high-level consumption data, but no capacity data
- Data published in a pdf report, and is not readily converted to more user-friendly formats
- The most recent report available at the time of writing was for 2020, and was published in May 2021

Other sources checked for data include:
- The national statistical agency Stat-Niger (which has only very high-level electricity production data in its 2020 report)
- The Ministry of Energy

Overall Score: 2 / 5
Annual available data with < 1 year lag, mostly high-level or difficult to access
Burkina Faso

Burkina Faso has very limited electricity data available, with only one potential national source identified.

The national statistics agency INSD (Institut National de la Statistique et de la Démographie) includes some electricity production data in its annual statistical yearbooks:

- The most recent report available at the time of writing was for 2020, published in late 2021
- The reports includes high-level electricity generation data for the years 2009 - 2020, with only high-level fuel breakdown ('thermal', 'hydro' and net imports)
- The report also includes high-level capacity data, and electricity distributions sales disaggregated by region
- Data is compiled with comprehensive national statistics in a pdf report

Other sources checked for data include:

- The Ministry of Energy
- The national electricity utility SONABEL
eSwatini has no electricity data that could be found from publicly available national sources.

Sources checked for data include:
- The Swazi Department of Energy
- The eSwatini Electricity Company
- The eSwatini Central Statistics Office
Togo

Overall Score: 1 / 5

Little and / or low quality and / or long lag data available

<table>
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Togo has very limited electricity production data available from national sources: the one source identified is published with inconsistent frequency and long lag, and has no fuel split or sub-national disaggregation.

The national statistics agency (Institut National de la Statistique et des Études) published a 6-year compilation of annual statistics from 2014-2019, which has very high-level annual data on production and net imports of electricity:
- Production data is disaggregated by month (from Jan 2015 - Dec 2019), but not by fuel or plant
- It is not clear how regularly annual data will be published

Other sources checked for data include:
- The Ministry of Mines and Energy
- The national electricity utility Compagnie Energie Electrique du Togo

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Benin has no recent (>2018) electricity data publicly available from national sources. The national electricity regulator (Autorité de Régulation de l'Électricité) has very high-level data for the years 2010 - 2015 on its website, but nothing more recent or detailed could be found.

Other sources checked for data include:
- The Ministry of Energy
- The national electricity utility SBEE (Société Béninoise d’Énergie Electrique)
- The national statistics agency (Institut National de la Statistique)
Malawi has limited electricity production data available from national sources: the one source identified is published with long lag and, although it has monthly granularity, it does not provide any fuel or sub-national disaggregation.

The Malawi National Statistical Office includes very high-level electricity production and sales data in its monthly and quarterly statistical bulletins.

- Monthly reports (with an up-to-6 months publishing lag) provide only aggregate and sales data from one year prior to the report release date (e.g. the Aug 2021 bulletin published production data from Sep 2020).
- Quarterly reports provide a historic monthly breakdown going back to January 2017, but have a similar year-long lag to the monthly data.
- Neither data source provides any fuel breakdown, capacity or other data.
- In both cases, the data is compiled with comprehensive national statistics and published in a pdf report.

Other sources checked for data include:
- The national electricity utility ESCOM (Electricity Supply Company of Malawi)
- The Malawi Energy Generation Agency
- The Malawian Department of Energy

Overall Score: 1 / 5  
Little and/or low quality and/or long lag data available

<table>
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</table>

Challenging to access / pdf format
Equatorial Guinea

Equatorial Guinea has limited electricity production data available from national sources: the one source identified is published with long lag and, although it has monthly granularity, it does not provide any fuel or sub-national disaggregation.

The national statistics agency INEGE (Instituto Nacional de Estadística de Guinea Ecuatorial) includes some electricity production data in its annual statistical yearbooks:

- The most recent report available at the time of writing was for 2020
- The report has only monthly electricity consumption data for 2018 and 2019 and has no production, capacity or other relevant data

Other sources checked for data include:

- The national electricity utility SEGESA (Sociedad de Electricidad de Guinea Ecuatorial)
- The Ministry of Industry and Energy
- The Ministry of Mines and Hydrocarbons

Overall Score: 1 / 5

Little and / or low quality and / or long lag data available
Lesotho has some electricity production data available, but it is limited by publishing lag and the granularity of reporting.

The Lesotho Bureau of Statistics publishes annual energy reports, the most recent of which (at the time of writing) was available for the financial year 2019/2020:

- The report provides monthly fuel-split data for the financial year from Apr-2019 to Mar-2020, and was published in mid 2021; thus while the data is reported in monthly granularity, it is still aggregated on a financial (not calendar) year basis.
- There is some fuel-disaggregation, with electricity production split by diesel and hydro, along with net imports (mainly from South Africa).
- Electricity consumption data by sector is also included, however capacity data is not available.

Other sources checked for data include:

- The Ministry of Energy and Meteorology
- The national electricity utility Lesotho Electricity Company

Overall Score: 1 / 5

<table>
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<td>4 Plant Level</td>
<td>3 2 additional cat's or capacity</td>
<td>2 Challenging to access / pdf format</td>
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</table>
Rwanda

- Rwanda has good electricity production data available, with detailed fuel disaggregation and ≤ 6 month publication lag, but is aggregated over financial year, rather than calendar year or higher granularity.
- The national electricity utility Rwanda Energy Group publishes comprehensive electricity data in its annual reporting, with the most recent report available (at the time of writing) for the 2020/21 financial year:
  - Electricity generation data includes detailed breakdown of fuel-types (incl. peat-to-power generation)
  - Other electricity data metrics include capacity, demand, electricity access, plant efficiencies and load factors, tariffs and transmission data
  - The 2020/21 report was published on the website in September 2021, one quarter after FYE on 30 Jun; historic reports available on the website suggest consistent, annual publication.
- Other sources checked for data include the National Institute of Statistics of Rwanda.

Overall Score: 2 / 5

- Annual available data with < 1 year lag, mostly high-level or difficult to access

**Publishing lag** | **Time granularity** | **Fuel breakdown** | **Sub-national / unit data** | **Additional data (capacity + others)** | **Ease of download**
---|---|---|---|---|---
3 | 1 | 5 | 2 | 5 | 2
<= 2-6 month lag | Yearly by financial year | Better-than-Ember (e.g. "rooftop solar") | Incomplete regional | >3 additional cat's (incl. capacity) | Challenging to access / pdf format

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Mauritania

**Overall Score:** 1 / 5

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<th>Fuel breakdown</th>
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<td>2  Yearly by calendar year</td>
<td>1  No fuel split</td>
<td>3  Regional</td>
<td>1  No additional data</td>
<td>2  Challenging to access / pdf format</td>
</tr>
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</table>

- Mauritania has very limited electricity production data available from national sources: the one source identified is published with inconsistent frequency and long lag, and has no fuel disaggregation.
- The national statistics agency (Agence Nationale de la Statistique et de l'Analyse Démographique et Économique) includes some high-level electricity production data in its annual statistics yearbooks:
  - The most recent report available at the time of writing was for 2019, and was published in November 2020
  - The report included monthly electricity production data between Jan-2017 and Dec-2019, but did not include any fuel breakdown; generation data was also reported in gross, not net, terms
  - No other electricity data metrics, such as capacity or net imports, were included
- Other sources checked for data include:
  - The national electricity utility SOMELEC (Société Mauritanienne d'Electricité)
  - The Ministry of Petroleum, Mines and Energy
South Sudan

Overall Score: 0 / 5

- No publicly available data

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- South Sudan has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The South Sudanese Ministry of Electricity, Dams, Irrigation and Water Resources (no website)
  - The South Sudan Electricity Corporation (no website)
  - National statistics agency, the [National Bureau of Statistics for South Sudan](https://www.nbs-southsudan.org)
Eritrea has no electricity data that could be found from publicly available national sources.

Sources checked for data include:
- The Eritrean Ministry of Mines and Energy
- The Eritrea Electricity Corporation
- The Eritrea National Statistics Office
- (none of these had a website available at the time of writing)
Cabo Verde

Overall Score: 0 / 5

- No publicly available data

<table>
<thead>
<tr>
<th>Publishing lag</th>
<th>Time granularity</th>
<th>Fuel breakdown</th>
<th>Sub-national / unit data</th>
<th>Additional data (capacity + others)</th>
<th>Ease of download</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

- Cabo Verde has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The Ministry of Industry, Commerce and Energy
  - The national electricity utility Electra
  - The national statistics agency (Instituto Nacional de Estatistica)
Burundi has good national electricity production available with ≤ 6 month lag and monthly granularity.

The national statistics agency [Institut de Statistiques et d’etudes economiques du Burundi](https://www.statburundi.org/) publishes quarterly statistical bulletins, with monthly electricity production and consumption data disaggregated by high-level fuel type, and by region:

- The most recent report available at the time of writing was for [Q3-2021](https://www.statburundi.org/), published in November 2021, and included monthly electricity production data from Jan-2018 to Sep-2021
- Production data is split into hydro and thermal categories, without more detailed fuel-breakdown
- Electricity consumption data is reported according to Bujumbura and Gitega (major cities) and “others”
- Other electricity data metrics, such as capacity, are not included

Other sources checked for data include:

- The [Ministry of Water, Energy and Mines](https://www.mwen.gov.bi/)
- The national electricity utility [Sobelec](https://www.sobelec.com/) (Société Burundaise d’Electricité et de Climatisation)
- The [Burundi Water and Electricity Production and Distribution Authority](https://www.wedpa.org/)

<table>
<thead>
<tr>
<th>Overall Score:</th>
<th>3 / 5</th>
<th>Better-than-annual granular data available with some fuel breakdown + other data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publishing lag</td>
<td>3</td>
<td>&lt;= 2-6 month lag</td>
</tr>
<tr>
<td>Time granularity</td>
<td>3</td>
<td>Monthly</td>
</tr>
<tr>
<td>Fuel breakdown</td>
<td>2</td>
<td>Only high-level fuel split (e.g. &quot;thermal&quot;)</td>
</tr>
<tr>
<td>Sub-national / unit data</td>
<td>3</td>
<td>Regional</td>
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<tr>
<td>Additional data (capacity + others)</td>
<td>2</td>
<td>1 additional category (not capacity)</td>
</tr>
<tr>
<td>Ease of download</td>
<td>3</td>
<td>Challenging to access in csv / xls format</td>
</tr>
</tbody>
</table>

*Overall Score: Better-than-annual granular data available with some fuel breakdown + other data*
Seychelles

Seychelles has some electricity production data available, from two national sources, with \(\leq\) 1 year publishing lag, and detailed fuel disaggregation.

Firstly, the national electricity utility, the Public Utilities Corporation, includes annual electricity production data in its annual reporting
- The most recent report available at the time of writing is for 2020, with previous reports for 2017 and 2018 - but not 2019 - also available
- The report includes electricity production data by fuel group, including wind, solar PV, LFO and HFO generation

Secondly, the National Bureau of Statistics Seychelles includes monthly electricity production data with its quarterly Production Indicators publications
- Data can be downloaded as a time series in xls format, and is also aggregated quarterly in pdf reports
- However, only production data is included, with no fuel split, and no other electricity metrics

Other sources checked for data include the Ministry of Environment and Energy

Overall Score: 2 / 5

Annual available data with < 1 year lag, mostly high-level or difficult to access
Liberia

Overall Score: 0 / 5  No publicly available data

- Liberia has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The Liberian Ministry of Mines and Energy
  - The national electricity utility Liberia Electricity Corporation
  - The national statistics agency Liberia Institute of Statistics & Geo-Information Services
Somalia

Overall Score: 0 / 5
No publicly available data

- Somalia has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The Somali Ministry of Energy and Water Resources
  - The national electricity utility the Badhan Electricity Company
  - The Somali National Bureau of Statistics
The Gambia

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- The Gambia has no recent (≥ 2018) electricity data publicly available from national sources.
- The only generation data available from local Gambian sources is from the National Water & Electricity Company, published in an annual report for 2016
  - The electricity production data is very high-level, with partial fuel-split, and no other electricity data metrics (incl. capacity)
- Other sources checked for data include:
  - The Ministry of Petroleum and Energy
  - The national statistics agency the Gambia Bureau of Statistics
Sierra Leone

Sierra Leone has no electricity data that could be found from publicly available national sources.

Sources checked for data include:

- The Sierra Leone Ministry of Energy
- The Electricity & Water Regulatory Commission
- The Electricity Distribution and Supply Authority
- The national statistics agency Stats SL
Chad

Chad has no electricity data that could be found from publicly available national sources.

Sources checked for data include:
- The Minister of Petroleum and Energy
- The national electricity utility La Société Nationale d’Électricité (no website)
- The national statistics agency Institut National de la Statistique, des Études Économiques et Démographiques
The Central African Republic has no electricity data that could be found from publicly available national sources. Sources checked for data include:

- The Ministry of Energy Development and Hydro Resources
- The national electricity utility ENERCA
- The national statistics agency Institut Centrafricain des Statistiques
Comoros

Overall Score: 0 / 5
No publicly available data

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- Comoros has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The national statistics agency INSEED (National Institute of Statistics and Demographic Studies)
  - The Ministry of Production, Environment, Energy, Industry and Artisans (no website)
  - The national electricity utility MAMWE (Gestion de l'Eau et de l'Electricité aux Comores, no website)
  - The electricity regulator EDA (Électricité d'Anjouan, no website)
São Tomé & Príncipe

São Tomé & Príncipe has no recent (≥ 2018) electricity data publicly available from national sources. The only statistics found were from 2016, published by the Director General of Natural Resources and Energy (DGNRE) in a 2020 Renewable Energy and Energy Efficiency Status Report (Relatório Nacional Do Ponto De Situação de Situação de Energia Renováveis e Eficiência Energética em São Tomé e Príncipe)

- Electricity production data is reported annually, with high-level fuel split ('thermal' and 'hydro')
- Electricity consumption is also reported by sector

Other sources checked for data include:
- The national electricity utility EMAE (Empresa de Água e Electricidade)
- The national statistics agency Instituto Nacional de Estatística

Overall Score: 0 / 5

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</table>

No publicly available data
Djibouti has no electricity data that could be found from publicly available national sources.

Sources checked for data include:
  - The national electricity utility EDD (Electricité de Djibouti)
  - The National Institute of Statistics of Djibouti (no website)
Guinea-Bissau

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- Guinea-Bissau has no electricity data that could be found from publicly available national sources.
- Sources checked for data include:
  - The national electricity utility EAGB (Eletricidade e Águas da Guiné-Bissau),
  - The Ministry of Natural Resources and Energy (no website)
  - The national statistics agency Stat-Guine-Bissau