



AFREC

African Energy
Commission



DIAGNOSTIC REPORT AND ACTION PLAN

JULY 2025

*Prepared for the Ministry of Energy
& Water Resources of Somalia*



**Support program for African Union
member states (MS) and regional
economic communities (RECs) for
the improvement or establishment
of the national or regional energy**

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MESSAGE OF ACKNOWLEDGMENT FROM THE EXECUTIVE DIRECTOR OF AFREC —

The initiative of the African Energy Commission (AFREC) to support African Union (AU) Member States in establishing and strengthening National Energy Information Systems represents a strategic milestone for the sustainable development of Africa's energy sector. Reliable, credible, timely, and comprehensive energy data are indispensable for effective policy formulation, sound investment planning, and the successful implementation of national, regional and continental energy strategies.

This five-year diagnostic report and action plan provides a comprehensive overview of the national energy information system and proposes strategic actions for strengthening human resources capital, infrastructure and the financial requirements to modernise energy information systems. By enhancing national energy information systems, AFREC seeks to empower Member States with modern tools that support evidence-based decision-making and improve the monitoring and evaluation of energy policies, programmes, and projects.

Strengthened energy information systems will play a critical role in accelerating progress toward universal access to modern, affordable, and reliable energy services in line with Sustainable Development Goal 7 of the 2030 Agenda for Sustainable Development and African Union agenda 2063. They will also contribute to advancing Africa's broader aspirations for energy security, regional integration, and economic transformation.

On this note, the African Energy Commission expresses its sincere appreciation to the Ministries of Energy from the 16 Member States which include: Chad, Cameroon, Central African Republic, Djibouti, Eswatini, Ethiopia, Equatorial Guinea, The Gambia, Liberia, Mauritania, Mozambique, Senegal, Sierra Leone, Somalia, Togo, and Tunisia. AFREC further extends its appreciation to the national coordinators, institutions, experts, and relevant stakeholders from the participating Member States whose engagement, cooperation, and commitment was invaluable throughout the preparation of this report.

With strong political commitment and sustained collaboration among Member States, regional institutions, and development partners, the coming years present a unique opportunity to modernize and harmonize energy data systems and advance evidence-based energy planning across Africa.

The African Energy Commission (AFREC) is a specialised energy agency of the African Union (AU), mandated to develop the African energy sector through the facilitation, coordination, harmonization, protection, conservation, development, promotion of rational exploitation, commercialization, and integration of energy resources in Africa.

It engages actively with a broad network of experts and partners in the 55 AU member states, ensuring that all energy initiatives align with the future development of the energy sector in Africa and the pursuit of building 'the Africa We Want'.

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ACRONYMS

AFREC	African Energy Commission
AU	African Union
DISCO	Distribution Companies
EB	Energy Balance
EBS	Energy Balance Studio
EEC	Energy Efficiency and Conservation
FTE	Full-time equivalent
GW(h)	GigaWatt(hours)
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
IPP	Independent Power Producer
IRENA	International Renewable Energy Agency
IRES	International Recommendations on Energy Statistics
ISIC	International Standard Industrial Classification
IT	Information Technology
J	Joules
ktoe	Thousand tons of oil equivalent
l	Litres
LPG	Liquified Petroleum Gases
MAED	Model for Analysis of Energy Demand
MoEWR	Ministry of Energy and Water Resources
MoPMR	Ministry of Petroleum and Mineral Resources
MoP	Ministry of Planning
MOU	Memorandum of Understanding
MT	Metric tonnes
Mtoe	Million tons of oil equivalent
NEIS	National Energy Information Systems
NOIC	National Oil Infrastructure Company
REC	Regional Economic Communities
SADC	South African Development Community
SIEC	Standard International Energy Classification
SWOT	Strengths, Weaknesses, Opportunities, Threats
TWG	Technical Working Group
UNSD	United Nations Statistics Division
NBS	Somalia Bureau of Statistics

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1 EXECUTIVE SUMMARY



The **National Energy Information System (NEIS) Diagnostic Report and Action Plan** was developed with the support of AFREC and in close collaboration with the AFREC National Focal Points (NFPs) and the Ministry of Energy and Water Resources of Somalia (MoEWR).

The objectives of the support are to (1) conduct a diagnostic analysis of energy statistics, (2) recommend specific activities to improve energy statistics and reinforce or establish a NEIS, and (3) generate a high-level action plan that identifies the resources and timelines required for implementation of the recommended actions. The program also provides a support at regional level to encourage the emergence of an efficient cooperation between AFREC and Regional Economic Communities (REC).

1.1 RESULTS OF THE DIAGNOSTIC

Since late 2024, Somalia has a functioning NEIS focusing on electricity data, although the country had previously released energy statistics covering power and petroleum products, with estimated data for biomass.

The table below describes the primary characteristics of Somalia energy statistics program as identified during the diagnostic assessment in Section 3 of this document.

Item	Diagnostic results
Institutions and legal environment	• Since 2024, the recently established NEIS has improved the collection and production of energy statistics • Collaboration between governmental entities (ministries, NSO) and private companies is deemed to be efficient • MoEWR has direct and good contacts with other international organizations (AFREC, IEA, UN)
Human and material resources	• The current statistics team in the MoEWR section is experienced and well trained, especially with the electricity and oil & gas sub-sectors • Team members generally tend to stay in place for several years, although there is occasional turnover (career growth opportunities, transfers within the institution). To institutionalize knowledge within the team, they focus on several strategies handovers, internal training and documentation • The team members need additional training on biomass sub-sectors, end-uses breakdown, advanced technical expertise, especially in areas like data analytics, advanced energy modeling, and forecasting
Data collection	• The MoEWR is collecting power data while the MoPMR is in charge of petroleum data. The NBS, under MoP, collects some data on biomass (survey). • Biomass data is limited and should be reinforced by more surveys • Energy end-uses and energy efficiency data is limited and should be reinforced by surveys and expanded secondary data collection
Data processing	• The MoEWR uses a combination of tools in the preparation of the energy balance, including sectoral models, spreadsheets for data analysis (Excel), MySQL for database management, and MATLAB for advanced modelling • The MoEWR is also using the AFREC Excel-based questionnaire • The historical energy balance data in Somalia is stored on government servers, cloud platforms, external hard drives, and shared network drives. Data access is controlled, and security measures are in place to protect the integrity of this information
Quality assurance and validation	• The data validation process for the energy balance in Somalia is comprehensive, involving internal checks, external cross-verification, field validation, and collaborative efforts with government institutions and regional bodies
Dissemination and analysis	• The energy balance and NEIS statistics in Somalia are disseminated through multiple channels, including web portals, publications, workshops, media, emails, conferences, and institutional websites. These varied dissemination methods ensure accessibility to different stakeholders such as government officials, donors, energy experts, academia, and the public. • However, there is a lack of public dissemination (reports or database) both from the MoEWR and the NBS.

Table 1 : Summary of the main results of the diagnostic assessment

Strong collaboration between national governmental institutions and international organizations constitutes the major strength in Somalia's statistics program.

The recent establishment of a NEIS (2024) is an important step in reinforcing the energy statistics programme of Somalia, provided that officers are sufficiently trained and the team benefits from sufficient resources to support stakeholder sensitization and dissemination activities.

Biomass and energy end use data also constitutes a major challenge for energy statistics in Somalia and estimated data risks biasing both the statistics and subsequent policy decisions regarding such key issues as clean cooking strategy and energy efficiency policy, among others. These have been partially remedied since the last Somalia Integrated household Budget Survey (SIHBS) in 2022, improving primary data collection on biomass through sample surveys. However, the MoEWR statistics team still reports some issues on biomass data collection and difficulties to fill in the gaps in the data, which would require to enhance the design of the NBS study and develop estimation methodologies.

1.2 RECOMMENDATIONS

Specifically, the diagnostic assessment concludes with five recommendations to reinforce energy statistics in Somalia to align with international recommendations and improve the current NEIS:

1 – Streamline and improve cooperation between MoEWR and NBS

→ A. Streamline participation in data activities at MoEWR and enhance interinstitutional linkages

by engaging in routine discussions with NBS to set the yearly production agenda and assign an FP for institutional collaboration on data issues, particularly on biomass and end-uses data through NBS surveys.

→ B. Improve data collection on biomass supply and demand

The diagnostic reveals relative gaps in biomass data: the national survey covering households and enterprises should be improved and conducted on a regular timeline. Improving biomass data will also require training for the MoEWR and NBS Energy Statistics Team to improve sectoral knowledge, technical coordination with bio-energy experts within NBS, and continued outreach to new stakeholders to improve secondary data collection on these sub-sectors.

→ C. Improve data collection for energy end-uses, in particular for petroleum products

by adding or adapting relevant questions on energy to the NBS household or enterprise surveys.

→ D. The Somalia National of Statistics (NBS) and the MoEWR must collaborate closer to harmonize data collection methodologies

integrate energy statistics into national surveys and censuses, and implement quality control mechanisms.

→ E. The MoEWR can ensure compliance with international statistical standards

while the NBS can provide sector-specific expertise in developing energy survey questionnaires.

→ F. Establishment of shared databases

and automated data exchange protocols for real-time integration.

2 – Further enhance data quality and put in place a structured validation process

→ A. Reinforce data exchanges

Over the short term, this consists of strengthening data-sharing mechanisms to improve the reliability and accessibility of information. This can be implemented by standardizing reporting protocols and developing standard templates and methodologies for data collection and reporting to ensure consistency. At a later stage, an interagency data exchange platform can be created where a digital platform gathers all relevant data providers and shares and validates data in real time.

→ B. Instate formal data verification and validation processes

Implementing quality control measures to ensure data accuracy before integration into the NEIS. This could be achieved by instating validation workshops that group all key stakeholders from national and institutional bodies to potential private sector actors to share finalized data outputs and relevant analyses, welcoming their feedback to help identify data gaps, inconsistencies, and areas of further improvement.

3 – Upgrade statistical tools to the requirements of a NEIS

→ A. Develop data management capacity

As data quality and coverage is expected to expand, the statistics team at MoEWR will need to manage ever larger and more complex data sets. All members of the Energy Statistics Team should receive basic training in the best practices and techniques for data management in Excel, and one member of the team should be selected as a focal point for more in-depth training on database management and tools to anticipate potential changes in the statistical infrastructure in the future.

→ B. Elaborate a tool for MoEWR to facilitate compiling and tracking statistics

including visualization and analytics. Technical management of the tool should be housed in MoEWR. Still, access should be granted to NBS and other identified end-users for improved cooperation and transparency with both organizations involved in the tool's specification.

4 – Structure and Facilitate Data Dissemination

→ A. Continue to publish annual reports and release public dataset for public dissemination

Until 2024, dissemination of energy statistics by MoEWR occurred only through data provision to international organizations including AFREC, and ad hoc contributions to projects in the Ministry. In 2024, NBS published its first Statistical Abstract, giving access to some energy data (electricity by uses, final consumption by fuel, petroleum imports). Dissemination of energy statistics will raise the visibility of the team to external stakeholders, facilitate users' access to statistics and information on the energy sector, and reduce the time spent by the team preparing responses to ad hoc internal data requests. As a first step, the team could focus on the improvement of the annual statistical abstract and the publication of a standard dataset (supply and demand data) for public on the Ministry's website or NBS's website, before expanding to other publication types or printed pamphlets or reports. Attention should however be paid to avoid a duplication of information between NBS and MoEWR.

→ B. Build capacity on energy economics and data analysis to expand the analytical output of the team

Currently the team reports lacking time and skills to invest in using energy statistics to generate analytical output (sectoral policy analyses, forecasts, etc.) in support of policy making or public debate outside of contribution to specific MoEWR projects. Over the longer term, as data quality and statistics tools improve, the team can expand its outputs to include these thematic contributions if they receive sufficient training.

→ A. Raise the profile of energy statistics by holding an annual national workshop to present the Energy Balance and headline statistics for energy

This should include the leading public sector stakeholders, private sector, civil society, and press and be hosted by MoEWR.

5 – Consolidate and perpetuate energy statistics processes

→ A. Review and evaluate statistics process, outputs, and training needs on a regular basis

This process should aim to identify any bottlenecks or challenges that require action in the statistics process, assess the compliance of statistical outputs with international standards and the requirements of national policymakers, and identify any training or capacity building needs in the team that should be addressed. A review should be conducted every 3-5 years.

1.3 ACTION PLAN

Section 4 of this document develops a five-year action plan to achieve the recommendations and establish a fully functional NEIS aligned to the extent possible with international recommendations and best practice. The plan comprises of 24 prioritized actions spread across four implementation phases over the period 2025- 2030.

While many actions can be achieved by the existing team with few additional resources, the implementation of the full action plan is expected to require approximately US\$100,000 in financial resources to implement. These costs are primarily service costs to make improvements to the statistical infrastructure and tools. The plan also identifies approximately US\$ 2500 in annual recurring costs, primarily to cover the cost of holding annual data validation and dissemination/sensitization workshops, as well as printing costs to support dissemination.

No additional human resources are expected to be required to support the development of the current NEIS in Somalia in the immediate term. Nevertheless, while the energy data and planning team within the MoEWR currently consists of four full-time staff members and has been able to manage key tasks - such as data collection, coordination with stakeholders, and development of energy information systems - feedback shows that the current capacity is not sufficient to meet the growing demands of the sector in the long term.

As the Ministry moves toward full implementation of the Energy Information Management System (EIMS) and expands activities under national energy reforms, additional human resources will be needed. Specifically, the team would benefit from:

- More technical staff for data analysis, GIS, and modelling;
- Field officers for ground-level data collection and verification;
- IT support for maintaining digital systems;
- Sector specialists for biomass, renewables, and energy access.

Strengthening the team would significantly improve the quality, timeliness, and coverage of energy data across the country.

Somalia has identified the following “quick win” items - or actions that will have significant impact with minimal resources - as top priority over the coming 12 months:

- Foster closer collaboration between the MoEWR and the NBS in areas like data and methodologies harmonization, integrating an energy questionnaire into national surveys and future census (Actions 1.D).
- Reinforce data exchanges between institutions and stakeholders by setting up standard templates for data collection and assigning formal Focal points in each institution (Actions 2.A).
- Instate a formal data verification and validation process through an annual validation workshop gathering all key stakeholders and data providers (Actions 2.B).
- Undertake basic dissemination activities (Actions 4.C): Publish an annual Energy Bulletin report and data set to the NBS or MoEWR website for the next annual statistics cycle, supported by a launch workshop to raise the profile of energy statistics with key stakeholders, at an estimated cost of US\$ 1500.

Somalia has also identified the following structuring projects, which require more substantial resources and planning than the quick win actions, as highest priority in the coming 24-36 months:

- Select and train 1-2 team members in more advanced statistics, energy economics, and analytical methodologies.
- Reinforce technical and logistical capabilities at the MoWE, with training planning for at least two team members on NEIS structure and design and energy modelling, as specialized training on specific areas like biomass, end-uses and energy efficiency

FIVE-YEAR ACTION PLAN TO ESTABLISH A FULLY FUNCTIONAL NEIS

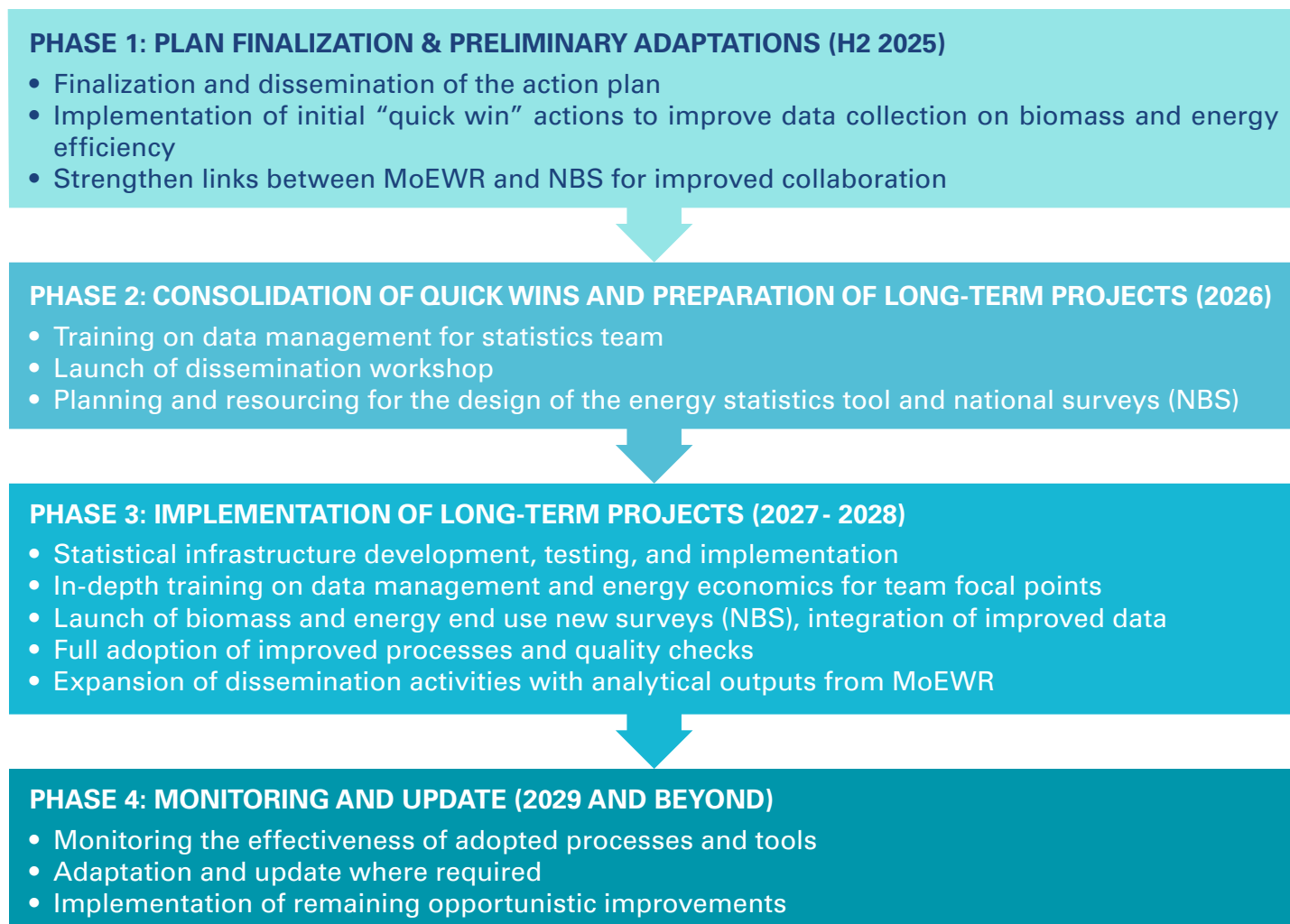


Figure 1: Action plan overview with phases and primary activities

2 COUNTRY OVERVIEW

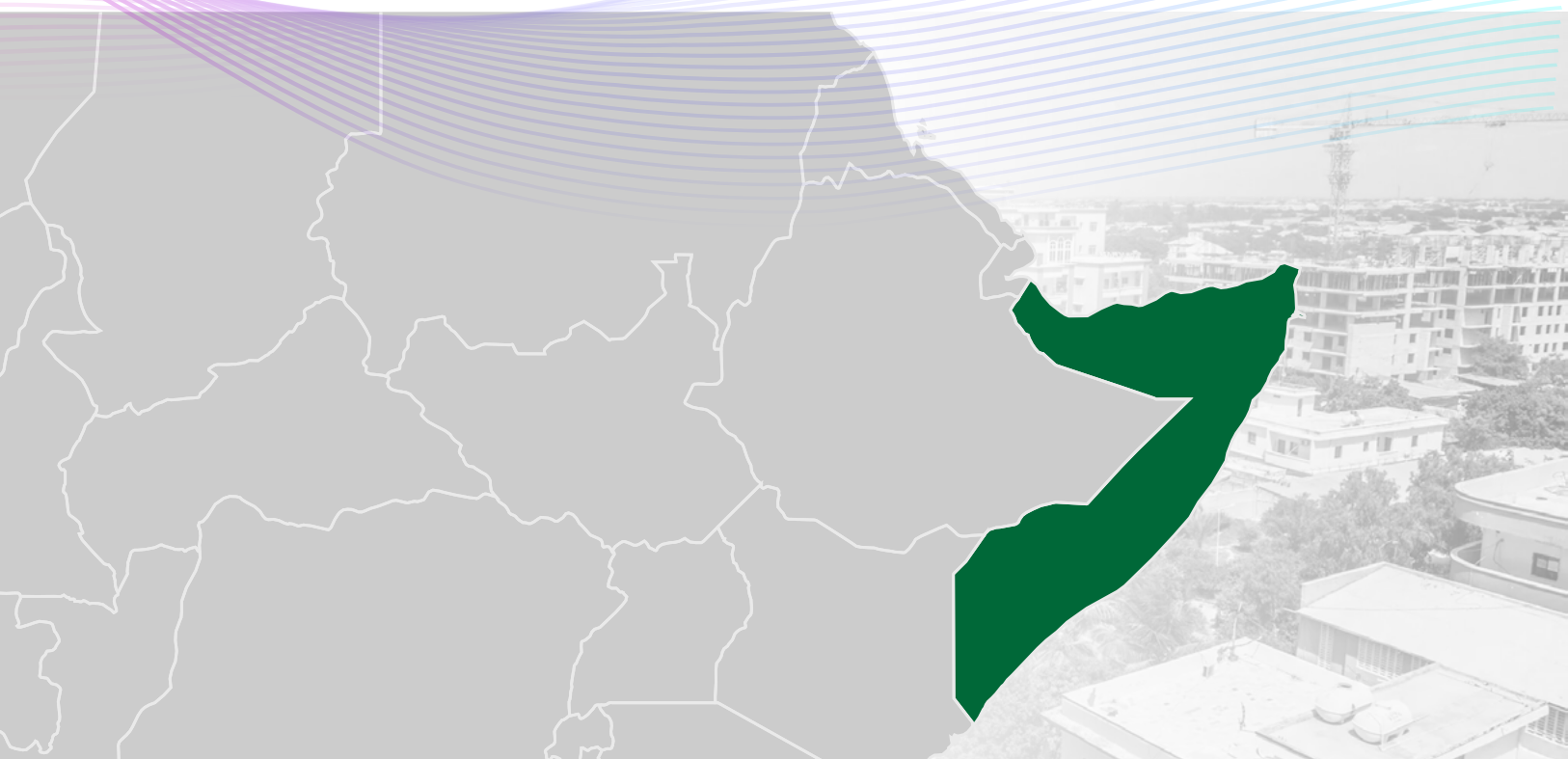


Figure 2: Regional Map - Somalia

2.1 DESCRIPTION

The Federal Republic of Somalia is a member of the African Union since 1963. In September 2024, Somalia joined the International Atomic Energy Agency (IAEA).

Somalia is an Eastern African country that covers 637,657 km² and is populated by approximately 18.36 million people (2023, World Bank). Located in the Horn of Africa and surrounded by Djibouti, Ethiopia, and Kenya, Somalia is a coastal country with semi-arid climates. The official languages are Somali and Arabic.

Since a long-term civil war started in the 80s, Somalia has faced significant economic challenges. Economic activity, which is largely informal and relies heavily on the primary sector, is volatile as it is strongly linked to climatic conditions. In 2017, drought led to an increase in food imports and a drop in livestock exports, resulting in a trade deficit representing half of the annual GDP. Somalia enjoys some of the best cell phone coverage on the African continent, with three independent networks operating throughout the country, all in private hands. Somalia has important reserves of iron ore, uranium, copper, bauxite and salt. Its proximity to countries such as Yemen and Saudi Arabia makes it a potential reserve of oil and gas, currently untapped because of the poor infrastructure and the decades of civil war.

In PPP terms, GDP per capita currently stands at 2015 US\$ 1 600¹ (2023), one of the lowest in sub-Saharan Africa. Somalia also has one of the lowest electrification rates in Africa standing at 49% since the last decade (2022, World Bank).

In 2023, the total primary energy supply was 4.5 Mtoe while final energy consumption was 3.4 Mtoe². Energy production in Somalia is limited to biomass, and to a much lesser extent, electricity (of which

¹ - Enerdata Database (Global Energy and CO2 Data)

² - Enerdata Database (Global Energy and CO2 Data)

around 90% is thermal production, coming from petroleum products such as heavy fuel oil and diesel). Since the collapse of Somalia’s central government in 1991, electricity services have been the exclusive responsibility of Somalia’s private sector (approximately 106 MW installed thermal capacity and around 40 MW of solar capacity in 2024³). Somalia has no oil or gas production and no operational refining capacity. As such, all oil products are imported.

Final energy consumption is dominated by biomass, primarily from the household sector through charcoal for cooking. From a sectoral perspective, households are by far the largest energy consumers where traditional cooking methods (firewood, charcoal) are prevalent in cooking uses (> 85% of energy sources for cooking) due to limited access to electricity in rural areas.

2.2 ENERGY STATISTICS

Energy statistics in Somalia are managed by the Ministry of Energy and Water Resources (MoEWR). Energy balance statistics have been compiled in Somalia since 2000 though no public dissemination has been found.

Since 2024, Somalia has a brand new NEIS focusing on electricity and also relies on the AFREC data template spreadsheet tools to produce yearly energy statistics. The energy statistics National Focal Point (NFP) for AFREC has been providing data to AFREC and the IEA as input for the country’s Energy Balance.

Ongoing activities	Description	Expected outcome
Ministry of Energy and Water Resources	New NEIS for electricity in 2024	- Somalia Energy Diagnostic Data Collection - Enhanced Sector Coordination and Stakeholder Engagement - Expansion of Renewable Energy Projects - Capacity Building and Institutional Strengthening

Table 2: Ongoing activities

2.3 PARTICIPATION IN THE AEIS

Somalia currently provides AFREC with energy data for inclusion in the African Energy Information System (AEIS) as shown in the table below. The most recent energy balance provided to AFREC is for the year 2022. According to the MoEWR, the AFREC questionnaires used for AEIS can be both clear in some areas but challenging in others, depending on the specific context and capacity available in Somalia.

Somalia’s Ministry of Energy and Water Resources (MoEWR) provides energy statistics to the IEA on an annual basis through dedicated questionnaires. Statistics are provided to other bodies, including UNSD.

	Energy Balance	Energy Efficiency	Power Plant Capacity	Prices and Taxes
Supplied to AFREC ?	YES	YES	YES	YES

Table 3: Data provided to AFREC

3 - NBS - Statistical abstract 2024; Irena - Renewable Capacity Statistics 2024

3 ENERGY STATISTICS DIAGNOSTIC REPORT



This diagnostic was developed in close collaboration with the AFREC National Focal Point (NFP) and the Ministry of Energy and Water Resources (MoEWR) of Somalia. The results of the assessment are based on structured interviews covering the institutions, resources, and statistical processes in place, as well as on a detailed review of the data and documentation shared by the Somalia NFP. The appendices to this document contain a bibliography and further details on the structured interviews.

The diagnostic report is organised into six thematic sections covering the institutional environment, human and material resources, and each of the major steps for energy statistics processes (data collection, data processing, and quality assurance and validation, and dissemination). Each thematic section describes the current situation and key challenges or gaps that must be addressed to improve energy statistics and align with the International Recommendations for Energy Statistics (IRES) standards. The final section of the diagnostic report takes a transversal view of the challenges faced across each of the thematic areas and proposes recommendations. These recommendations are then used to develop an Action Plan for the establishment of a fully functional NEIS in Chapter 4 of this document.

3.1 INSTITUTIONAL & LEGAL ENVIRONMENT

3.1.1 CURRENT SITUATION

The Somali Statistics Law (2020) repeals the Somalia Statistical Law no: 35 published on 18th June 1970 to harmonize it with the Somali Federal System and promote the overall efficiency of various Sectors of Statistics. This Law establishes the Somali National Bureau of Statistics (NBS) which is mandated to conduct collection, compilation, coordination, analysis, evaluation and dissemination of National Statistical Information.

The Ministry of Energy and Water Resources (MoEWR) is responsible of establishing national energy statistics and energy balances, which is mandated to, among other responsibilities:

- Collect, compile, analyse, interpret, publish and disseminate statistical information alone or in co-operation with other Government Ministries or institutions,
- Develop and maintain a comprehensive national statistics database.

The MoEWR is both responsible for consolidating energy data that has already been formatted and for manipulating and calculating energy data to fill in gaps or make adjustments where needed.

MoEWR and NBS are a single institution representing Government of Somalia.

The MoEWR serves as the lead agency for the preparation of the Energy Sector Data Report, overseeing the process, coordinating stakeholders as well as data collection and reporting across all energy sectors, reporting progress, and developing policies aligned with the National Transformation Plan (NTP 2025–2029).

NBS supports MoEWR through data collection, statistical analysis, and capacity building, ensuring evidence-based planning and accurate reporting on energy resources.

The Ministry of Petroleum (MoP) supports the MoEWR by providing key data on petroleum, while the National Bureau of Statistics (NBS) ensures data accuracy and compliance with national standards. This collaborative approach ensures a comprehensive and reliable overview of Somalia's energy landscape.

Operationally, energy statistics in Somalia are managed by a team of 4 people which collects data primarily from public and private entities. The MoEWR collects directly electricity data whereas data related to petroleum products are collected from the Ministry of Petroleum and Mineral Resources (MoPMR). Other institutions play key roles as data providers or in the final validation of statistics such as the National Statistics Office (NBS, since 2020) and Research Institutions/Universities.

The exchanges with different institutions are generally positive, with good collaboration between most departments. However, there are occasionally some misunderstandings and administrative bottlenecks, such as the need for official letters from the ministerial level or delays in receiving data from certain organisations, which remain limited to several days. These challenges can create some delays in the process, but efforts to improve coordination and streamline procedures are ongoing.

The team compiles and distributes statistics and indicators, as well as analytical reports to several international organizations (AFREC, IEA, UN).

Somalia has engaged with various technical and financial partners to develop its energy sector, including the compilation and analysis of energy balance statistics such as World Bank and USAID Power Africa.

The diagram below illustrates the institutional environment in which the statistics team operates.



Figure 3: Institutional environment

3.1.2 ASSESSMENT AND GAP ANALYSIS

Somalia’s institutional environment, in particular the strong collaboration between various governmental entities (MoEWR, MoPMR, NBS), provides a solid foundation for energy statistics.

Nevertheless, there are several challenges that must be addressed in order to support the smooth functioning of the recent NEIS in Somalia. The following table summarizes the principal issues and gaps that emerge from the diagnostic with respect to the institutional environment.

N°	Key issues/gaps	Description
1.1	Need to strengthen coordination	Foster better collaboration between institutions to ensure timely data sharing and validation. A closer collaboration between the National Bureau of Statistics (NBS) and the Ministry of Energy and Water Resources (MoEWR) should cover the following topics: 1.Data Validation: NBS helps validate energy data for accuracy, particularly in petroleum consumption. 2.Methodology Alignment: Aligning data collection methods ensures consistency. 3.Improved Reporting: Joint efforts streamline the reporting process for reliable energy statistics. 4.Capacity Building: Training programs enhance data collection and analysis skills.
1.2	Need of more official cooperation with certain entities to provide data	Occasionally, the Ministry is facing data feedback problems (response time, return rate, gaps in data). Memorandum of Understanding would be needed to formalize the commitment of all parties.

Table 4: Institutional environment gap assessment

3.2 HUMAN & MATERIAL RESOURCES

3.2.1 CURRENT SITUATION

HUMAN RESOURCES

The team of the MoEWR is composed of statisticians and electrical engineers, and has received substantial training from international institutions, including:

- Energy Statistics (IEA)
- Energy Statistics/Training of Trainers (AFREC)/AFREC Energy Data Collection Workshops

The budget for their activities is attributed on a yearly basis. Each year, a budget is allocated to cover the costs of data collection, analysis, tools, and capacity-building activities related to energy statistics and the preparation of energy balances.

Team members generally tend to stay in place for several years, although there is occasional turnover, especially due to career growth opportunities or transfers within the institution. To institutionalize knowledge within the team, they focused on several strategies: handovers, internal training and documentation. Steps have been taken to institutionalize know-how regarding the use of the new NEIS. This includes providing regular training sessions for staff, creating internal documentation and user manuals, and establishing a knowledge-sharing system to ensure that team members can effectively use and update the tools.

The team is most familiar and comfortable with the Electricity and Oil & Gas sub-sectors. There are well-established processes for collecting and analyzing data related to electricity production, consumption, and grid integration. Additionally, the oil and gas sector are well-documented, and there is a regularly work with data on imports, exports, and consumption patterns.

Name	Job title/ position & Institution	Role in the NEIS/EB	Time dedicated to NEIS/EB	Training/background
Mohamed Abdirahman Sid Ahmed	Head of Electrical Power MoEWR	NEIS Coordinator	15/10/24	Energy analysis data to assess energy production, consumption, energy efficiency, Tariff, Energy management and policy.
Mahad Muhumed Abukar	Renewable Energy Specialist MoEWR	AFREC Coordinator	01/01/23	Training in advanced data analysis techniques, including statistical methods, data visualization, and energy modeling, MAED, MESSAGE, SPLAT on Energy demand modelling and forecasting.
Adan Isak Abdirahman	Head of Statistics MoEWR	Power Plant Statistics AFREC	10/5/24	Training on the technical aspects of power plant operations, on data collection power plants (thermal, Renewable energy and their operational metrics (efficiency, capacity, power generation.
Abdirisak Mohamed Abdi	Energy information management system EIMS Officer MoEWR	AFDB	15/2/24	Developing data collecting, integrating, and standardizing data from various sources, such as meters, sensors, and external databases. Staff should be trained in data integration techniques and protocols to ensure accuracy and consistency.

Table 5: Human resources dedicated to energy statistics in MoEWR

MATERIAL & IT RESOURCES

The available material resources for energy statistics are:

- **Offices:** The team has sufficient office space within the MoEWR.
- **Computers & IT infrastructure:** They use a combination of tools in the preparation of the energy balance, including sectoral models, spreadsheets for data analysis (Excel), MySQL for database management and energy modelling software (such as MATLAB). Each member of the team is equipped with a personal computer. The training for the team on these tools was fully sufficient.
- **Phone, Internet:** Offices are equipped with internet connections.

3.2.2 ASSESSMENT AND GAP ANALYSIS

The MoEWR statisticians have relevant background in statistics and have received appropriate training on the tools and methodologies for compiling energy statistics. However, statistics officers highlighted a need for additional training on specific sectoral issues for end-uses and biomass (biomass supply and demand estimation methodologies).

The resources available to conduct the work on the NEIS/energy balances are somewhat limited in terms of both time and skills. While they have the necessary tools and basic infrastructure in place, there are several challenges, summarized in the table below.

The team is fairly comfortable with the energy balance methodology, but there are certain areas that pose difficulties, particularly in the country's context:

- **Biomass Data:** Refining data on biomass is challenging, as much of its use, especially in rural and informal sectors, is unrecorded. This makes it difficult to accurately estimate total biomass consumption and its impact on the energy balance.
- **End-Use Data:** Accurately tracking energy consumption by end-use sectors (e.g., residential, industrial, transport) can be complex due to gaps in data and variations in reporting practices across different sectors.

The following table summarizes the principal issues and gaps that emerge from the diagnostic with respect to human and material resources.

N°	Key issues/gaps	Description
2.1	Time Constraints	The workload for preparing energy balance statistics is often high, and with multiple ongoing initiatives, it can be difficult to allocate enough time to ensure the highest level of accuracy and timeliness in reporting.
2.2	Skills Gap	Although they have skilled personnel, there is a need for more advanced technical expertise, especially in areas like data analytics, advanced energy modelling, and forecasting. This gap sometimes limits their ability to fully leverage modern tools and methodologies.
2.3	Training needed on specific sectoral issues and methodologies	Statistics officers are generally trained in statistics and learn about the energy sector on the job. Officers highlighted a need for additional knowledge on methodologies/data processing related to specific issues in the oil and biomass sub-sectors. These requirements relate to general knowledge on the structure and value chains for these products, as well as treatment of stock changes, estimation of specific calorific values for oil products, and biomass supply and demand estimation.

Table 6: Human and material resources gap assessment

3.3.1 CURRENT SITUATION

The statistics team of the Ministry of Energy and Water Resources (MoEWR) collects data primarily through two public agencies that are mandated to collect and compile primary source data: the Ministry of Petroleum and Mineral Resources (MoPMR) and the National Bureau of Statistics (NBS).

The National Statistics Department (NSD), which operates under the Ministry of Planning, Investment, and Economic Development, is responsible for consolidating and managing national statistics. Its primary mandate is to coordinate and oversee the collection, analysis, and dissemination of data across various sectors, including demographic, economic, and social statistics. Regarding energy, the NSD does indeed include energy statistics within its scope. The department is involved in compiling data related to energy consumption, production, and other relevant indicators as part of its broader responsibility to ensure comprehensive national statistics that support policy development and planning. However, detailed sector-specific data on energy may also involve other institutions, such as the MoEWR, which directly governs energy policy and infrastructure in Somalia.

There is no law or formal agreement such as a memorandum of understanding (MoU) that structures the collaboration between institutions regarding data collection or statistics compilation.

In Somalia, data used to generate the energy balance are generally collected and produced annually, with the reference year often being N-1 (1-year behind). Energy data, including production, consumption, and other key indicators, are typically gathered on an annual basis to provide a comprehensive overview of the country's energy situation. This is primarily done through surveys, reports, and data submissions from various stakeholders in the energy sector, such as government ministries, private companies, and international organizations.

As explained by the MoEWR, the process to obtain data from different sources typically follows several key steps:

- Identify Data Needs,
- Formal Requests and Correspondence,
- Organize Meetings and Collaboration,
- Access Published Reports and Documents.

Data is generally collected in Excel are the most common formats used for day-to-day data collection and storage.

For each sector, the raw data (production, import/export, transformation, end-uses) used for generating energy statistics are collected as follows:

Sector	Description of data collected and sources	Data Quality and Limitations	Format & Frequency
<i>Oil & gas</i>	Data treatment and calculations in Somalia's upstream oil and gas sector involve a variety of tasks, from exploration to production and cost analysis. These calculations include the estimation of oil and gas reserves, daily production rates, cost structures, and production forecasting. Regarding downstream oil and gas sector, data treatment and calculations consist in fuel consumption data, importation volumes, pricing structures, and supply chain logistics. MoPMR, MoEWR		Excel spreadsheets
<i>Coal</i>	There is no coal production and consumption in Somalia.	N/A	N/A

Sector	Description of data collected and sources	Data Quality and Limitations	Format & Frequency
<i>Electricity</i>	In Somalia, calculation and data treatment for electricity involves several aspects of the electricity sector, including generation, consumption, losses, access, and reliability. MoEWR		Excel spreadsheets and NEIS
<i>Biomass</i>	Biomass data is estimated from NBS surveys, of which the last one is the Somalia Integrated Household Budget Survey (SIHBS-2022). Annual growth rates are based on assumptions in the absence of annual measures.	Absence of annual measures	Survey
<i>Renewable Energy (excl. Biomass)</i>	No information.		
<i>Energy Efficiency</i>	No information.		
<i>Economic and Demographic</i>	Economic and demographic data are collected and disseminated by the NBS through surveys.		

Table 7 : Sectoral data collection sources and procedures

3.3.2 ASSESSMENT AND GAP ANALYSIS

The statistics team does not report any major difficulties obtaining the necessary data to support energy statistics, with the majority of data being readily available through well-established channels. When data is missing in the energy balance preparation, the MoEWR's team applies multiple strategies - estimation, cross-verification, secondary data, field surveys, and stakeholder engagement - to fill gaps and ensure comprehensive energy balances. These strategies help maintain data integrity and improve energy statistics over time.

Delays in publication or changes in the type of data published sometimes create delays or limitations, but these can generally be resolved by direct requests to the institution concerned.

Biomass data are limited to estimates of household uses from NBS surveys, of which last estimations come from the Somalia Integrated Household Budget Survey (SIHBS-2022). This survey has provided much improved estimates of the level of household consumption in comparison with the previous 2016 High Frequency Survey (bigger sample, higher degree of detail). Nevertheless, annual growth rates continue to be based on assumptions in the absence of annual measures. Hence, statistics would benefit from a specific and comprehensive biomass sectoral study, and priority should be attached to developing annual or at least regular surveys.

The current process works well in the following areas of data collection and reporting, collaboration between institutions and decision-making support. However, the preparing of the energy balance in Somalia comes with several challenges that can affect the quality, accuracy, and timeliness of the final output, such as:

- Data Gaps and Inconsistencies,
- Lack of Clear Institutional Focal Points,
- Limited Technical Capacity.

The MoEWR’s vision for energy balance statistics going forward is to improve the accuracy, timeliness, and accessibility of energy data to support informed decision-making, policy development, and sustainability goals. The following table summarizes the principal issues and gaps that emerge from the diagnostic with respect to data collection and potential solutions for addressing each challenge.

N°	Key issues/gaps	Description
3.1	Enhance Data Collection	Improve the coverage and consistency of data across all sectors, including informal and decentralized energy sources. One starting solution would consist in improving the lack of clear institutional Focal Points.
3.2	Upgrade Tools and Capacity	Implement more advanced tools for data analysis and invest in capacity-building for the team.
3.3	Advanced Analytics	Incorporate advanced analytical tools, such as predictive modelling and machine learning, to improve forecasting and energy planning.
3.4	Comprehensive and Integrated Energy System	Develop a fully integrated energy system that includes data from all sectors, ensuring a holistic view of the national energy landscape.
3.5	Real-time Data Access	Create platforms for real-time data access and reporting to inform policymakers and stakeholders more efficiently.

Table 8: Data collection gap assessment

3.4 DATA PROCESSING

3.4.1 CURRENT SITUATION

Since 2024, Somalia has a functioning NEIS database focusing on the electricity sector that uses MySQL and cloud-based storage as a dedicated tool for data processing. Before 2024, Somalia relied on Excel-based data storage.

The historical energy balance data in Somalia is stored on government servers, cloud platforms, external hard drives, and shared network drives. Data access is controlled, and security measures are in place to protect the integrity of this information.

Previously, data used to be collected in various thematic Excel workbooks and then consolidated into the required indicators using the AFREC questionnaires, for energy balance statistics, prices and taxes, and power plant installed capacity.

3.4.2 ASSESSMENT AND GAP ANALYSIS

The following table summarizes the principal issues and gaps that emerge from the diagnostic with respect to data processing.

N°	Key issues/gaps	Description
4.1	Challenges regarding the management, storage, or dissemination of data histories	The ministry is facing several challenges regarding the management, storage, or dissemination of data histories. These challenges can impact data accuracy, accessibility, timeliness, and the overall quality of energy balance reporting.
4.2	Data format harmonization	Historical energy balance data in Somalia are not all in the same data format. It varies across different years due to changes in data collection methodologies, reporting systems, and the organizations involved at different times.

Table 9: Data processing gap assessment

3.5.1 CURRENT SITUATION

The data validation process for the energy balance in Somalia is deemed to be comprehensive, involving internal checks, external cross-verification, field validation, and collaborative efforts with government institutions and regional bodies. These steps help ensure that the energy balance is accurate, consistent, and reflects true energy flows in Somalia. The data validation process focuses on various aspects of energy balance data, including production, consumption, imports, exports, and transformations. The validation is conducted by multiple stakeholders from internal teams, government bodies, donor agencies, and regional organizations.

Quality assurance and data validation is managed through internal checks and data validation within the MoEWR as well as through AFREC oversight.

Internal checks and validation in the MoEWR: The Ministry of Energy and Water Resources (MoEWR) is responsible for validating energy-related data. However, the process is not fully standardized or comprehensive due to capacity and resource constraints. Two types of validation are done:

- • **Performing Quality Checks** on data received from different organizations to ensure the accuracy and reliability of an energy balance,
- **Completeness Check** to ensure that all required data points are provided (e.g. energy production, imports, exports, transformation, and consumption data).

AFREC oversight: When compiled statistics and questionnaires are returned to AFREC, the institution reviews the data for any errors or inconsistencies and proposes methodologies for

- estimating missing values where appropriate. Exchanges with the AFREC AEIS team generally involve communication on data submissions, clarification requests, technical support, and feedback on the energy balance process.

3.5.2 ASSESSMENT AND GAP ANALYSIS

While validation and review processes for energy statistics within the MoEWR are relatively robust, communicating with responsible institutions in Somalia regarding their internal methodologies and the resulting quality/accuracy of data provided can be challenging due to a variety of factors, including institutional capacity, political stability, communication infrastructure, and coordination mechanisms.

The following table summarizes the principal issues and gaps that emerge from the diagnostic with respect to the quality assurance and data validation and potential solutions for addressing each challenge.

Nº	Key issues/gaps	Description
5.1	Limited internal checks in Excel infrastructure	Internal checks are time-consuming for statistics officers, as the lack of a structured tool limits the capacity for automated checks and error identification.

5.2	Communication with other institutions regarding feedback on methodologies and data quality	Communicating with other institutions in Somalia regarding their own internal methodologies and the resulting quality/accuracy of data provided can be challenging. To improve the Energy Sector Data Report, it is crucial to instigate formal data verification and validation processes between the National Bureau of Statistics (NBS) and the Ministry of Energy and Water Resources (MoEWR) on the following topics: 1. Formal Data Validation: Establish standardized processes for NBS to validate energy data, ensuring accuracy and consistency. 2. Methodology Standardization: Align data collection methods to maintain uniformity across all reports. 3. Quality Control: Implement regular audits and checks to verify the integrity of collected data. 4. Training: Provide training to enhance data collection and validation skills.
5.3	Absence of any communication/cooperation with representatives from Agriculture and Forestry	Considering biomass's importance, data validation should be expanded to representatives from the Agriculture and Forestry sectors. In Somalia, approximately 85% of the population relies on biomass fuels such as charcoal and firewood for cooking and energy needs, highlighting the critical importance of biomass in the country. However, the MoEWR is currently experiencing a lack of reliable biomass data. To ensure the accuracy and contextual relevance of this data, validation processes should be expanded to include representatives from the Agriculture and Forestry sectors. Their involvement will enhance the reliability and credibility of the data.

Table 10: Quality assurance and validation gap assessment

3.6 DISSEMINATION AND ANALYSIS

3.6.1 CURRENT SITUATION

According to the MoEWR, the energy balance and NEIS statistics in Somalia are disseminated through multiple channels, including web portals, GIS tools, publications, workshops, media, emails, conferences, and institutional websites. These varied dissemination methods ensure accessibility to different stakeholders such as government officials, donors, energy experts, academia, and the public. In this regard, in November 2024, the NBS has released its first Statistical Abstract. However, no other publications or public data dissemination have been found.

3.6.2 ASSESSMENT AND GAP ANALYSIS

Internal dissemination of information and statistics through ad hoc contributions to analytical tasks in MoEWR is strong in Somalia. Officers in MoEWR are generally well-informed about the available statistics and capacity in the statistics team, which facilitates the link between energy statistics and policy and planning initiatives. This link is expected to be further strengthened by the use of the recent functioning NEIS.

Dissemination to international organizations is also relatively strong; Somalia's energy statistics team generally does not face major challenges to compile and disseminate required data to AFREC, IEA, or other institutions, although dissemination is sometimes delayed or not completed on an N-1 basis.

Regarding **public disclosure**, information dissemination seems insufficient as there is no dataset available on NBS's or MoEWR's websites, and official report publications seems irregular and incomplete. There is a need to raise awareness of the processes and energy statistics activities undertaken by the MoEWR. Among other means, dissemination could be via a national annual workshop jointly organized by MoEWR with involvement from all stakeholders, the private sector, civil society, and the press.

N°	Key issues/gaps	Description
6.1	Public dissemination insufficient and lack of data analysis output and sectoral narrative production	While the MoEWR claims that internal and international dissemination is relatively strong, the public dissemination on NBS website seems weaker or not enough clear. It lacks valuable data analysis and written assessment to provide insights on the sector, relevant developments and policies, and forward outlook. There needs to be effective use of available statistics to produce analytical output or contribute to regular monitoring or decision making.
6.2	Low public and institutional profile of energy statistics and data collection work	Low visibility of energy statistics processes and output limits institutional and public awareness of the importance and use of energy data, hindering its use in decision-making processes, buy-in to support investments in improvements to energy statistics, and understanding and participation of partner institutions.
6.3	Limited internal dissemination of statistics and data across institutions	Limited data sharing across public and para-public institutions to ensure that official statistics can be easily used as inputs for analytical purposes.

Table 11 : Diagnosis of dissemination and analysis

3.7 ANALYSIS AND RECOMMENDATIONS

3.7.1 SWOT ANALYSIS

The table below assesses the **Strengths, Weaknesses, Opportunities** and **Threats** (SWOT) that emerge from the diagnostic assessment.

Strong collaboration between MoEWR and other relevant institutions as well as a legal framework that mandates data sharing constitute the major strengths in Somalia's statistics program. Collaboration with the MoPMR supports the provision of quality data on various energy flows (production, imports, exports, consumptions). Cooperation with the NBS is also strong and has permitted the inclusion of energy questions in the Somalia Integrated Household Budget Survey (SIHBS-2022), which has improved data on household use of energy, in particular biomass.

Strengths

- Clear mandate of the MoEWR to conduct and disseminate energy statistics
- Strong willingness within the MoEWR specialized team to improve and develop energy statistics
- A good collaboration and an existing developed process for data collection that involves all stakeholders
- A new functioning NEIS for electricity data since 2024

Weaknesses

- Limited training and expertise on specific energy sub-sectors : biomass, energy efficiency and end-uses, in addition to advanced analytics skills and tools (energy modelling)
- Limited resources and time capacity within the MoEWR to produce and disseminate detailed in-depth analyses on energy statistics
- Lack of communication with data providers and relevant stakeholder regarding feedbacks resulting of the validation and control for data quality
- No public dissemination of finalized data and energy balances

Opportunities

- Having a specialized team in the MoEWR with strong academic background working on energy statistics
- Strong partnership with international stakeholders like IEA or AFREC
- Collaboration with data providers and other institutions are generally positive
- The work of NBS that can support the continued development of data collection (biomass, end-uses)

Threats

- Limited survey on biomass sector
- Biased energy balance statistics due to weak data collection on biomass
- Limited primary data on collection for all related fields to end-uses consumption and requiring field surveys (electricity, petroleum)
- No external validation from stakeholders (other institutions) or validation workshop in place to ensure data quality and robustness

Figure 4: SWOT Analysis

The statistics team of the MoEWR has a formal mandate and dedicated human resources for compiling energy statistics, which is a major opportunity to address improve the energy statistics programme, provided that newly recruited officers are sufficiently trained, IT limitations are addressed, and the team benefits from sufficient resources to support stakeholder sensitization and dissemination activities.

3.7.2 RECOMMENDATIONS

1. Streamline and improve cooperation between MoEWR and NBS

→ A. Streamline participation in data activities at MoEWR and enhance interinstitutional linkages

by engaging in routine discussions with NBS to set the yearly production agenda and assign an FP for institutional collaboration on data issues, particularly on biomass and end-uses data through NBS surveys.

→ B. Improve data collection on biomass supply and demand

The diagnostic reveals relative gaps in biomass data: the national survey covering households and enterprises should be improved and conducted on a regular timeline. Improving biomass data will also require training for the MoEWR and NBS Energy Statistics Team to improve sectoral knowledge, technical coordination with bio-energy experts within NBS, and continued outreach to new stakeholders to improve secondary data collection on these sub-sectors.

→ C. Improve data collection for energy end-uses, in particular for petroleum products

by adding or adapting relevant questions on energy to the NBS household or enterprise surveys.

→ D. The Somalia National of Statistics (NBS) and the MoEWR must collaborate closer to harmonize data collection methodologies

integrate energy statistics into national surveys and censuses, and implement quality control mechanisms.

→ E. The MoEWR can ensure compliance with international statistical standards

while the NBS can provide sector-specific expertise in developing energy survey questionnaires.

→ F. Establishment of shared databases

and automated data exchange protocols for real-time integration.

2. Further enhance data quality and put in place a structured validation process

→ A. Reinforce data exchanges

Over the short term, this consists of strengthening data-sharing mechanisms to improve the reliability and accessibility of information. This can be implemented by standardizing reporting protocols and developing standard templates and methodologies for data collection and reporting to ensure consistency. At a later stage, an interagency data exchange platform can be created where a digital platform gathers all relevant data providers and shares and validates data in real time.

→ B. Instate formal data verification and validation processes

Implementing quality control measures to ensure data accuracy before integration into the NEIS. This could be achieved by instating validation workshops that group all key stakeholders from national and institutional bodies to potential private sector actors to share finalized data outputs and relevant analyses, welcoming their feedback to help identify data gaps, inconsistencies, and areas of further improvement.

3. Upgrade statistical tools to the requirements of a NEIS

→ A. Develop data management capacity

As data quality and coverage is expected to expand, the statistics team at MoEWR will need to manage ever larger and more complex data sets. All members of the Energy Statistics Team should receive basic training in the best practices and techniques for data management in Excel, and one member of the team should be selected as a focal point for more in-depth training on database management and tools to anticipate potential changes in the statistical infrastructure in the future.

→ B. Elaborate a tool for MoEWR to facilitate compiling and tracking statistics

including visualization and analytics. Technical management of the tool should be housed in MoEWR. Still, access should be granted to NBS and other identified end-users for improved cooperation and transparency with both organizations involved in the tool's specification.

4. Structure and Facilitate Data Dissemination

→ A. Continue to publish annual reports and release public dataset for public dissemination

Until 2024, dissemination of energy statistics by MoEWR occurred only through data provision to international organizations including AFREC, and ad hoc contributions to projects in the Ministry. In 2024, NBS published its first Statistical Abstract, giving access to some energy data (electricity by uses, final consumption by fuel, petroleum imports). Dissemination of energy statistics will raise the visibility of the team to external stakeholders, facilitate users' access to statistics and information on the energy sector, and reduce the time spent by the team preparing responses to ad hoc internal data requests. As a first step, the team could focus on the improvement of the annual statistical abstract and the publication of a standard dataset (supply and demand data) for the public on the Ministry's website or NBS's website, before expanding to other publication types or printed pamphlets or reports. Attention should however be paid to avoid a duplication of information between NBS and MoEWR.

→ A. Build capacity on energy economics and data analysis to expand the analytical output of the team

Currently the team reports lacking time and skills to invest in using energy statistics to generate analytical output (sectoral policy analyses, forecasts, etc.) in support of policy making or public debate outside of contribution to specific MoEWR projects. Over the longer term, as data quality and statistics tools improve, the team can expand its output to include these thematic contributions if they receive sufficient training.

→ C. Raise the profile of energy statistics by holding an annual national workshop to present the Energy Balance and headline statistics for energy

This should include the leading public sector stakeholders, private sector, civil society, and press and be hosted by MoEWR.

5. Consolidate and perpetuate energy statistics processes

→ A. Review and evaluate statistics process, outputs, and training needs on a regular basis

This process should aim to identify any bottlenecks or challenges that require action in the statistics process, assess the compliance of statistical outputs with international standards and the requirements of national policymakers, and identify any training or capacity building needs in the team that should be addressed. A review should be conducted every 3-5 years.

4 ACTION PLAN TO ESTABLISH A NEIS



The action plan covers a period of five years, with the aim of improving energy statistics and establishing a fully functional NEIS in line with international standards recommendations by the end of the period.

The plan comprises 24 prioritized actions spread across four implementation phases over the period 2025- 2030. While many actions can be achieved by the existing team with few additional resources, the implementation of the full action plan is expected to require US\$ 100,000 in financial resources to implement. These costs are primarily service costs to cover statistical tool development and public dissemination, as well as budget for in-depth training for thematic focal points (energy end-uses and biomass supply and use). In particular, the plan identifies approximately US\$ 2,500 in annual recurring costs (excluding salary costs), primarily to cover the cost of holding annual data validation and dissemination/sensitization workshops, as well as printing costs to support dissemination.

4.1 IDENTIFICATION AND PRIORITIZATION OF REQUIRED ACTIONS

The table below identifies the specific actions required to support each recommendation. Action items are prioritized using an analytical matrix that assesses actions based on their expected impact in achieving the main objectives and on the effort or resources they require. A project is considered high effort if it has a high financial cost, high human resource requirements, or if it is highly dependent on an action outside the direct control of the concerned stakeholders. Impact is considered in terms of contribution to achieving the overall objective of the plan, to establish a fully functional NEIS, as well as to the specific objectives detailed in the second column of the table. Classified in this way, the items are prioritized across four categories as shown in the diagram below.

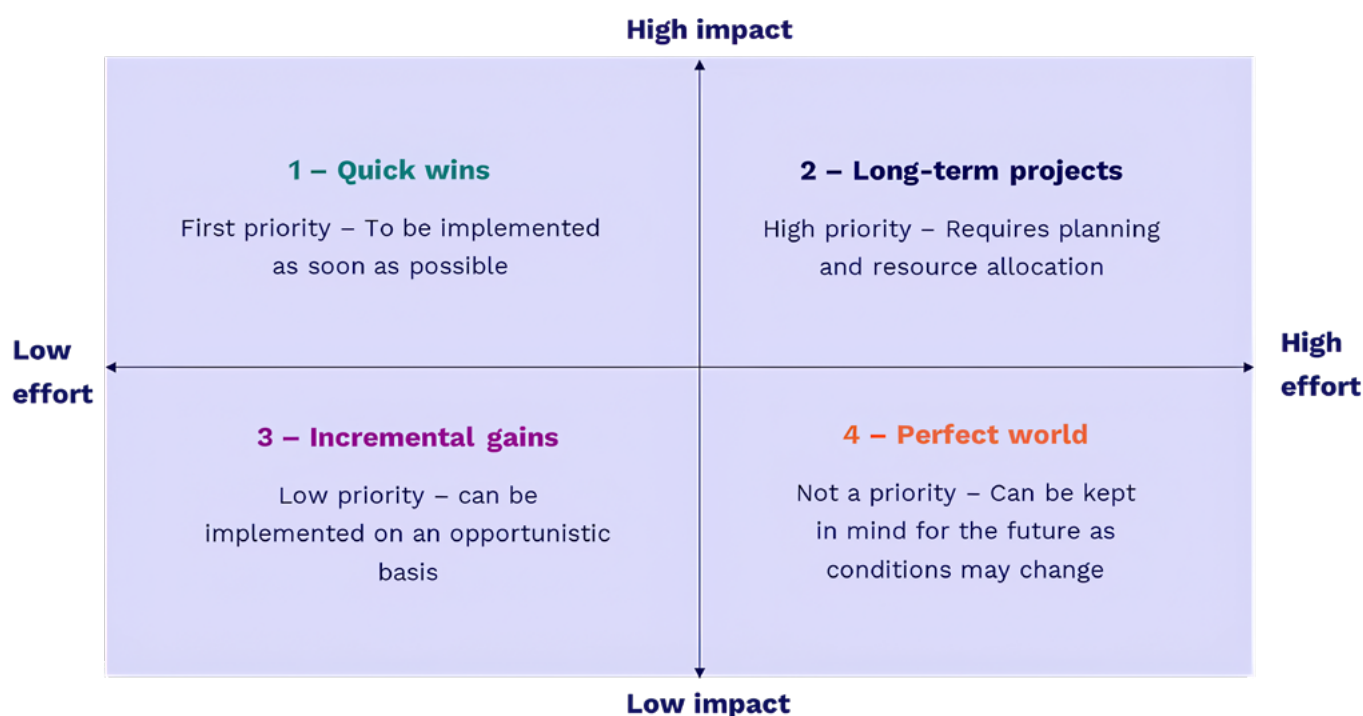


Figure 5 : Prioritization matrix

Items classified with “1” are actions that can be undertaken with little planning and few resources but are expected to have a substantial impact. Items classified with “2” are projects expected to contribute to statistics development but require significant planning and resource allocation to bear fruit. Items classified with “3” or “4” are generally considered lower priority and can be addressed opportunistically.

Recommendations	Specific Objectives	N°	Action	Priority
1 Streamline and improve cooperation between MoEWR and NBS	A. Formalize institutional relations and data sharing agreements with partners institutions	1A.1	<i>Involving Energy Statistics team members of MoEWR in discussions with NBS to set the yearly production calendar</i>	1
		1A.2	<i>Assign FPs to engage in institutional collaboration on data issues with both NBS and MoEWR to maximize synergies between national statistics processes, AFREC activities, and other data initiatives. Focal points should, for the most part, be common across all activities.</i>	1
	B. The MME and LISGIS must collaborate closer to harmonize data collection methodologies	1B.1	<i>Training for the MoEWR statistics team to improve sectoral knowledge and estimation methodologies, increase collaboration with identified technical experts within MoEWR and other relevant organizations</i>	1
		1B.2	<i>Outreach to new stakeholders to improve secondary data collection on these sub-sectors</i>	2
		1B.3	<i>Develop and document a methodology to estimate biomass supply and demand based on inputs from survey data (from NBS).</i>	2
	C. Improve data collection for energy end-uses, in particular for petroleum products	1C.1	<i>Additional surveys or by adding or adapting relevant questions on energy to the household or enterprise surveys (residential use of bioenergy, off-grid or auto-production electricity generation, energy efficiency, etc.); and ultimately, the upcoming Census scheduled for 2027</i>	2

1 Streamline and improve cooperation between MoEWR and NBS	D. Foster closer collaboration between NBS and MoEWR	1D.1	<i>The NBS and the MoEWR must collaborate more closely to harmonize data collection methodologies, integrate energy statistics into national surveys and censuses, and implement quality control mechanisms.</i>	1
	E. Effective division of responsibilities between the two entities	1E.1	<i>The MoEWR can ensure compliance with international statistical standards, while the NBS can provide sector-specific expertise to develop energy survey questionnaires, for instance.</i>	1
	F. Establish shared database and automated data exchange protocols in real time	1F.1	<i>Establishment of shared databases and automated data exchange protocols for real-time integration.</i>	3
2 Further enhance data quality and put in place a structured validation process	A. Reinforce data exchanges	2A.1	<i>Standardize reporting protocols by developing templates and methodologies for data collection and reporting to ensure consistency across different agencies.</i>	1
		2A.2	<i>At a later stage, an interagency data exchange platform can be developed. This digital platform gathers all relevant data providers and shares and validates data in real time.</i>	3
	B. Instate formal data verification and validation processes	2B.1	<i>Implement quality control measures to ensure data accuracy before integration into the NEIS. This could be achieved by establishing validation workshops that regroup all key stakeholders from national and institutional bodies to potential actors from the private sector to share finalized data outputs and relevant analyses and welcome their feedback to help identify data gaps, inconsistencies, and areas of further improvement.</i>	1
3 Upgrade statistical tools to the requirements of a NEIS	A. Develop data management capacity	3A.1	<i>Train the MoEWR energy statistics team on fundamental data management principles and best practices focusing on Excel. It could be provided by AFREC.</i>	1
		3A.2	<i>Select and train 1-2 team members as data management focal points, with more in-depth training on databases and data management techniques.</i>	2
		3A.3	<i>Reach out to the MoEWR and NBS IT departments to include IT experts in reflections on data management, security, potential future evolutions to the statistical infrastructure, and collaboration between the two organizations.</i>	1
	B. Elaborate a tool for MoEWR to facilitate compiling and tracking statistics	3B.1	<i>Train the MoEWR energy statistics team on options for NEIS structure and design and on essential management of a tool development process. This action should lead to the design and implementation of a user-friendly tool to assist the Ministry of Energy and Water Resources (MoEWR) in compiling, managing, and tracking key energy statistics for effective planning and monitoring.</i>	1

4 Structure and Facilitate Data Dissemination	A. Continue to publish annual reports and release public dataset for public dissemination	4A.1	Identify indicators and metadata for inclusion in editable datasets and generate templates and distribution rights.	1
		4A.2	Populate the templates from 4A.1 and publish the dataset regularly on an appropriate platform (NBS, MoEWR website, limited distribution, etc.).	1
	B. Build capacity on energy economics and data analysis to expand the analytical output of the team	4B.1	Train the statistics team on basic energy data analysis and data visualization techniques.	1
		4B.2	Select a data analysis and modelling focal point in the team to receive more advanced training on energy statistics, energy economics and other analytical methodologies.	2
		4B.3	Gradually expand analytical outputs to publish 1-2 thematic analyses per year on relevant topics as resources allow.	2
	C. Raise the profile of energy statistics by holding an annual national workshop to present the Energy Balance and headline statistics for energy	4C.1	Hold annual workshops to present the data, the Energy Balance and key energy statistics to report to key stakeholders from government, development partners, the private sector, and civil society to build understanding and cooperation and raise the visibility of statistics activity and analyses. This should include the leading public sector stakeholders, the private sector, civil society, and the press and be hosted by MoEWR. This action should promote awareness, stakeholder engagement, and data-driven policy-making.	2
5 Consolidate and perpetuate energy statistics processes	A. Review and evaluate statistics process, outputs, and training needs on a regular basis	5A.1	Regular monitoring of statistics processes and outputs is conducted to identify necessary adaptations or improvements.	3
		5A.2	Conduct updated surveys for biomass, end uses of electricity, energy end use, and EE (or other subjects) as necessary to update assumptions and data.	2

The figure below summarizes the basic phases of implementation envisaged for the recommended actions to establish a fully functional NEIS in Somalia.

In **Phase 1**, through December 2025, the focus is on the plan's finalization, raising awareness, and implementing an initial set of "quick win" actions (marked as priority "1") to improve data quality and build capacity.

Starting in 2026, **Phase 2** sees the continued implementation of quick-win actions to improve data quality and launch the public dissemination of an annual report and standard data set. In parallel, long-term actions (marked as priority "2") must be prepared and resourced.

At the same time, **Phase 3** extends over two years in 2027-2028 and sees the implementation of the majority of the significant actions for improving energy statistics, including a statistics infrastructure design and surveys on the biomass and end-use sub-sectors. Given the nature of the actions in Phase 3, most financial resource requirements are concentrated during this period.

Phase 4, starting in 2029, focuses on monitoring and adapting the adopted processes and tools as necessary, as well as on making continued incremental gains through the opportunistic implementation of actions labelled priority "3".

A detailed implementation plan, including estimated resources, indicators and timelines is included in table 11.

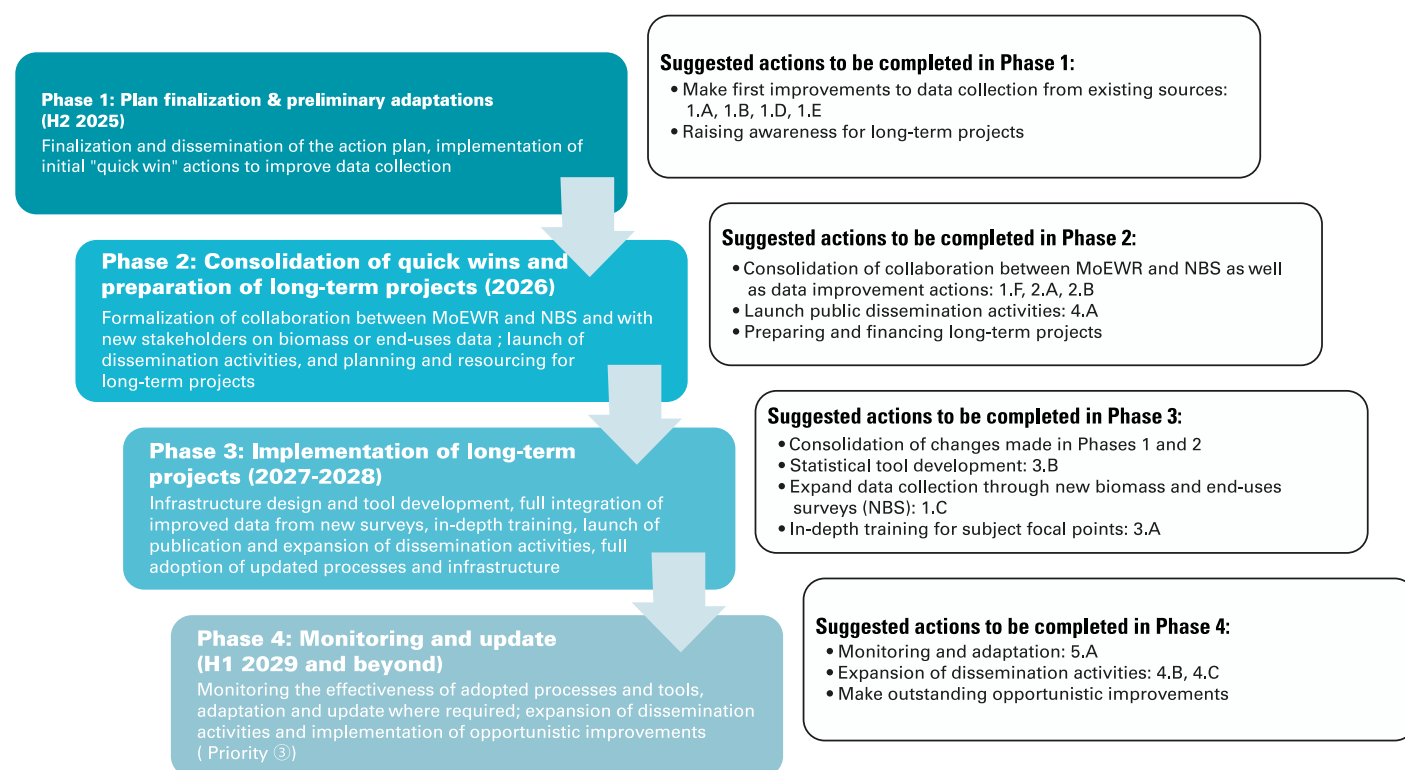


Figure 6: Indicative implementation phases

Recommendation / General objectives	Specific Objectives /Expected Results	N°	Action	Priority	Resources HR: Human Resources (FTE) ⁴ FR: Financial Resources (US\$)	Indicators/Mean of Verification	Implementation calendar (start date)
1 Streamline and improve cooperation between MoEWR and NBS	A. Streamline participation in data activities at MoEWR and enhance interinstitutional linkages	1A.1	<i>Involving Energy Statistics team members of MoEWR in discussions with NBS to set the yearly production calendar</i>	1	HR: Limited FR: Limited	An introductory meeting is set up to formally introduce the members and assignments, and a supporting document is drafted and circulated to confirm assignments and the production schedule.	H2 2025
		1A.2	<i>Assign FPs to engage in institutional collaboration on data issues with both NBS and MoEWR to maximize synergies between national statistics processes, AFREC activities, and other data initiatives. Focal points should, for the most part, be common across all activities.</i>	1	HR: Limited FR: Limited	A core group of focal points participates in all statistics/ data coordination and activities.	H1 2026

4 - Full-time equivalent is measured as the sum of the active time spent by each person across all involved members of the personnel. 2 people for 2 weeks = 4 weeks FTE; 1 person for 4 weeks = 4 FTE; 2 people for 1 week and 1 person for 2 weeks= 4 FTE. Does not reflect the total time required to complete the task (for example 4 weeks FTE may be spent over 6 months)

1 Streamline and improve cooperation between MoEWR and NBS	B. Improve data collection on biomass supply and demand	1B.1 <i>Training for the MoEWR statistics team to improve sectoral knowledge and estimation methodologies, increase collaboration with identified technical experts within MoEWR and other relevant organizations</i>	1	HR: < 1 week FR: Estimated 5,000 USD	At least 2 team members have attended training sessions	H2 2027
		1B.2 <i>Outreach to new stakeholders to improve secondary data collection on these sub-sectors</i>	2	HR: Limited FR: Limited	Relevant stakeholders actively and regularly participate in working group meetings to validate statistics. Develop a suitable methodology to estimate biomass supply and use based on inputs from the survey. The methodology is then prescribed in the National Energy Statistics Guidelines.	H2 2026
		1B.3 <i>Develop and document a methodology to estimate biomass supply and demand based on inputs from survey data (from NBS).</i>	2	HR: 4 weeks FR: Limited		H2 2027
	C. Improve data collection for energy end-uses, in particular for petroleum products	1C.1 <i>Additional surveys or by adding or adapting relevant questions on energy to the household or enterprise surveys (residential use of bioenergy, off-grid or auto-production electricity generation, energy efficiency, etc.); and ultimately, the upcoming Census scheduled for 2027</i>	2	HR: ~6 weeks FR: Limited	The survey is complete, and data inputs are integrated into energy statistics outputs. The team is aware of how to update the data for subsequent years	H2 2027

1 Streamline and improve cooperation between MoEWR and NBS	D. Foster closer collaboration between NBS and MoEWR	1D.1	<i>The NBS and the MoEWR must collaborate more closely to harmonize data collection methodologies, integrate energy statistics into national surveys and censuses, and implement quality control mechanisms.</i>	1	HR: 8 weeks FR: Limited	Assigned focal points from MoEWR and ESS to engage in an initial scoping meeting, followed by a signing of a formal collaboration charter that would envisage regular interactions in the farmwork of punctual group and ad hoc meetings	H2 2025
	E. Effective division of responsibilities between the two entities	1E.1	<i>The MoEWR can ensure compliance with international statistical standards, while the NBS can provide sector-specific expertise to develop energy survey questionnaires, for Instance.</i>	1	HR: 1 day /month FR: None	Assign at least 1 team member to coordinate with ESS	H1 2026
	F. Establish shared database and automated data exchange protocols in real time	1F.1	<i>Establishment of shared databases and automated data exchange protocols for real-time integration.</i>	3	HR: Recurring FR: Estimated 10,000 USD	Integrate this aspect into the pre-defined scope and specifications (1A.2) after discussions with ESS.	Opportunistically

2 Further enhance data quality and put in place a structured validation process	A. Reinforce data exchanges	2A.1	Standardize reporting protocols by developing templates and methodologies for data collection and reporting to ensure consistency across different agencies.	1	HR: Limited FR: Limited (internal work)	Produce Excel and Word templates for dissemination to data providers and detail reporting processes and channels in a formal document.	H2 2025
		2A.2	At a later stage, an interagency data exchange platform can be developed. This digital platform gathers all relevant data providers and shares and validates data in real time.	3	HR: Recurring FR: Subject to developments, specifications, the cost can vary between 20,000 USD to approximately 40,000 USD	Specify the scope and complexity of the tool with the development team (servers, cloud storage, security, user interface, etc.). A phase of testing and verification would follow this. And would ideally involve at least one trained team member as a designated point of contact.	2029 and beyond
	B. Instate formal data verification and validation processes	2B.1	Implement quality control measures to ensure data accuracy before integration into the NEIS. This could be achieved by establishing validation workshops that regroup all key stakeholders from national and institutional bodies to potential actors from the private sector to share finalized data outputs and relevant analyses and welcome their feedback to help identify data gaps, inconsistencies, and areas of further improvement.	1	HR: 4 weeks FR: Limited	- Formal approvals from appropriate public channels; - Initial mapping of relevant stakeholders appointed focal points to be invited; Organising the workshop and securing logistics	H2 2026

3 Upgrade statistical tools to the requirements of a NEIS	3A.1	Select and train 1-2 team members as data management focal points, with more in-depth training on databases and data management techniques.	2	HR: 4 weeks FR: Depending on training format (in-person ~\$10,000 for four-person weeks outside of Mogadiscio; online <\$3000)	Focal points have received at least 1 week of intensive training. Additional training opportunities are identified.	H1 2027
	A. Develop data management capacity	Reach out to the MoEWR and NBS IT departments to include IT experts in reflections on data management, security, potential future evolutions to the statistical infrastructure, and collaboration between the two organizations.	1	HR: Limited FR: Limited	The IT department has held a meeting on data management and statistics.	H1 2026 (linked to preparation of 2B)
	3A.2					
3 Upgrade statistical tools to the requirements of a NEIS	3B.1	Train the MoEWR energy statistics team on options for NEIS structure and design and on essential management of a tool development process.	1	HR: <1 week FR: Limited	At least two members of the team.	H2 2027
	B. Elaborate a tool for MoEWR to facilitate compiling and tracking statistics					

Table 12: Action plan



5.1 SUMMARY RESULTS OF THE DIAGNOSTIC & GAP ANALYSIS

N°	Key issues/gaps	Description
Institutional environment		
1.1	Need to strengthen coordination	Foster better collaboration between institutions to ensure timely data sharing and validation
1.2	Need of more official cooperation with certain entities to provide data	Occasionally, the Ministry is facing data feedback problems (response time, return rate, gaps in data). Memorandum of Understanding would be needed.
Human & material resources		
2.1	Time Constraints	The workload for preparing energy balance statistics is often high, and with multiple ongoing initiatives, it can be difficult to allocate enough time to ensure the highest level of accuracy and timeliness in reporting.
2.2	Skills Gap	Although they have skilled personnel, there is a need for more advanced technical expertise, especially in areas like data analytics, advanced energy modelling, and forecasting. This gap sometimes limits their ability to fully leverage modern tools and methodologies.

2.3	Training needed on specific sectoral issues and methodologies	Statistics officers are generally trained in statistics and learn about the energy sector on the job. Officers highlighted a need for additional knowledge on methodologies/data processing related to specific issues in the oil and biomass sub-sectors. These requirements relate to general knowledge on the structure and value chains for these products, as well as treatment of stock changes, estimation of specific calorific values for oil products, and biomass supply and demand estimation.
Data collection & quality		
3.1	Enhance Data Collection	Improve the coverage and consistency of data across all sectors, including informal and decentralized energy sources. One starting solution would consist in improving the lack of clear institutional Focal Points.
3.2	Upgrade Tools and Capacity	Implement more advanced tools for data analysis and invest in capacity-building for the team.
3.3	Advanced Analytics	Incorporate advanced analytical tools, such as predictive modelling and machine learning, to improve forecasting and energy planning.
3.4	Comprehensive and Integrated Energy System	Develop a fully integrated energy system that includes data from all sectors, ensuring a holistic view of the national energy landscape.
3.5	Real-time Data Access	Create platforms for real-time data access and reporting to inform policymakers and stakeholders more efficiently.
Data processing		
4.1	Challenges regarding the management, storage, or dissemination of data histories	The ministry is facing several challenges regarding the management, storage, or dissemination of data histories. These challenges can impact data accuracy, accessibility, timeliness, and the overall quality of energy balance reporting.
4.2	Data format harmonization	Historical energy balance data in Somalia are not all in the same data format. It varies across different years due to changes in data collection methodologies, reporting systems, and the organizations involved at different times.
Quality assurance & validation		
5.1	Limited internal checks in Excel infrastructure	Internal checks are time-consuming for statistics officers, as the lack of a structured tool limits the capacity for automated checks and error identification.
5.2	Communication with other institutions regarding feedback on methodologies and data quality	Communicating with other institutions in Somalia regarding their own internal methodologies and the resulting quality/accuracy of data provided can be challenging
5.3	Absence of any communication/cooperation with representatives from Agriculture and Forestry	Considering biomass's importance, data validation should be expanded to representatives from the Agriculture and Forestry sectors.

Dissemination		
6.1	Public dissemination insufficient and lack of data analysis output and sectoral narrative production	While the MoEWR claims that internal and international dissemination is relatively strong, the public dissemination on NBS website seems weaker or not enough clear. It lacks valuable data analysis and written assessment to provide insights on the sector, relevant developments and policies, and forward outlook. There needs to be effective use of available statistics to produce analytical output or contribute to regular monitoring or decision making.
6.2	Low public and institutional profile of energy statistics and data collection work	Low visibility of energy statistics processes and output limits institutional and public awareness of the importance and use of energy data, hindering its use in decision-making processes, buy-in to support investments in improvements to energy statistics, and understanding and participation of partner institutions.
6.3	Limited internal dissemination of statistics and data across institutions	Limited data sharing across public and para-public institutions to ensure that official statistics can be easily used as inputs for analytical purposes.

Table 13: Summary results for diagnostic & gap analysis

5.2 COSTING ASSUMPTIONS

ITEM	COMMENTS	ASSUMED UNIT COST (US\$)
CONFERENCE PACKAGE	24 pax x \$25 + \$400 venue fee per day	\$1000
CONSULTING FEES	Price per week FTE	\$5000
TRAINING	In-person training, price per person-week, including travel and accommodation	\$2500

Table 14 : Costing assumptions

5.3 BIBLIOGRAPHY

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5.4 LIST OF INTERVIEWS

The following interviews were held with stakeholders in support of the diagnostic and action plan development:

N°	DATE	ATTENDANCE	SUBJECT
1	06/03/2025	Baptiste ALLAFORT (Enerdata) Thierry BADOUARD (Enerdata) Mohamed Abdirahman Sid Ahmed (MoEWR)	Resources and institutional environment

Table 15: List of interviews

5.5 QUESTIONNAIRES

Included as separate files



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