AFREC
African Energy Commission

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MINISTRY OF WATER AND ENERGY
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DIAGNOSTIC REPORT AND ACTION PLAN

MAY 2025

Prepared for the Ministry of Water and Energy of the Federal Democratic Republic of Ethiopia.

Support program for 16 African Union member states (MS) and 2 regional economic communities (RECs) for the improvement or establishment of the national or regional energy information system (NEIS/REIS)

African Union

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 Republique, Djibouti, Eswatini, Ethiopia, Equatorial Guinea, The Gambia, Liberia, Mauritania, Mozambique, Senegal, Sierra Leone, Somalia, Togo, and Tunisa. 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
DISCO	Distribution Companies
EB	Energy Balance
EBS	Energy Balance Studio
ECC	Ethiopian Customs Commission
EEC	Energy Efficiency and Conservation
EEP	Ethiopian Electric Power
EEU	Ethiopian Electric Utility
EPRA	Energy and Petroleum Regulatory Authority
EPSE	Ethiopian Petroleum Supply Enterprise
ESIG	Ethiopian Sugar Industry Group
ESS	Ethiopian Statistical System
REC	Regional Economic Communities
ESS	Ethiopian Statistics Service
FTE	Full-time equivalent
GDC	Geothermal Development Company
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	Thousands of tons of oil equivalent
l	Litres
LPG	Liquified Petroleum Gases
MAED	Model for Analysis of Energy Demand
MOU	Memorandum of Understanding
MoWE	Ministry of Water and Energy
MT	Metric tonnes
Mtoe	Million tons of oil equivalent
NEIS	National Energy Information Systems
REREC	Rural Electrification and Renewable Energy Corporation
SIEC	Standard International Energy Classification
SWOT	Strengths, Weaknesses, Opportunities, Threats
TWG	Technical Working Group
UNSD	United Nations Statistics Division

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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) in the Ministry of Water and Energy (MoWE).

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 support at the regional level to encourage the emergence of efficient cooperation between AFREC and Regional Economic Communities (REC).

1.1 RESULTS OF THE DIAGNOSTIC

Ethiopia does not currently have a functioning NEIS. Despite having a data unit dedicated to energy statistics, MoWE lacks technical support and a clear mandate to advance its work and produce more comprehensive and quality data outputs. The table below describes the primary characteristics of Ethiopia's energy statistics program as identified during the diagnostic assessment in Section 3 of this document.

Item	Diagnostic results
Institutions and legal environment	• MoWE is mandated by Proclamation No. 1263/2021, published in January 2022, for the collection, organization, and utilization of energy- and water-related data • MoWE plays a critical role in the country's energy development by overseeing the planning, development, and management of water and energy resources • Collaboration between MoWE and other stakeholders is exclusive to the data collection phase and is formally organized by the issuance of a ministerial letter requesting data from the concerned point of contact • Data initiatives across MoWE and other pertinent institutions are not closely coordinated and should be streamlined.
Human and material resources	• MoWE currently has a small dedicated team for energy statistics and data with relevant backgrounds, namely in economics and statistics, but lacks pointed energy sectoral expertise, and could benefit from the addition of an Energy Specialist profile in the longer term • Additional training is required to reinforce capacity on biomass and energy efficiency sub-sectors, data management, and energy economics and modelling at MoWE • Material resources are relatively limited to produce energy statistics
Data collection	• Data collected by MoWE through a point of contact (no assigned focal points) in various organizations, primarily public / and Para-public companies • Lack of a well-established data collection system; most data are collected manually. There is also no systematic integration with the Statistical Office and the Regional Energy Bureau. • MoWE uses data mostly taken from data providers and identified stakeholders on an annual basis • Data sources are not obligated by law to transmit data to MoWE, but the organization has established connections and a collection system in place • Biomass data is solely estimated at this stage, with no data collection in place, constituting a significant weakness in the overall statistics
Data processing	• Data is processed by MoWE using Energy Balance Studio (EBS) and ad-hoc Excel files. Once processing is concluded, the data is fed into AFREC format using the AFREC template. • There is no additional statistical infrastructure at MoWE. The templates used by MoWE do not allow for the generation of all required indicators
Quality assurance and validation	• Internal checks are not achieved following a specific methodology, only on an ad hoc basis. The MoWE relies on checks in AFREC questionnaire to identify potential errors. • Additional checks are required to monitor compliance with international standards and verify/track the validity of estimated values
Dissemination and analysis	• MoWE does not currently publish or disseminate Energy reports or energy statistics outputs to the general public or stakeholders due to various financial and technical constraints • MoWE does, however, deliver the annual energy balance to AFREC and, upon request, to partner organizations like the IEA and IAEA • No analytical outputs or publications from MoWE

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

MoWE has a good capacity for data collection, compilation, and dissemination of energy statistics, with five full-time team members possessing economist and statistician profiles and a legal mandate for data collection. This constitutes a core strength that Ethiopia can build. MoWE is, therefore, well-positioned to host the NEIS. A few years ago, an external Consultant was engaged to develop a National Energy Information System, which was briefly operational before being discontinued due to a combination of technical challenges and financial constraints.

The significant weaknesses relate to insufficient statistical infrastructure: The Excel and Energy Balance Studio (EBS) tool currently used by MoWE does not allow for standardized and effective data series tracking or calculating all relevant indicators for energy sectoral analysis. Other weaknesses highlighted in the diagnostic relate to the quality and availability of biomass data, which threatens the accuracy of the energy balance statistics by presenting a biased vision of the country's energy system. Finally, limited technical capacity for advanced data analysis and narrative reporting at MoWE limits the organization's potential to produce pertinent analytical outputs that fall directly within its legal mandate.

MoWE should expand and systematize its collaboration with key data providers and stakeholders to ensure an adequate flow of information and inputs between organizations regarding energy statistics. Energy statistics on consumption, transformation, and supply at the national, sectoral, or subnational level should remain MoWE's responsibility while further expanding the scope and deepening the granularity of the analyses and processes already in place. MoWE should effectively exercise its responsibility for and develop the capacity to manage, store, use, and disseminate more detailed data required in energy planning and policy assessment processes (infrastructure locations/characteristics, planning data sets on electricity demand, technology costs, etc.) that are currently not covered.

To this end, it is strongly advised that MoWE's dedicated data unit would be further supported in terms of technical and financial needs to assert further its role as custodian of energy statistics and responsibility for coordinating collaboration with key stakeholders, including with external organizations such as AFREC, collecting and managing planning data, and developing analytical output for Ministerial level and public dissemination, which is currently not in place.

1.2 RECOMMENDATIONS

Specifically, the diagnostic assessment concludes with seven recommendations to reinforce energy statistics in Ethiopia to align with international recommendations and establish a NEIS:

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

➜ **A. Reinforce data exchanges between stakeholders**

In the short term, this should consist of developing consistent standard templates and methodologies for data collection and reporting. 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 a formal data verification and validation process**

put in place quality controls to ensure data accuracy before integration into the NEIS, through data validation workshops that gather all key stakeholders to share finalized data outputs and relevant analyses, welcoming their feedback to help identify data gaps, inconsistencies, and areas of further improvement.

2 – Improve cooperation between institutions to rationalize resources and enhance synergies

➜ **A. Support closer collaboration between the two entities**

to harmonize data collection methodologies, integrate energy statistics into national surveys and censuses, implement quality control mechanisms, integrate energy-related questionnaires into scheduled surveys, and ultimately set up a system of real-time data exchange.

3 – Enhance technical and logistical capacities within MoWE

➜ **A. Reinforce the Energy Modelling Desk in MoWE's capabilities in terms of technical and logistical support**

In the short term, this should consist of providing detailed in-person training on general energy modelling methodology and specialized training on specific areas like biomass and energy efficiency, in addition to technical support for data collection and Energy Data Management System; which may require advanced training on energy tools, and establish mentorship/exchange programs with experienced modelers.

➜ **B. Leverage links with regional energy offices throughout the country**

Currently, the Energy Modelling Desk does not enlist the regional energy offices to collect data on a regional level, which could be of added value for specific questions on biomass energy consumption.

➜ **C. Strengthen links with other institutions**

by consulting them systematically on energy data-related issues facing MoWE's energy statistics team to support with data identification and collection in projects that may require it.

4 – Improve and expand data collection

➜ **A. Improve data collection on biomass supply and demand**

As a priority, conduct a national survey covering households and enterprises. Improving biomass data will also require training for the Data Modelling Team to improve sectoral knowledge and technical coordination with bio-energy within MoWE.

➜ **B. Improve data collection for end use, particularly for petroleum products**

by adding or adapting relevant questions on energy to existing household or enterprise surveys, if available. And ultimately conduct a national survey and other primary data collection activities. This will help improve the disaggregation levels of energy data by subsector and by energy type in the Energy Balance.

➜ **C. Support the development of a structured data validation process nationally by conducting an annual validation workshop or technical committee**

This will ensure effective and sustainable participation from data providers and organizations within the energy sector and other organizations with mandates on related subjects such as trade, forestry, and transport. Budgetary support may be required to ensure that the committee can meet regularly and fulfil its role. MoWE should host this committee.

5 – Upgrade statistical tools to meet the requirements of a NEIS

➜ **A. Develop data management capacity**

As data quality and coverage expand, the Energy Modelling Desk at MoWE will need to manage ever-expanding and complex data sets. All team members should receive basic training on best practices and techniques for data management in Excel, and one/two members should be selected as a focal point for more in-depth training on database management and tools to anticipate future statistical infrastructure changes.

6 – Structure and Facilitate Data Dissemination

➜ **A. Prepare and publish energy reports prepared by MoWE and distribute them to a public audience**

This will raise MoWE's visibility to external stakeholders, facilitate users' access to statistics and information on the energy sector, and help contribute to timely public or technical debates on energy policy issues.

➜ **B. 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 MoWE.

➜ **C. Build capacity on energy Statistics and or economics and data analysis to expand the team's analytical output**

Currently, the MoWE team reports lacking the time, resources, 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 MoWE projects.

7 – Sustain, evaluate, and formalize energy statistics processes

➜ **A. Formalize processes related to the energy statistics mandate**

MoWE has a clear institutional mandate to collect and generate energy statistics, and it looks best positioned to host a NEIS in Ethiopia. It is, however, essential to formalize and clarify the role of MoWE concerning energy data with a Proclamation or internal document to provide further guidance on data management in support of this role. It is also helpful to sign MOUs with the relevant stakeholders and data providers to; (i) assign a specific focal point within each body assigned to the duty of providing relevant data and communication, (ii) clarify the working relationships between institutions, (iii) limit disruptions in the event of a management change, (iv) and materialize the future collaboration on the data validation committee.

➜ **B. Ensure continuity in statistics activities with written processes and user manuals**

It is crucial to produce an Energy Statistics guidelines book to ensure the sustainability and continuity of data collection and statistics compilation processes and concepts. Furthermore, considering the potential turn-over of staff involved the energy statistics and the expected expansion of relevant areas of further data collection and analysis, it will be necessary over the longer term to develop a user guide and manual for key tools and processes, as well as training materials for potential new hires to ensure that knowledge and methods are harmonized and perpetuated.

➜ **C. Regularly review and evaluate the statistics process, outputs, and training needs**

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 PRIORITY ACTIONS

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 practices. The plan comprises 31 prioritized actions spread across four implementation phases from 2025 to 2029.

While the existing team can achieve many actions with few additional resources, implementing the entire action plan will require approximately **US$477,500 to US$765,500** in financial resources. These costs are primarily service costs to improve the statistical infrastructure and tools as well as expanding data coverage. Priority "1" actions are estimated to cost between US$5,500 and US$12,500. In comparison, priority "2" actions cost between US$192,000 and US$203,000. Finally, priority "3" actions (opportunistic) are expected to cost between US$280,000 and US$550,000, depending on the scope and design of the actions in question. The proposed actions and their associated costs are detailed in Table 11.

The plan also identifies approximately US$1000 to US$2000 in annual recurring costs, primarily to cover the cost of holding annual data validation and dissemination/sensitization workshops and printing

costs to support dissemination. Additional human resources are also potentially required to support the development of a NEIS in Ethiopia.

The following "quick win" items or actions identified for Ethiopia will have a significant impact with minimal resources, as the highest priority over the coming 12 months:

- Reinforce data exchanges between institutions and stakeholders by setting up standard templates for data collection and assigning formal Focal points in each institution
- Instate a formal data verification and validation process through an annual validation workshop gathering all key stakeholders and data providers
- Foster closer collaboration between the MoWE and the ESS in areas like data and methodologies harmonization, integrating an energy questionnaire into national surveys, and future census
- 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 well as specialized training on specific areas like biomass, energy efficiency, and Data Management Systems

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

- Improve biomass data through a National Survey: Conduct a comprehensive biomass study, at an estimated cost of **US$250,000 to US$500,000**, to collect primary data on supply transformation and use in household, commercial/service, and other sectors.
- Select and train one/two team members in advanced energy statistics, energy economics, and analytical methodologies.

FIVE-YEAR ACTION PLAN TO ESTABLISH A NEIS

PHASE 1: PLAN FINALIZATION & PRELIMINARY ADAPTATIONS (H2 2025)

- Finalization and dissemination of the action plan
- Participation in the AFREC training program
- Implementation of initial "quick win" actions to improve data collection on biomass and energy efficiency
- Incorporate informal energy use in upcoming household survey, pending availability of funds

PHASE 2: CONSOLIDATION OF QUICK WINS AND PREPARATION OF LONG-TERM PROJECTS (2026)

- Training on data management for statistics team
- Launch of dissemination workshop
- Planning and resourcing for the design of the energy statistics tool national surveys

PHASE 3: IMPLEMENTATION OF LONG-TERM PROJECTS (2027- 2028)

- Training of MoWE Energy Modelling Desk
- Statistical infrastructure development, testing, and implementation
- Full integration of improved data from national Surveys
- Full adoption of updated processes and infrastructure

PHASE 4: MONITORING AND UPDATE (2029 AND BEYOND)

- Monitoring the effectiveness of adopted processes and tools
- Adaptation and update where required
- Expansion of dissemination activities with analytical outputs from MoWE
- Implementation of remaining opportunistic improvements

Figure 1 : Action plan overview with phases and primary activities

2 COUNTRY OVERVIEW

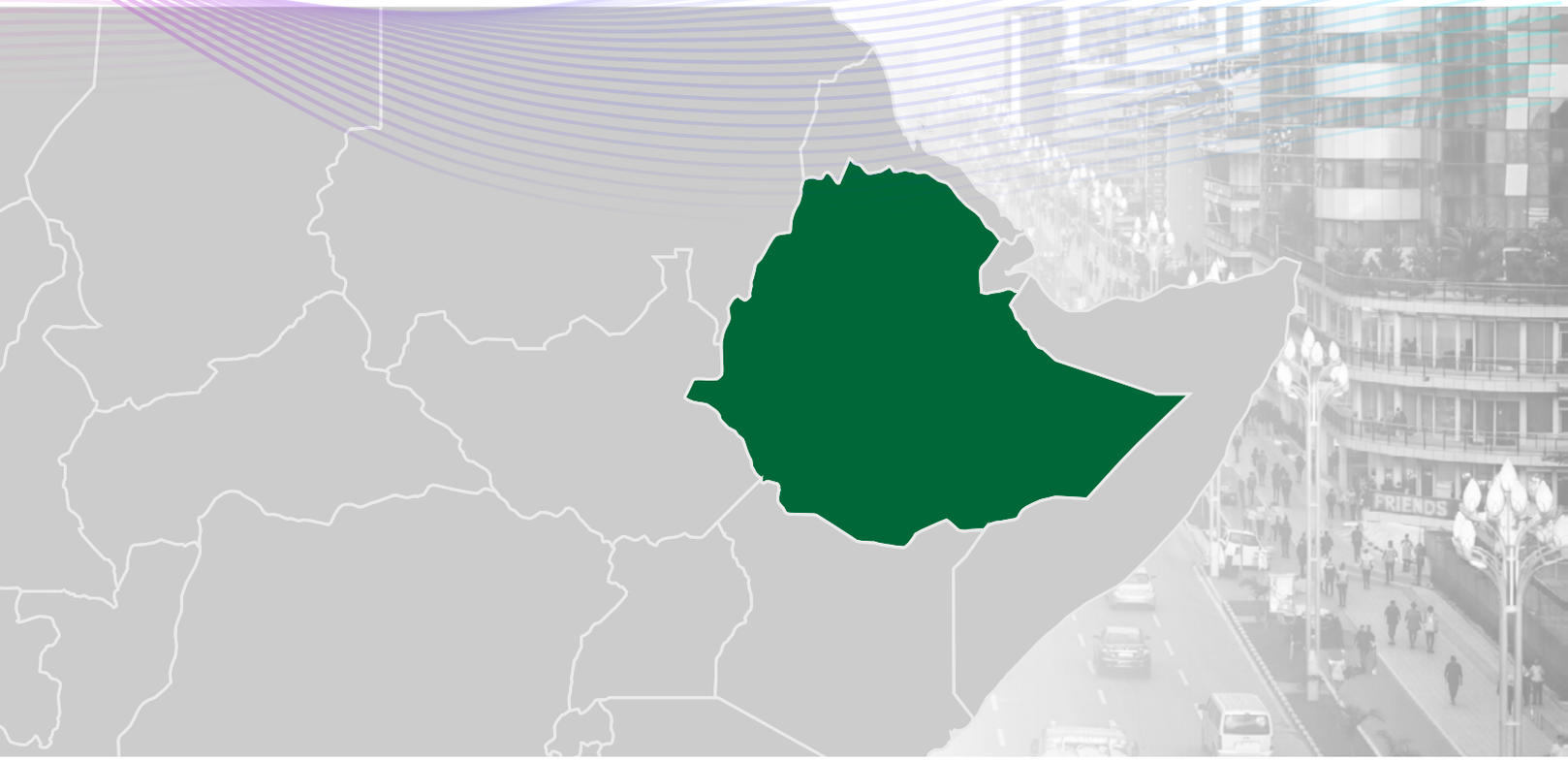


Figure 2: Regional Map - Ethiopia

2.1 OVERALL DESCRIPTION

The Federal Democratic Republic of Ethiopia is a country in Eastern Africa with a population of about 126.5 million in 2023, according to the World Bank, making it the second-largest population in Africa behind Nigeria. Ethiopia's capital and largest city is Addis Ababa, while its second largest city is the city of Dire Dawa, located on the Dechatu River in the eastern region of Ethiopia. As of 2024, Ethiopia was the fifth-largest economy in Africa behind South Africa, Egypt, Algeria, and Nigeria[1]. Ethiopia is landlocked, bordered by Sudan to the west, Eritrea to the north, Somalia to the east, Djibouti to the northeast, South Sudan to the southwest, and Kenya to the south.

The following estimates and ratios are taken from the data directly provided to the AFREC AEIS platform for 2022[2]. Biofuels and waste still account for the majority of primary energy supply (85%), followed by oil products with a marginally rising share from 6 to 10% between 2010 and 2022.

1 - https://www.statista.com/statistics/1120999/gdp-of-african-countries-by-country/

2 - This report relies on the most recent published dataset from AFREC's AEIS covering all 15 countries in the NEIS & Capacity Building project cohort for ease of comparison and consistency (2022). Individual countries have submitted and/or published more recent data.

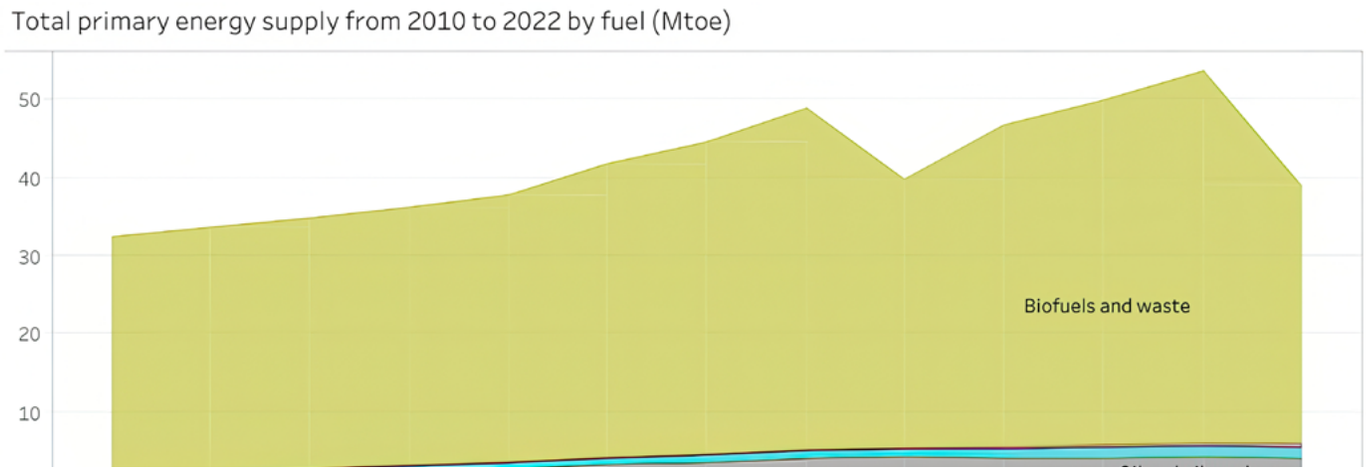


Figure 3 : Primary production (Source: AFREC)

Given its large rural population, which accounts for 77% of its total population, Ethiopia relies heavily on biomass energy to meet its energy needs. Approximately 82% of biomass consumption in Ethiopia in 2020 was attributed to the household sector, followed by the commercial and public sectors with 18%. Ethiopia's primary biomass sources include firewood, charcoal, agricultural waste, and animal waste.

Electricity generated primarily from hydroelectric sources is mainly used in the industrial and residential sectors, at 38% and 37%, respectively. Ethiopia has been heavily invested in growing its hydropower capacity in its electricity generation mix, including its largest project to date, the Grand Ethiopian Renaissance Dam (GERD), the largest hydropower project in Africa, with a generation capacity of approximately 6,450 MW upon completion[3]. The project was announced to be 94% completed as of early 2024. Hence, hydroelectric energy in 2022 accounted for the lion's share of power generation (92%), followed by Wind (5%) and a very marginal share of Biomass (<1%).

Figure 4 : Evolution of fuel shares of electricity generation (Source: AFREC)

Households account for the large majority of electricity consumption, with an 81% share, followed by commercial and public services (9%) and transport (8%).

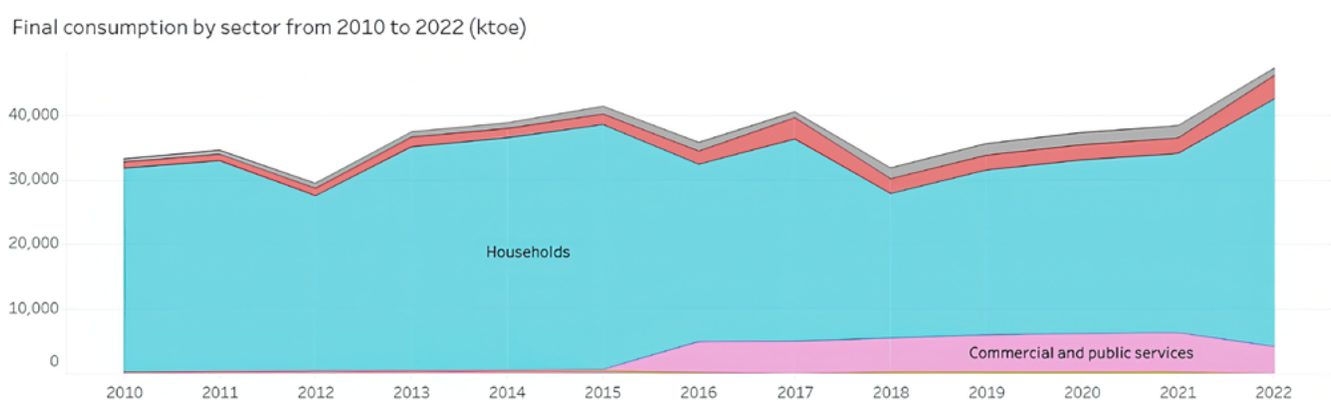


Figure 5 : Final consumption by sector (Source: AFREC)[4]

3 - **https://www.mowe.gov.et/en/project/grand-ethiopian-renaissance-dam-1**

4 - This section of the report relies on the most recently published data set on AFREC's website. Individual countries within the cohort may have submitted more recent energy statistics to AFREC or published them through their national processes

Ethiopia still faces serious challenges in expanding its electricity access, mainly in rural areas, with more than half its population lacking electricity. The Ethiopian Government introduced the national electrification plan (NEP) in 2017, hoping to achieve universal access to electricity by 2025. The plan aimed to connect 65% of the population to its national grid and provide the remaining 35% with off-grid technologies such as Solar Home Systems and Solar Mini-Grids, enabling a faster electrification rate in parts of the country lacking infrastructure.

As of 2022, access to electricity stood at approximately 55% of Ethiopia's total population, compared to just 20% in 2015[5]. This is due to the various bottlenecks faced by the NEP in recent years, particularly in the off-grid targets, including a challenging foreign exchange position and a lack of capital financing. Nonetheless, the government is implementing measures to mitigate these impacts. The total power generated in FY2022/23 amounted to approximately 17.7 billion kWh, a 14.2% annual increase[6].

2.2 ENERGY STATISTICS

The Ministry of Water and Energy (MoWE) is the entity responsible for energy statistics in Ethiopia. It oversees the collection, analysis, and dissemination of energy-related data at the national and local levels. The MoWE also manages the planning and implementation of energy policies, including renewable energy development, electrification projects, and energy efficiency initiatives.

The Ministry of Water and Energy (MoWE) supports the transmission of data from other affiliate institutions, such as;

- The Ethiopian Electric Power (EEP) – the public utility in charge of power generation, transmission, and international distribution (i.e., power export)
- and Ethiopian Electric Utility (EEU) – in charge of local power transmission and managing relations with end-users
- The Ethiopian Petroleum Supply Enterprise (EPSE) – the regulator that ensures that power purchase agreements (PPAs) and implementation agreements are consistent with the country's laws and regulations
- The Ethiopian Customs Commission (ECC) – a recently established entity (2018) in charge of managing and enforcing the national customs administration system to collect import and export duties
- The Ethiopian Sugar Industry Group (ESIG) – a state-owned enterprise overseeing the development, production, and distribution of sugar nationwide
- The Ministry of Mines (MoM) – in charge of regulating, monitoring, and promoting the exploration and production of all mineral resources, including coal, in the country
- The Ethiopian Statistics Service (ESS) – an autonomous federal government that collects, compiles, and disseminates all statistical data, surveys, and censuses relative to economic, social, and demographic data

The annual data collection process starts with the Ministry of Water and Energy (MoWE) issuing an official letter requesting data from its identified data providers listed above, detailing their data needs to prepare the imminent energy balance. MoWE then prepares an annual energy balance based on this information using the AFREC energy balance questionnaire format. The energy balance is published yearly using N-1-year data.

The production of the national energy balance can be divided into the following phases;

5 - https://www.worldbank.org/en/news/feature/2025/01/24/lighting-up-eastern-africa-access-to-energy-afe-rural-ethiopia

6 - AFREC meeting, Ethiopia Presentation

The production phases of the Energy Balance	
The first phase starts in May (2-3 weeks)	The data collection process begins with the official letter requesting the data from various providers who provide the source data, and addressing any follow-up questions from the Energy Modelling Desk (1-2 weeks). The data is then consolidated in physical units (1 week)
Second phase (1 week)	The following phase is data cleaning and processing, and going back to data providers as needed when comparing the newly sourced data to historical data on record
Third phase (2 weeks)	The data is then fed into Energy Balance Studio to produce an energy data table in energy units to produce electricity statistics and the National Energy Balance table
Fourth phase (2 weeks)	Once the data is finalized, the team will produce a narrative report and provide the AFREC EB. During this process, initial findings are circulated among staff to validate data trends and segments further, to conduct an internal presentation and team discussion to integrate team feedback into the narrative assessment

A crucial drawback in the current Energy Balance process is that there is no internal or external validation process to review the EB once it is produced. Data providers, other public entities, and stakeholders are not approached for feedback on the finalized EB, which hinders further gains in data quality and robustness. Hence, the EB and accompanying narrative report are only provided upon request by interested stakeholders like the IEA, IRENA, and AFREC.

However, a few ongoing initiatives would help gather relevant energy data more consistently to support national and decentralised energy planning processes.

2.3 PARTICIPATION IN THE AEIS

Ethiopia currently provides data to the African Energy Information System (AEIS) on an N-2 basis, as detailed in the table below. Ethiopia's most recently published energy balance data in the AEIS is for 2022.

MoWE does not disseminate energy statistics to other organizations on a systematic basis; this is only done upon request from the relevant organization. However, the Energy Data Administration and Modelling desk at MoWE regularly shares data with AFREC and IEA on an ad hoc basis.

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

Table 2: Data provided to AFREC

3 ENERGY STATISTICS DIAGNOSTIC REPORT

This diagnostic was developed through close collaboration with the AFREC National Focal Points (NFPs) within the MoWE. The results are based on structured interviews covering the institutions, resources, and statistical processes in place and a detailed review of the data and documentation shared by the AFREC NFPs. 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 the significant steps for energy statistics processes (data collection, data processing, 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 thematic area and proposes recommendations and actions. These prioritized actions are then used to develop an Action Plan for enhancing the NEIS in Section 4 of this document.

3.1 INSTITUTIONAL & LEGAL ENVIRONMENT

3.1.1 CURRENT SITUATION

Energy data is governed in Ethiopia by the Proclamation No. 1263/2021 "Definition of Powers and Duties of the Executive Organs Proclamation," published in January 2022 in the Federal Negarit Gazette[7]. Proclamation No. 1263/2021 specifies the powers and duties of the executive organs, whereby the MoWE is mandated to set policies, strategies, and laws regarding water and energy in line with national development and to 'establish a system to facilitate the collection, organization, and utilization of data of water and energy resources'.

Energy statistics in Ethiopia are primarily governed by the Proclamation mentioned above, as it:

7 - https://faolex.fao.org/docs/pdf/eth216431.pdf

- Restructures the energy sector by forming the Ministry of Water and Energy (MoWE) and attributing Its mandate over the energy and water sectors thereby replacing (i) the Ministry of Water and Energy; (ii) the Secretariat of Water Fund, (iii) Water Development Commission; (iv) and Basin Development Authority. The Proclamation gives the MoWE the mandate for national energy and water planning.
- Establishes new bodies and agencies such as the Petroleum Supply Enterprise (PSE), accountable to the Ministry of Trade and Regional Integration, effectively replacing the Petroleum and Petroleum Product Supply and Distribution Regulatory Authority and Energy Authority.
- Establishes the MoWE as the principal entity responsible for collecting, analysing, and disseminating data for the energy and water sectors.

Outside of the Energy and Water sectors, the Ethiopian Statistics Service (ESS) is the designated autonomous federal government body, accountable to the Ministry of Planning and Development, allocated a strong mandate concerning collecting, compiling, analysis, publication and disseminating general statistics in Ethiopia with an additional role of coordinating, monitoring and supervising the National Statistical System (NSS). It effectively replaced the Central Statistics Authority established in 2005.

As described in section 32 of the Proclamation, as it relates to the energy sector, MoWE is responsible for:

- Policy and Strategy Development: Formulate and implement policies, strategies, and laws for water and energy aligned with national development plans.
- Data Management: Establish systems for collecting, organizing, and utilizing water and energy data.
- Resource Development: Facilitate the expansion of water and energy resources and the electric power supply.
- Renewable Energy: Promote electricity generation from renewable sources like water and wind to mitigate power shortages.
- Private Sector Participation: Foster private sector involvement in energy development through supportive frameworks.
- Rural Energy: Coordinate, encourage, and support rural energy development activities.

However, there is little clarity on the legal framework that defines the interactions between the different institutions, MoWE, PEA, and ESS, regarding energy planning and relevant data-related tasks. Furthermore, there is no explicit institutional framework that details the national (and county level, where possible) “macro” energy statistics, as opposed to localised energy data (georeferenced infrastructure, disaggregated power demand figures, county-level energy supply and demand and projects, etc.) which presumably falls under the larger mandate of the MoWE.

The energy modelling desk at the MoWE in Ethiopia comprises five members well-versed in statistics. The team is mandated to collect, process, and disseminate all statistics related to the energy sector and functions as a centralized resource for national energy statistics. The team collects data from public entities and parastatal companies. It distributes statistics, indicators, and a narrative report ad hoc to public authorities and international stakeholders such as AFREC, IEA, and IAEA.

The diagram below illustrates the institutional environment in which the energy modelling desk operates.

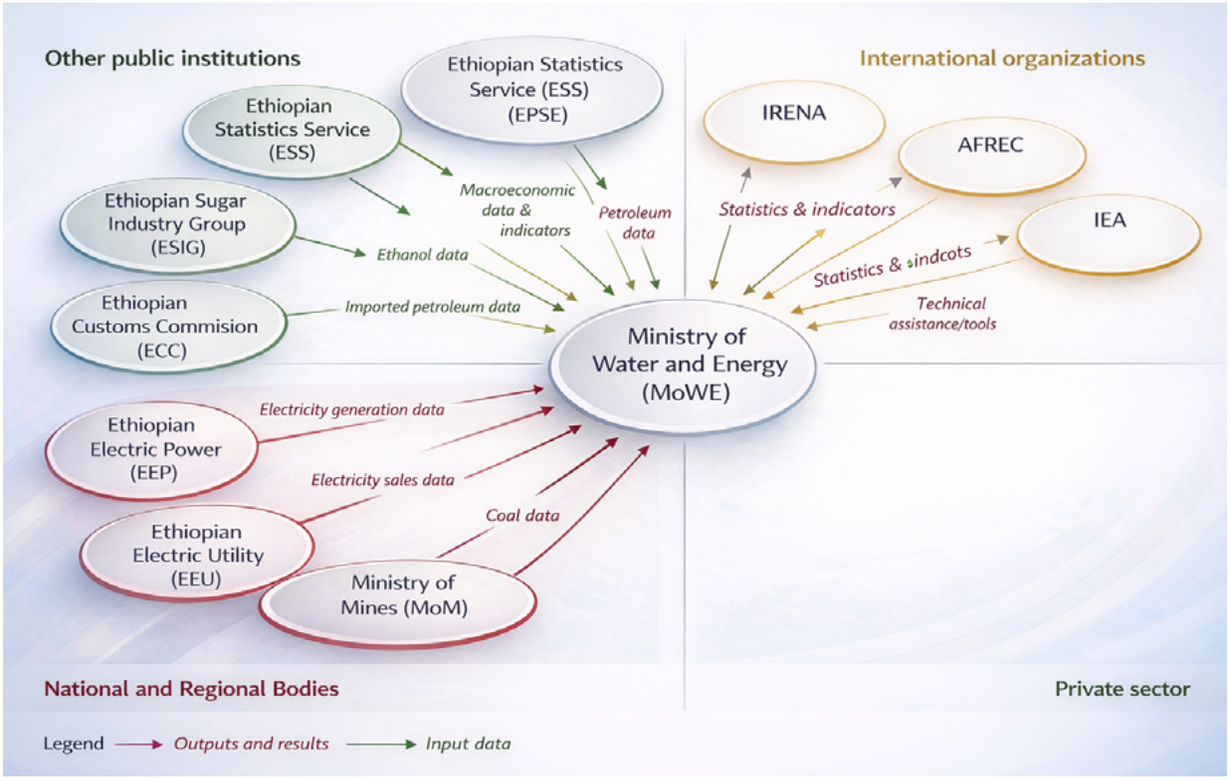


Figure 6 : Institutional environment

3.1.2 ASSESSMENT AND GAP ANALYSIS

Three main limitations have been observed concerning the institutional & legal environment:

N°	Key issues/gaps	Description
1.1	Lack of coordination between stakeholders	Further collaboration and coordination between the stakeholders and the different institutions are needed to ensure the efficient sharing of relevant data flows.
1.2	Lack of stakeholder engagement	No codified process allows stakeholders and data providers to engage and validate energy statistics.
1.3	The absence of allocated funds for energy statistics	The Energy Modelling team does not have a defined and allocated budget that permits engaging in further required data collection on key areas of interest, like biomass consumption, or to enable effective dissemination of results

Table 3 : Institutional environment gap assessment

3.2 HUMAN & MATERIAL RESOURCES

3.2.1 CURRENT SITUATION

HUMAN RESOURCES

The Energy Data Administration and Modelling Desk at the Ministry of Water and Energy collects and produces energy-related statistical data in Ethiopia. Five members contribute to the mission's upkeep and, as AFREC NFPs, transmit statistics to AFREC.

MINISTRY OF WATER AND ENERGY

Name	Job title/ position & Institution	Role in the NEIS/EB	Time dedicated to NEIS/EB (%)	Training/background
Ebisa Regasa	Senior Energy Statistician, Ministry of Water and Energy, MoWE	AFREC NFPs Coordinator and in charge of Energy Balance Statistics	Temporary – several times per year, punctual engagement	BSc. in Statistics and MBA in Business Administration
Tinsae Wondimu	Senior Energy Economist, MoWE	AFREC NFP for Energy Efficiency	Temporary – 1 time per year, punctual engagement	BA in Economics and MA in Development Economics
Meron Tefera	Energy Modelling Expert, MoWE	AFREC NFP for power plants, taxes, and prices	Temporary– 1 time per year, punctual engagement	BSc in Statistics and MA in Management
Tesfu Kidane	Energy Modelling Expert, MoWE	In charge of collecting Energy data and analysing with the Energy Modelling team	Temporary– 1 time per year, punctual engagement	BSc in Statistics
Abebe Gete	Energy Statistician, MoWE	In charge of collecting Energy data and making analyses with the Energy Modelling team	Temporary– 1 time per year, punctual engagement	BSc in Statistics

Table 4 : Human resources dedicated to AFREC energy statistics

The Energy Data Administration and Modelling Desk at MoWE also manages energy statistics data collection, compilation, and dissemination (other than to AFREC). The team's mandate includes data collection, processing, and dissemination of the Energy Balance and other energy-related indicators.

MATERIAL & IT RESOURCES

The available material resources and IT infrastructure are:

- **Offices:** The team has adequate access to boardroom facilities and individual office spaces.
- **Computers & Software:** Sufficient computer resources at the Energy Statistics team's disposal at MoWE, with access to the Energy Balance Studio[8] (EBS), which is the team's primary tool, in addition to Excel. No other software packages are used to manage data effectively at MoWE; desktop and/or laptop computers have access to Excel, but they are generally older models with limited processing capacity or memory.
- **Models or technical tools (e.g., sectoral models, LEAP):** Analytical modelling falls within MoWE's remit. Team members are not technically trained to operate these technical tools and, therefore, have limited access, as they are generally not centralized or maintained and are deployed on a project-by-project basis.

8 - Energy Balance Studio (EBS) is a computer-based tool based on the UNSD questionnaire and can be used to prepare the energy balances.

- **Server & IT Infrastructure/Internet:** MoWE has an available server not dedicated to the Energy Modelling Desk. There is adequate relevant infrastructure for printer, scanner, and copier connections. Access to the server via Ethernet (LAN) and Wi-Fi is available. However, the team lacks access to reliable network connections during field missions and work-related travel, which can hinder effective communication and coordination.
- **Budget:** Without a specific budget, NFP activities are included in MoWE's internal budget unless outside support is received for a particular project.
- **Additional resources:** MoWE has an effective but underutilized infrastructure for data collection across the country, comprised of Regional Energy Offices across its 12 states/regions, due to a lack of coordination and financial facilities.

3.2.2 ASSESSMENT AND GAP ANALYSIS

Despite having a dedicated statistics section with a small dedicated department and human resources, MoWE lacks effective management and coordination of energy statistics. NFPs are MoWE officers with statistician and economist profiles, and they participate in AFREC activities and energy statistics compilation on a part-time, punctual basis once a year. There is a highlighted need for specialized training in energy modelling and data management. The energy desk can benefit from dedicated in-person training to master energy balance notions, data quality, and relevant software solutions, as limited material resources are available to support sustained data tracking, storage, or analysis.

The Energy Modelling Desk in MoWE works independently and is siloed from other relevant statistical bodies, such as the Ethiopian Statistical Service. The latter is well equipped for data collection and might be able to provide further guidance and logistics facilities to enhance the energy data collection process. However, additional training is still needed to contribute efficiently. A trained liaison in MoWE who is also involved in the planning data would help link the institutions to provide accurate energy statistics.

From a material perspective, MoWE's IT infrastructure appears to be sufficient. Given the institution's human and material resources and strong legal mandate, using MoWE's infrastructure to host an operational NEIS instead of the Prime Minister's Office seems the most efficient way forward.

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

N°	Key issues/gaps	Description
2.1	No tailored and specialized energy data management and software training for MoWE	Despite having a designated statistics team, additional training is required to gain confidence and ownership with energy-specific analytical methodologies and statistics.
2.2	Need for capacity building on biomass and energy efficiency subsectors	Statistics officers are comfortable with electricity and petroleum subsectors but have less experience with biomass and energy efficiency statistics, which are still nascent. Specific training on sub-sector value chains, statistical calculations, and methodologies for estimating indicators on this subject may be required.
2.3	Need for capacity building on advanced Excel/Data management skills	Statistics officers are using an Excel template provided by AFREC. However, much of the statistics officers' time is spent on repetitive tasks that could be streamlined with more efficient data management or advanced Excel skills. Training on these subjects is linked to improvements to the statistical infrastructure (see section 3.5).
2.4	There is a need for improved IT infrastructure at MoWE to support expanded data activities.	IT resources at MoWE appear insufficient to allow staff to expand their contribution to data management and analysis while maintaining a NEIS.

Table 5 : Human and material resources gap assessment

3.3 DATA COLLECTION

3.3.1 CURRENT SITUATION

MoWE is mandated by law to collect all energy data by Proclamation 1263/2021. For each sector, the raw data (Production, Import/Export, Transformation, End Uses) used for generating the Energy Balance and energy statistics is collected as follows:

Sector	Description of data collected	Demand/End uses	Problems/challenge
Oil & gas	Petroleum product data will be submitted to MoWE on an annual basis upon request through an official letter from MoWE to both the Ethiopian Petroleum Supply Enterprise (EPSE) and the Ethiopian Customs Commission (ECC) for sales and imports, respectively, as per the standard templates for each institution.	• Data provided in physical units (barrels of oil and cubic meters as the unit of measurement), with limited information on fuel characteristics • Data is not disaggregated by end use or sector	• Excel extracts from source databases with no specific template
Electricity + Renewable energy - hydropower	EEU and EEP provide data to MoWE for national power plants, including: consumption data by sector (HH, Transport, Industry, Commercial, and own-use); Generation data, bulk power sales, etc. Hydro, wind, solar, thermal, and imports	• Data is generally comprehensive and covers all requirements • Reporting will be for primary grid, mini-grids, off-grid, and prosumers • GWh is the unit of measurement.	• Upon request, data is collected on an annual basis • Excel extracts from source databases with no specific template
Biomass	MoWE bases its data on an outdated household biomass survey[9] (2013), with no systematic supply, transformation, and use data readily updated and available.	• Need for surveys to obtain data	• N/A
Energy Efficiency	MoWE provides some EE indicators that are estimated based on the National Energy Balance. A method that provides little accuracy/consistency. EE requires more stakeholder engagement (Ethiopian Standards Agency (ESA), Transport sector, etc.) and data collection (appliance info, etc.)	• N/A	• N/A

9 - https://rise.esmap.org/data/files/library/ethiopia/Clean%20Cooking/Ethiopia_Biomass%20energy%20strategy%20Ethiopia.pdf

Sector	Description of data collected	Demand/End uses	Problems/challenge
Economic and Demographic	MoWE sources its economic and demographic data from the ESS. The ESS conducts annual Socioeconomic Panel Surveys (latest edition is 2023), including a chapter on household energy profiles and use The most recent population census dates to 2007; initial plans to conduct a new census in 2017 seem to have been shelved indefinitely[10]	• Data is generally comprehensive and covers most requirements	• Socioeconomic Panel Survey Typically published by ESS on an annual basis

Table 6 : Sectoral data collection sources and procedures

The annual data collection process lasts 4 months, generally between October and February. Data is collected at N-1 and the dedicated team uses questionnaires to collect data from partners and uses published statistics.

Questionnaires are sent to:

- Electricity, Oil industry
- Mining companies
- IPPs
- Eswatini Revenue Service
- Other major industries or commercial companies in the country.

3.3.2 ASSESSMENT AND GAP ANALYSIS

MoWE is well-positioned and has a firm legal mandate to collect energy data. However, it lacks a centralized, structured operational framework for data sourcing and dissemination. It does not have assigned FPs or representatives from each institution from which it sources data, but rather a generic contact used for data collection communication once a year.

MoWE's broader structure includes an underutilized infrastructure for data collection nationwide. This consists of a Regional Energy Office in its 12 states/regions, which are not fully utilized as data collection centres.

The most critical limitation is biomass data, which would require a specific survey. MoWE has been unable to collect new data on household biomass use and has been using outdated data from a 2013 national household survey on biomass. There is room for improvement on end-use data for petroleum products or electricity to follow the ISIC classification and provide accurate, detailed breakdowns.

The following table summarizes the principal issues and gaps that emerge from the diagnostic regarding data collection and potential solutions for addressing each challenge.

10 - https://www.wilsoncenter.org/blog-post/ethiopias-forgotten-census

N°	Key issues/gaps	Description
3.1	Lack of data on biomass and energy efficiency	No available data on the biomass subsector and for energy efficiency; only aggregated estimated data, no consumption surveys or other primary data collection are currently scheduled.
3.2	Challenges engaging with partner institutions for data collection	Lack of capacity and lack of awareness in partner institutions of the importance of collecting and processing energy data and turnover of focal points or management changes causes difficulties in collecting data; need for training for the main focal points
3.3	Lack of a standardized and codified data collection framework	Lack of guidelines for energy statistics that provide information to team members and outside stakeholders on key definitions, data requirements, formats, and compilation procedures.

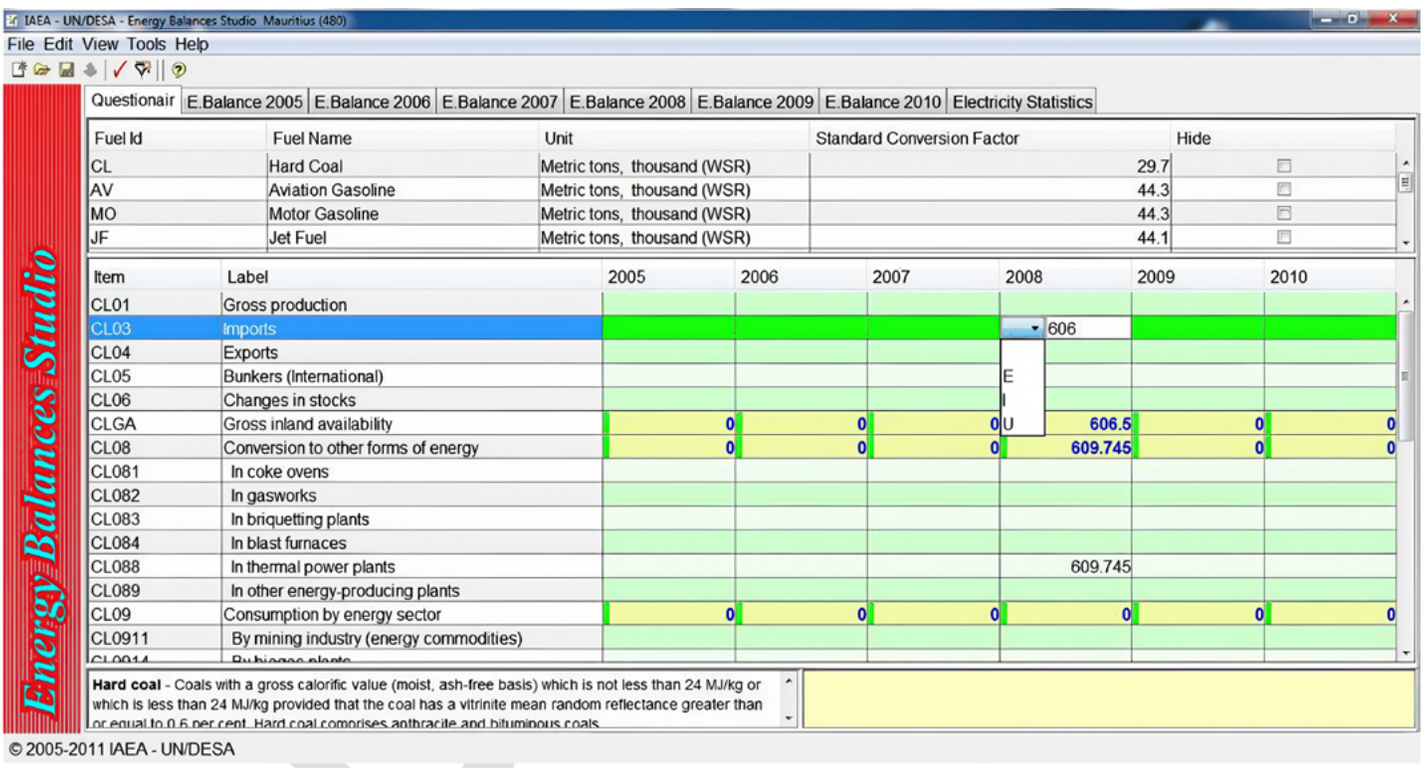
Table 7 : Data collection gap assessment

3.4 DATA PROCESSING

3.4.1 CURRENT SITUATION

TECHNIQUES & TOOLS FOR DATA PROCESSING

Once the data has been collected from the various data providers, the team inputs the compiled and cleaned data into the Energy Balance Studio (EBS) software, which is compatible with international guidelines and practices based on the UNSD template. Calculations not provided in the software are done "off sheet" in an Excel file on an ad-hoc basis. Once compiled and processed in the EBS, the Energy Balance output is fed into the AFREC energy balance format for transmission to AFREC.



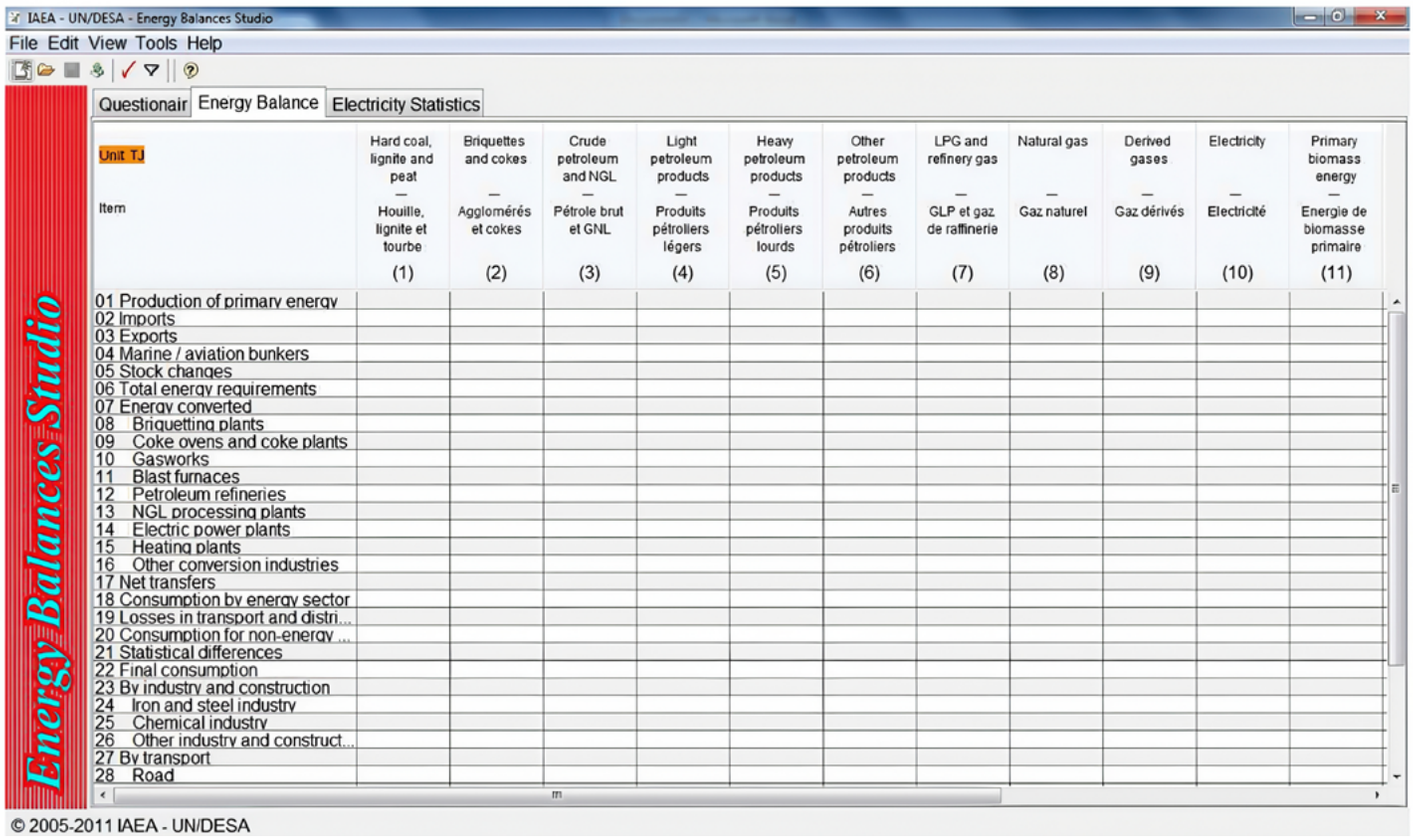


Figure 7 : EBS format for energy balance

METHODOLOGY OF DATA PROCESSING

Data processing is managed through three steps: (i) raw data processing followed by (ii) data calculation and adjustments, and (iii) data analysis and visualization. The overall process takes approximately 1 month once raw data has been collected.

COMPLETION OF AFREC QUESTIONNAIRES AND OTHER ENERGY STATISTICS MODELS

AFREC questionnaires are filled based on finalized data consolidated by MoWE in Excel format.

3.4.2 ASSESSMENT AND GAP ANALYSIS

Ethiopia currently does not have an operational NEIS or a dedicated tool for data processing and intermediate calculations. Data is collected in various thematic Excel workbooks and then consolidated into the required indicators using the IAEA's Energy Balance Studio (EBS) tool based on the UNSD Energy Balance template and AFREC questionnaires for energy balance statistics. Energy efficiency statistics, based on aggregate estimates, are currently being prepared and submitted to AFREC based on their request.

Various visualizations or a comprehensive narrative report are prepared at the end of the data finalization process and are only circulated upon request to relevant national and international organizations. The energy indicators do have significant gaps regarding biomass and end-use breakdown.

Excel presents some inherent limitations in terms of security, versioning, and the capacity to have multiple active users, which limits the potential for collaboration between MoWE and other relevant regional bodies, for instance, on energy statistics data. However, this barrier could be overcome with sufficient processes for tracking reference versions without changing platforms.

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

N°	Key issues/gaps	Description
4.1	Lack of a dedicated tool for tracking and compiling energy statistics	The current Excel spreadsheets and the EBS tool used at MoWE are not interlinked into a structured tool, so compilation and calculation must be done manually.
4.2	Limited capacity for collaboration with the current infrastructure	Excel sheets and a lack of processes for working across institutions generate risks related to versioning, security, etc., and act as a barrier to enhanced collaboration between MoWE and its regional offices and other relevant public institutions
4.3	Lack of comprehensive output indicators	Infrastructure does not generate detailed indicators for the energy sector (e.g., energy by end-use, energy efficiency).

Table 8 : Data processing gap assessment

3.5 QUALITY ASSURANCE AND VALIDATION

3.5.1 CURRENT SITUATION

Quality assurance and data validation are currently conducted through only one mechanism: internal checks made by the MoWE Energy modelling desk team.

The data is only subjected to internal checks within the Energy Modelling Desk at the MoWE but is not subject to further validation with data suppliers or other relevant stakeholders. Once validated internally through a team meeting, a narrative report is then prepared for internal dissemination in paper format within the MoWE.

3.5.2 ASSESSMENT AND GAP ANALYSIS

The lack of external or broader internal validation is a vital drawback and directly affects data quality and robustness. Data validation ensures coherent and robust energy statistics through a collaborative and interactive process that groups all relevant stakeholders from data providers to policymakers and international partners. Engagement with stakeholders through bilateral or multilateral meetings should be vital in finalizing energy statistics before dissemination, as it generally adds value to the quality assurance process without generating significant delays.

In addition to including appropriate automated internal checks in whatever statistical tool is developed to support the NEIS, expanded top-down checks or historical comparisons are necessary to ensure consistency from year to year. The energy balance data presents significant statistical differences, and a system for reducing or explaining clearly the source of these differences is required.

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

N°	Key issues/gaps	Description
5.1	Limited internal checks in the 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	Lack of an external validation process	We need to implement a process, such as an annual workshop or technical committee, to ensure the active participation of institutions/agencies in a comprehensive validation process through a yearly meeting. This will allow us to benefit from various stakeholders' insights and further review, provide technical input, and validate. This process can mainly include relevant representatives from MoWE, the Ministry of Mines (MoM), the Ethiopian Petroleum Supply Enterprise (EPSE), the Ethiopian Statistical Service (ESS), the Ethiopian Electric Power (EEP), the Ethiopian Electric Utility (EEU), etc.
5.3	No information on indicator reliability or checks against international standards	Quality assurance processes remain relatively simple and do not include a precise classification of indicators by "reliability" to indicate the confidence level concerning the accuracy of outputs or their compliance with international standards. Therefore, they do not highlight the areas where data should be improved over the long run. This is, thus, one of the areas needing improvement and/or upskilling.
5.4	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.

Table 9 : Quality assurance and validation gap assessment

3.6 DISSEMINATION AND ANALYSIS

3.6.1 CURRENT SITUATION

MoWE does not publish reports on energy statistics or national energy balance; editable datasets have not been published, and the limited number of energy-specific reports that are being produced (annual report, energy brief, and brochure) are not disseminated due to financial and technical constraints. However, the Energy Modelling Desk does respond to ad hoc written requests from agencies, the private sector, and academia.

Hence, there are currently no structured internal mechanisms for dissemination across public and para-public institutions. MoWE does, however, consistently deliver the annual energy balance for AFREC and upon request to partner organizations like the IEA and IAEA.

MoWE does not conduct any specific dissemination activities. Data to contribute to policy making is collected ad hoc for each new initiative. This inefficient approach can lead to inconsistencies or a lack of robust information to contribute to decision-making promptly.

3.6.2 ASSESSMENT AND GAP ANALYSIS

There is a need to strengthen links between the Energy Modelling Desk at MoWE and other government end users at MoWE, notably in the Planning Department. The Energy Modelling Desk does not provide in-depth analytical output for the energy sector but rather a narrative piece that is not adequately disseminated publicly or internally in the appropriate channels. MoWE is mandated to conduct energy planning and policy-making analyses but cannot further feed this process with the needed analyses based on the Energy Modelling Desk's current production, highlighting the need for further appropriate training and financial and logistical support.

Furthermore, dissemination could be further streamlined by establishing a standard dataset for analytical purposes for distribution by the Energy Modelling Desk to potential institutional users within MoWE or

other institutions. This dataset could show detailed indicators for all energy sources with current and historical data. It could be delivered in a protected Excel format to allow users to feed the data directly into their analytical tools, thus avoiding manual re-entry from a PDF report format.

Finally, there is a need to raise the profile of energy statistics internally at MoWE and amongst other public and para-public organizations and to raise awareness of the processes and energy statistics activities undertaken by the dedicated Energy Modelling Desk. Among other means, dissemination could be via a national annual workshop jointly organized by MoWE with involvement from all stakeholders, the private sector, civil society, and the press.

N°	Key issues/gaps	Description
6.1	Data/trend interpretation	Limited knowledge of specific energy modelling/statistics areas at MoWE limits the team's capacity to enhance analysis by interpreting trends or data, effectively using available statistics to produce analytical output, or contributing to regular monitoring or decision-making.
6.2	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.
6.3	Low public and institutional profile of energy statistics and data collection work	Low visibility of energy statistics processes and outputs 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.

Table 10 : Diagnosis of dissemination and analysis

3.7 ANALYSIS AND RECOMMENDATIONS

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

MoWE has a mandate and a dedicated team to produce and disseminate energy statistics, and it creates the Energy Balance and an accompanying narrative report annually. There is a clear need for effective dissemination in a structured manner that gathers most key stakeholders for regular data collection, harmonization, and coordination meetings. These initiatives constitute a core strength the team can build through reinforced data collection, notably for the biomass and energy efficiency sectors, and through improved tools for data storage and compilation.

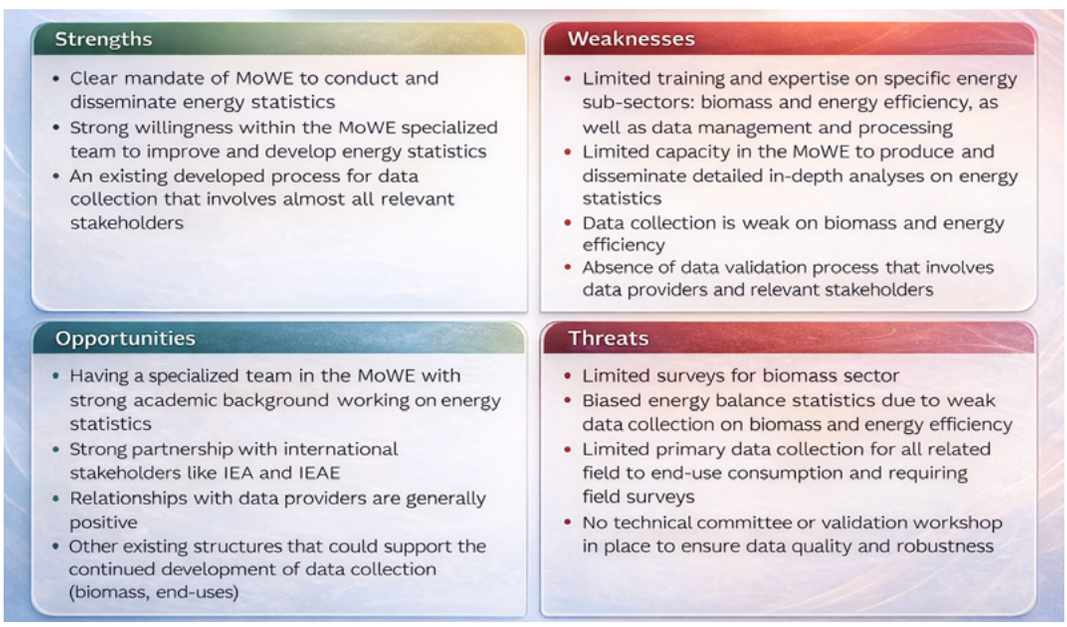


Figure 8 : SWOT Analysis

Based on the results of the diagnostic and gap assessment, we recommend that high-level energy statistics on consumption, transformation, and supply at the national, sectoral, or sub-national level is well-positioned to remain at the responsibility of the Energy Modelling Desk at MoWE, which requires reinforcement of the systems and processes already in place. MoWE should expand and systematize its collaboration with relevant public institutions and stakeholders to ensure a strong two-way flow of information and inputs between the organizations regarding these statistics, and should retain responsibility for and develop capacity to manage, store, use and disseminate more detailed data required in energy planning and policy assessment processes (infrastructure locations/characteristics, planning data sets on electricity demand, technology costs, etc.) that are not currently covered.

Seven key recommendations for strengthening Ethiopia's energy statistics emerge from the diagnosis and gap assessment. These recommendations are designed to build on the strengths of the statistics processes and team, address the primary weaknesses or threats identified in the SWOT analysis above, and align with the IRES recommendations where possible. The recommendations are classified according to their importance, and each bullet point in the list below represents a specific objective for developing energy statistics in Ethiopia.

RECOMMANDATIONS

A. 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 across different agencies. 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.

B. Improve cooperation between Institutions to rationalize resources and enhance synergies

A The Ethiopian Statistical Service (ESS) and the Energy Modelling Desk within the MoWE must collaborate closely to harmonize data collection methodologies, integrate energy statistics into national surveys and censuses, and implement quality control mechanisms.

B The ESS can ensure compliance with international statistical standards, while the MoWE can provide sector-specific expertise in developing energy survey questionnaires.

C Establishment of shared databases and automated data exchange protocols for real-time integration.

D Integrating energy-specific questionnaires into national census and socio-economic surveys is already scheduled for cost-effective and comprehensive data gathering.

C. Enhance technical and logistical capacities within MoWE

A **Reinforce the Energy Modelling Desk in MoWE's capabilities in terms of technical and logistical support. In the short term, this should provide detailed in-person** training on general energy modelling methodology and specialized training on biomass and energy efficiency.

B **Leverage links with regional energy offices throughout the country. Currently, the Energy Modelling Desk does not enlist the regional energy offices to collect data on a regional level**, which could be of added value for specific questions on biomass energy consumption.

C **Strengthen links with other institutions** by consulting them systematically in MoWE energy data-related committees to support data identification and collection in projects that require it.

D. Improve and expand data collection on key challenging areas

A **Improve data collection on biomass supply and demand**. The diagnostic reveals significant gaps in biomass data: a national survey covering households and enterprises should be conducted as a priority. Improving biomass data will also require training for the Data Modelling Team to improve sectoral knowledge, technical coordination with bio-energy experts within MoWE, and continued outreach to new stakeholders to improve secondary data collection on these sub-sectors.

B **Improve data collection for end uses, in particular for petroleum products**, by adding or adapting relevant questions on energy to existing household or enterprise surveys, if available

C **Support the development of a structured data validation process nationally by conducting an annual validation workshop or technical committee** to ensure effective and sustainable participation from data providers and organizations within the energy sector and other organizations with mandates on related subjects such as trade, forestry, and transport. Budgetary support may be required to ensure the committee meets regularly and fulfils its role. MoWE should host this committee.

E. Upgrade statistical tools to the requirements of a NEIS

A **Develop data management capacity: As data quality and coverage expand**, the Energy Modelling Desk at MoWE will need to manage ever-expanding and complex data sets. All team members should receive basic training on best practices and techniques for data management in Excel, and one/two team members should be selected as a focal point for more in-depth training on database management and tools to anticipate future changes in the statistical infrastructure.

F. Structure and Facilitate Data Dissemination

A **Prepare and publish energy reports prepared by MoWE and distribute them to a public audience**. This will raise the visibility of the MoWE to external stakeholders, facilitate users' access to statistics and information on the energy sector, and help contribute to timely public or technical debates on energy policy issues

B **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, hosted by MoWE.

C **Build capacity on energy Statistics/Economics, and data analysis to expand the analytical output of the team:** The role of the MoWE Energy Modelling unit is to collect data, produce energy statistics, and analyse specific subjects. Currently, the MoWE team reports a lack of time, resources, 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 contributing to specific MoWE projects.

G. Sustain, evaluate, and formalize energy statistics processes

A **Formalize processes related to the energy statistics mandate:** MoWE has a clear institutional mandate to collect and generate energy statistics, and it looks best positioned to host a NEIS in Ethiopia. It is, however, essential to formalize and clarify the role of MoWE concerning energy data with a Proclamation or internal document to provide further guidance on data management in support of this role. It is also helpful to sign MOUs with the relevant stakeholders and data providers to; (i) assign a specific focal point within each body assigned to the duty of providing relevant data and communication, (ii) clarify the working relationships between institutions, (iii) limit disruptions in the event of a management change, (iv) and materialize the future collaboration on the data validation committee.

B **Ensure continuity in statistics activities with written processes and user manuals:** It is crucial to produce an Energy Statistics guidelines book to ensure the sustainability and continuity of data collection and statistics compilation processes and concepts. Furthermore, considering the potential turn-over of staff involved the energy statistics and the expected expansion of relevant areas of further data collection and analysis, it will be necessary over the longer term to develop a user guide and manual for key tools and processes, as well as training materials for potential new hires to ensure that knowledge and methods are harmonized and perpetuated.

C **Review and evaluate the statistics process, outputs, and training needs regularly:** 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 policy-makers, 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 five years and aims to improve energy statistics and establish a fully functional NEIS by the end of the period in accordance with international standards recommendations.

The plan comprises 31 prioritized actions spread across four implementation phases from 2025 to 2029. While many actions can be achieved by the existing team with few additional resources, implementing the entire action plan is expected to require approximately US$477,500 to US$765,500 in financial resources. These are primarily service costs to develop the statistical infrastructure and tools, and a budget for in-depth training for thematic focal points. The plan also identifies approximately US$1000 to US$2000 in annual recurring costs, primarily to cover the cost of holding annual data validation and dissemination/sensitization workshops. Additional human resources are, however, expected to be required to support the development of a NEIS in Ethiopia, integrating a data unit in the MoWE.

4.1 IDENTIFICATION AND PRIORITIZATION OF REQUIRED ACTIONS

The table below outlines the key actions necessary to implement each recommendation effectively. These actions are prioritized using an analytical framework that evaluates them based on two key criteria: their expected impact in achieving the primary objectives and the level of effort or resources required for execution. A project is classified as high effort if it entails significant financial costs, substantial human resource demands, or relies heavily on external factors beyond the direct control of the relevant stakeholders. The impact assessment considers the extent to which each action contributes to the goal of establishing a National Energy Information System (NEIS) and the specific objectives detailed in the second column of the table.

Based on this classification, the action items are grouped into four priority categories, as illustrated in the diagram below.

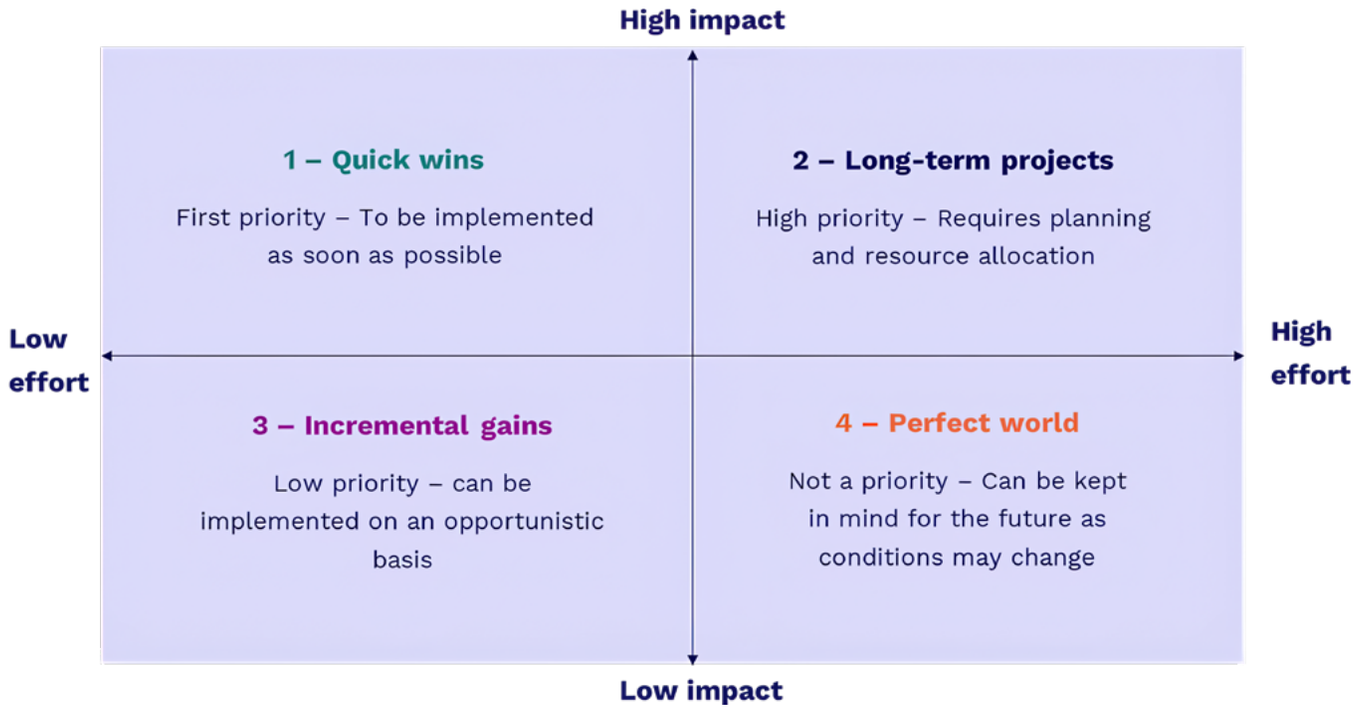


Figure 9 : Prioritization matrix

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 Further enhance data quality and put in place a structured validation process.	**A. Reinforce data exchanges**	1A.1	*Standardize reporting protocols by developing templates and methodologies for data collection and reporting to ensure consistency across different agencies.*	**1**
		1A.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**
	B. Instate formal data verification and validation processes	1B.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**

2 Improve cooperation between Institutions to rationalize resources and enhance synergies	**A. Foster closer collaboration between ESS and MoWE**	2A.1	*The Ethiopian Statistical Service (ESS) and the Energy Modelling Desk within the MoWE must collaborate more closely to harmonize data collection methodologies, integrate energy statistics into national surveys and censuses, and implement quality control mechanisms.*	**1**
	B. Effective division of responsibilities between the two entities	2B.1	*The ESS can ensure compliance with international statistical standards, while the MoWE can provide sector-specific expertise to develop energy survey questionnaires, for Instance.*	**1**
	C. Establish shared database and automated data exchange protocols in real time	2C.1	*Establishment of shared databases and automated data exchange protocols for real-time integration.*	**3**
	D. Integrating energy-specific questionnaires into scheduled national surveys and the Census	2D.1	*Integrating energy-specific questionnaires into the national census and socio-economic surveys is already scheduled for cost-effective and comprehensive data gathering.*	**2**
3 Enhance technical and logistical capacities within MoWE	**A. Reinforce the Energy Modelling Desk's technical and logistical capabilities**	3A.1	*In the short term, this should provide detailed in-person training on general energy modelling methodology and specialized training on biomass and energy efficiency.*	**1**
		3A.2	*Train the team on options for NEIS structure and design.*	**2**
		3A.3	*Identify the key requirements for an infrastructure design and develop specific terms of reference.*	**2**
		3A.4	*Develop, test, and operationalize statistical infrastructure design.*	**2**
	B. Leverage links with regional energy offices throughout the country	3B.1	*Currently, the Energy Modelling Desk does not enlist the regional energy offices to collect data on a regional level, which could be of added value for specific questions on biomass energy consumption.*	**1**
	C. Strengthen links with other institutions	3C.1	*Consulting them systematically in MoWE energy data-related committees to support data identification and collection in projects that require it.*	**1**

4 Improve and expand data collection	**A. Improve data collection on biomass supply and demand**	4A.1	*The diagnostic reveals significant gaps in biomass data: a national survey covering households and enterprises should be conducted as a priority. Improving biomass data will also require training for the Energy Modelling Team to improve sectoral knowledge, technical coordination with bio-energy experts within MoWE, and continued outreach to new stakeholders to improve secondary data collection on these sub-sectors.*	**3**
	B. Improve data collection for end uses, in particular for petroleum products	4B.1	*by adding or adapting relevant questions on energy to existing household or enterprise surveys, if available*	**3**
	C. Support the development of a structured data validation process on a national level by conducting an annual validation workshop or technical committee	4C.1	*to ensure effective and sustainable participation from data providers and organizations within the energy sector and other organizations with mandates on related subjects such as trade, forestry, and transport. Budgetary support may be required to ensure that the committee can meet regularly and fulfil its role. MoWE should host this committee.*	**2**
5 Upgrade statistical tools to meet the requirements of a NEIS.	**A. Develop capacity in data management**	5A.1	*As the quality and coverage of data expands, the Energy Modelling Desk at MoWE will need to manage ever-larger and more complex data sets, hence the need for all members of the team to receive basic training on best practice and techniques for data management in Excel, and one member of the team should be selected as focal points for more in-depth training on database management and tools to anticipate potential changes in the statistical infrastructure in the future.*	**1**
		5A.2	*Develop the National Energy Statistics guidelines to document the energy data processing steps.*	**3**
		5A.3	*Generate a shared file/drive that centralizes all training materials or relevant documents as identified by the statistics team.*	**1**

6 Structure and Facilitate Data Dissemination	**A. Prepare and publish annual reports on energy statistics and standard dataset reports regularly**	6A.1	*Identify indicators and metadata for inclusion in an editable analytical dataset and generate a template to raise the MoWE's visibility to external stakeholders and facilitate users' access to statistics and information on the energy sector.*	**1**
		6A.2	*Populate and publish/distribute datasets regularly on an appropriate platform.*	**2**
	B. Raise the profile of energy statistics by holding an annual national workshop to present the Energy Balance and headline statistics for energy.	6B.1	*This should include the leading public sector stakeholders, the private sector, civil society, and the press and be hosted by MoWE.*	**2**
	C. Build capacity on energy economics and data analysis to expand the analytical output of the team	6C.1	*The role of the MoWE Energy Modelling unit is to collect data, produce energy statistics, and analyse specific subjects. Currently, the MoWE team reports a lack the time, resources, 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 MoWE projects.*	**1**
		6C.2	*Build awareness through basic training on analytical techniques to support energy policymaking (AFREC Short Courses)*	**1**
		6C.3	*Select and train 1-2 team members in more advanced statistics, energy economics, and analytical methodologies.*	**2**
		6C.4	*Gradually expand MoWE data unit analytical outputs to publish 1-2 thematic annual analyses on relevant topics.*	**3**
7 Sustain, evaluate, and formalize energy statistics processes.	**A. Formalize processes related to the energy statistics mandate**	7A.1	*It is crucial to advocate for formalizing and better positioning MoWE as the mandated entity for energy statistics through a Proclamation and/or an internal communication document with a detailed role description.*	**2**
		7A.2	*Formalize a collaboration framework by signing MOUs with the relevant stakeholders and data providers*	**2**
	B. Ensure continuity in statistics activities with written processes and user manuals	7B.1	*Ensure that any new tool is delivered with appropriate user documentation.*	**3**
	C. Review and evaluate the statistics process, outputs, and training needs regularly	7C.1	*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.*	**3**

Table 11 : Recommendations

4.2 IMPLEMENTATION PLAN

The figure below summarizes the essential phases of implementation envisaged for the recommended actions to establish a NEIS in Ethiopia

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 and on making incremental gains through the opportunistic implementation of actions labelled priority "3". Table 11 includes a detailed implementation plan, estimated resources, indicators, and timelines.

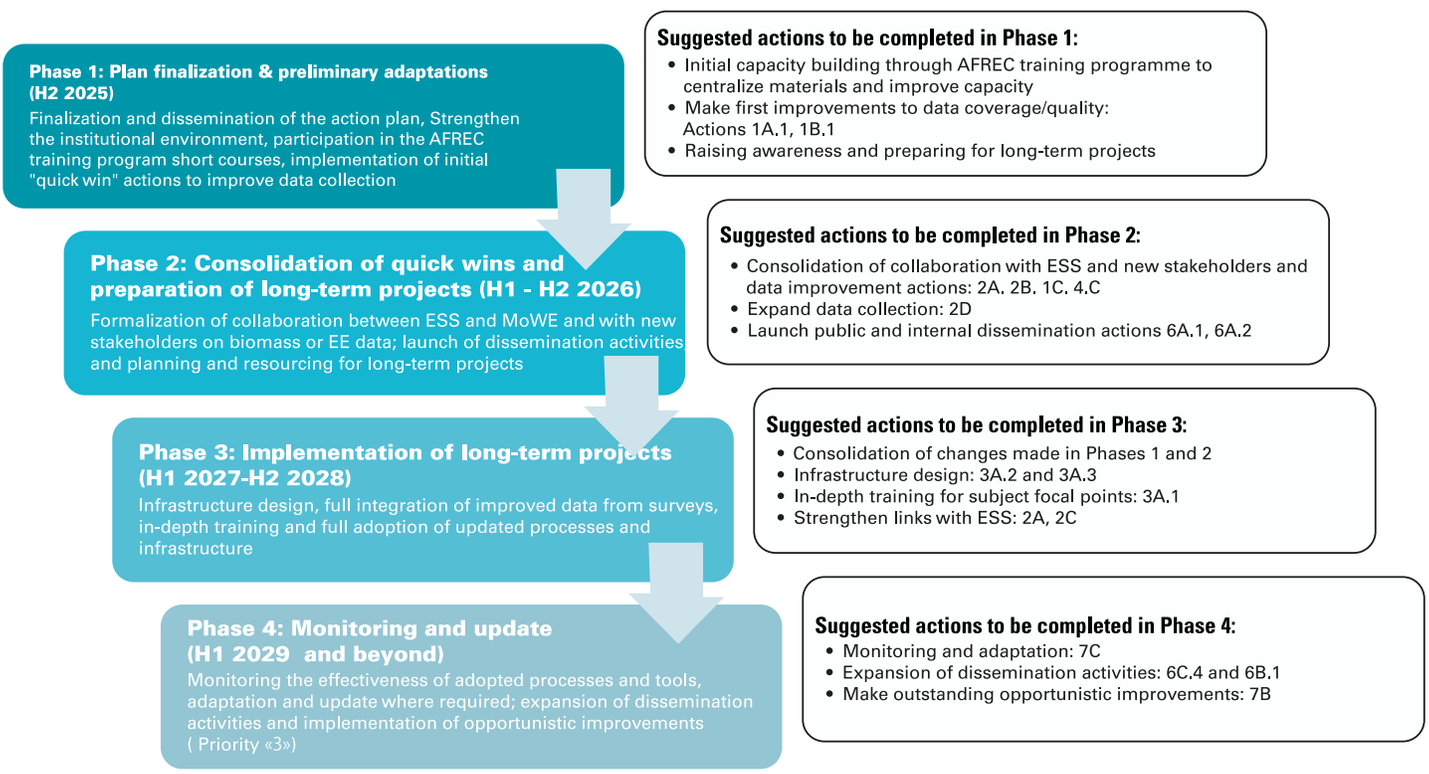


Figure 10 : Indicative implementation phases

Recommendation / General objectives	Specific Objectives /Expected Results	N°	Action	Priority	Resources HR: Human Resources (FTE)[11] FR: Financial Resources (US$)	Indicators/Means of Verification	Implementation calendar (start date)
1 Further enhance data quality and put in place a structured validation process	**1A. Reinforce data exchanges**	1A.1	*Develop standard reporting protocols (standard templates for data collection)*	**1**	**HR: Limited** **FR: -**	**Produce Excel and Word templates for dissemination to data providers and detail reporting processes and channels in a formal document.**	**H2 2025**
		1A.2	*Develop an Interagency Data Exchange Platform and/or digital tool for real-time sharing and validating data.*	**3**	**HR: Recurring** **FR: Subject to development 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/two trained team members as a designated point of contact.**	**2029 and beyond**
	1B. Instate formal data verification and validation processes	1B.1	*Establish a validation workshop that groups all key stakeholders to get feedback on data outputs and relevant analyses and enhance data quality.*	**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**

11 - 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)

2 Improve cooperation between Institutions to rationalize resources and enhance synergies	**2A. Foster closer collaboration between MoWE and ESS**	2A.1	*Partnership to harmonize data collection methodologies, integrating energy statistics into national surveys and censuses, and implementing quality control mechanisms*	**1**	**HR: 8 weeks** **FR: Limited**	**Assigned focal points from MoWE 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 framework of punctual group and ad hoc meetings**	**H2 2025**
	2B. Effective collaboration between the two entities	2B.1	*The ESS can ensure compliance with international statistical standards, while the MoWE can provide sector-specific expertise, such as developing energy survey questionnaires.*	**1**	**HR: 1 day /month** **FR: None**	**Assign at least 1 team member to coordinate with ESS**	**H1 2026**
	2C. Establish shared database and automated data exchange protocols in real time	2C.1	*Adding or adapting data exchanges onto the Interagency Data Exchange Platform (1A.2)*	**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**
	2D. Integrating energy-specific questionnaires into pre-scheduled national census and socio-economic surveys	2D.1	*Discuss how energy-specific aspects can be integrated into the existing pipeline of household surveys and other relevant endeavours for cost-effective and comprehensive data gathering.*	**2**	**HR: Limited** **FR: -**	**Subject to discussions with the assigned focal points in the framework mentioned above**	**H2 2026**

3 Enhance technical and logistical capacities within MoWE	**3A. Reinforce technical and logistical capacity**	3A.1	*Select at least 2 team members for in-person energy modelling training and specialized biomass and energy efficiency training.*	**1**	**HR: < 1 week** **FR: Depending on training format (in person ~$10,000 for four-person weeks outside of Addis Ababa; online <$3000)**	**Focal points have received at least 1 week of intensive training.** **Additional training opportunities are identified.**	**H1 2026**
		3A.2	*Train the team on options for NEIS structure and design.*	**2**	**HR: <1 week** **FR: Limited**	**At least two members of the team have attended the AFREC short course**	**H2 2026**
		3A.3	*Identify the key requirements for an infrastructure design and develop specific terms of reference.*	**2**	**HR: 8 weeks** **FR: ~$40,000 if outsourced to an external consultancy**	**Detailed terms of reference with the main required features of the re-design process are prepared**	**H2 2026**
		3A.4	*Develop, test, and operationalize statistical infrastructure design.*	**2**	**HR: ~30 weeks** **FR: ~$150,000 if outsourced to an external consultancy**	**Tool and user documentation are delivered** **The team is trained to use, update, and modify the tool.** **Historical data is migrated to the tool.**	**H1 2027**
	3B. Leverage links with regional energy offices throughout the country	3B.1	*Enlist the regional energy offices to collect data on a regional level, which could be of added value for specific questions on biomass energy consumption.*	**1**	**HR: Recurring** **FR: Limited**	**Select liaisons for each regional energy source and identify opportunities to deepen information about identified knowledge gaps, such as biomass.**	**H1 2026**
	3C. Strengthen links with other institutions	3C.1	*Establish dialogue with relevant public institutions to systematically engage them in energy data-related committees to support data identification and collection.*	**1**	**HR: Recurring** **FR: limited**	**Detailed letters of collaboration are drafted and signed by the relevant parties.** **Invitations sent to attend organized committees and/or workshops**	**H1 2026**

4 Structure and facilitate dissemination	**4A. Improve data collection on biomass supply and demand**	4A.1	*Design and coordinate the implementation of a national biomass survey covering households and enterprises.*	**3**	**HR: ~ 30 weeks** **FR: ~$250,000 -$500,000**	**Involve relevant parties** **Obtain required approvals through relevant channels** **Design the survey (sample size, modules, technical assistance, manpower, etc.)** **Implement a survey in phases** **Review data collection at each phase** **Analyse and produce a report using finalized data**	**Opportunistically**
	4B. Improve data collection for end uses, in particular for petroleum products	4B.1	*Coordinate with ESS to add and/or adapt existing household or enterprise surveys to include specific questions on end-uses*	**3**	**HR: Recurring FR: limited**	**Assign a designated team member to the task.** **Process and analyse collected data before integration into NEIS**	**H2 2026**
	4C. Support the development of a structured data validation process on a national level by conducting an annual validation workshop or technical committee	4C.1	*A committee hosted by MoWE on an annual basis that groups data providers and other stakeholders (e.g., trade, forestry, transport, etc.)*	**2**	**HR: Recurring FR: 1 day at MoWE premises, if adapted, between ~$1000-$2000**	**Identify relevant institutions and people of interest to be invited to the annual meeting.** **Produce and disseminate narrative reports and/ or presentations.** **Media coverage of the event and statistical results**	**H1 2026**

5 Upgrade statistical tools to the requirements of a NEIS	**5A. Develop capacity on data management**	5A.1	*All team members should receive basic training on best practices and techniques for data management in Excel.* *At least one team member should be selected as a focal point to assess the need for in-depth training on database statistical tools.*	**1**	**HR: 1-2 weeks** **FR: ~$2500**	**All team members to receive Excel training** **Additional training opportunities are identified.**	**H2 2025**
		5B.1	*Develop the National Energy Statistics Guidelines and expand/update them as necessary.*	**3**	**HR: 6-8 weeks** **FR: Limited**	**Written manual of procedures for data collection and compilation, and glossary of key indicators' definitions**	**Opportunistically**
		5B.3	*Generate a shared file/drive that centralizes all training materials or relevant documents for the team.*	**1**	**HR: < 1 week for compiling and organizing documents; regular maintenance of the file** **FR: Limited**	**The statistics team has access to the shared drive.** **The drive contains all relevant documentation and training materials** **The drive is regularly maintained and well-organized with a fixed annual schedule**	**H2 2026**
6 Structure and Facilitate Data Dissemination	**6A. Prepare and publish annual reports on energy statistics and standard dataset reports regularly**	6A.1	*Identify indicators and metadata for inclusion in editable analytical dataset and generate templates.*	**2**	**HR: ~3 weeks** **FR: Limited**	**Standard dataset templates are generated and approved by MoWE for dissemination to public and para-public agencies for analytical purposes.**	**Starting H1 2026**
		6A.2	*Populate and publish/ distribute datasets regularly on an appropriate platform.*	**2**	**HR: 1 week per cycle** **FR: Web publishing limited (depending on the web platform used) or none if distribution is limited**	**Distribution rights and mechanisms are identified.** **The dataset is available to institutions promptly.**	**H2 2026**

6 Structure and Facilitate Data Dissemination	**6B. Raise the profile of energy statistics by holding an annual national workshop to present the Energy Balance and headline statistics for energy**	6B.1	*Hold annual workshops hosted by MoWE to present the data and report it to key stakeholders from the government, development partners, the private sector, civil society, and the media.*	**2**	**HR: 3 weeks per workshop** **FR: ~$1,000 conference package**	**1 workshop per year is held to promote statistical activities** **Media coverage of the event and statistical results**	**H2 2027**
	6C. Build capacity on energy economics and data analysis to expand the analytical output of the team	6C.1	*Trained the statistics team in fundamental energy data analysis and data visualization techniques.*	**1**	**HR: < 1 week** **FR: Limited**	**At least one member of the team has attended the AFREC short course**	**H2 2025**
		6C.2	*Build awareness through basic training on analytical techniques to support energy policymaking (AFREC Short Courses)*	**1**	**HR: < 1 week** **FR: Limited**	**At least one member of the team has attended the AFREC short course**	**H2 2025**
		6C.3	*Select and train 1-2 team members in more advanced statistics, energy economics, and analytical methodologies.*	**2**	**HR: 4 weeks** **FR: Depending on training format (in-person ~$10,000 for four-person weeks outside of Addis Ababa; online <$3000)**	**At least one member of the team is selected as a focal point.** **Focal point (s) have received at least 1 week of training in relevant energy economics/ modelling issues.** **Additional opportunities are identified.**	**H1 2027**
		6C.4	*Gradually expand MoWE data unit analytical outputs to publish 1-2 thematic annual analyses on relevant topics.*	**3**	**HR: Variable (~2-8 weeks per thematic analysis, depending on subject)** **FR: A Limited budget is required, potentially for data acquisition**	**At least one additional report is published each year**	**H1 2028 or opportunistically**

7 Sustain, evaluate, and formalize energy statistics processes	**7A. Formalize the energy statistics mandate**	7A.1	*Advocate to formalize and better position MoWE as the mandate for energy statistics through a Proclamation and/or an internal communication document with a detailed role description.*	**2**	**HR: 2-4 weeks, support from hierarchy/legal department** **FR: Limited if drafted internally**	**Key elements/ requirements of the mandate are identified** **Concerned stakeholders are consulted in the preparation of the draft** **Draft decree or legal framework prepared, finalized, and adopted**	**H2 2026**
		7A.2	*Formalize a collaboration framework by signing MOUs with the relevant stakeholders and data providers to*	**2**	**HR: 8-12 weeks, support from hierarchy/legal department** **FR: Limited if drafted internally**	**Assign a specific focal point within each body to provide relevant data and communication.** **Clarify the working relationships between institutions.** **Limit disruptions in the event of a management change** **Materialize the future collaboration on the data validation committee**	**H2 2026**
	7B. Ensure continuity in statistics activities with written processes and user manuals	7B.1	*Ensure that any new tool is delivered with appropriate user documentation.*	**3**	**HR: Limited** **FR: Limited**	**User documentation is shared with all team members (6C.3)**	**H1 2027**
	7C. Review and evaluate the statistics process, outputs, and training needs regularly	7C.1	*Conduct regular monitoring of statistics processes and outputs*	**3**	**HR: 2-3 weeks** **FR: Limited**	**The updated auto-evaluation report identified required process adaptations, training needs for the team, or areas of improvement.**	**On a rolling basis, every 3-5 years**

Table 12 : Action plan

5 APPENDICES

5.1 SUMMARY RESULTS OF THE DIAGNOSTIC & GAP ANALYSIS

N°	Key issues/gaps	Description
1.1	Lack of coordination between stakeholders	Further collaboration and coordination between the stakeholders and the different institutions are needed to ensure the efficient sharing of relevant data flows.
1.2	Lack of stakeholder engagement	No codified process allows stakeholders and data providers to engage and validate energy statistics.
1.3	The absence of allocated funds for energy statistics	The Energy Modelling team does not have a defined and allocated budget that permits engaging in further required data collection on key areas of interest, like biomass consumption, or to enable effective dissemination of results
2.1	No tailored and specialized energy data management and software training for MoWE	Despite having a designated statistics team, additional training is required to gain confidence and ownership with energy-specific analytical methodologies and statistics.
2.2	Need for capacity building on biomass and energy efficiency subsectors	Statistics officers are comfortable with electricity and petroleum subsectors but have less experience with biomass and energy efficiency statistics, which are still nascent. Specific training on sub-sector value chains, statistical calculations, and methodologies for estimating indicators on this subject may be required.

2.3	Need for capacity building on advanced Excel/Data management skills	Statistics officers are using an Excel template provided by AFREC. However, much of the statistics officers' time is spent on repetitive tasks that could be streamlined with more efficient data management or advanced Excel skills. Training on these subjects is linked to improvements to the statistical infrastructure (see section 3.5).
2.4	There is a need for improved IT infrastructure at MoWE to support expanded data activities.	IT resources at MoWE appear insufficient to allow staff to expand their contribution to data management and analysis while maintaining a NEIS.
3.1	Lack of data on biomass and energy efficiency	No available data on the biomass subsector and for energy efficiency; no consumption surveys or other primary data collection are currently scheduled.
3.2	Challenges engaging with partner institutions for data collection	Lack of capacity and lack of awareness in partner institutions of the importance of collecting and processing energy data and turnover of focal points or management changes causes difficulties in collecting data; need for training for the main focal points
4.1	Lack of a dedicated tool for tracking and compiling energy statistics	The current Excel spreadsheets and the EBS tool used at MoWE are not interlinked into a structured tool, so compilation and calculation must be done manually.
4.2	Limited capacity for collaboration with the current infrastructure	Excel sheets and a lack of processes for working across institutions generate risks related to versioning, security, etc., and act as a barrier to enhanced collaboration between MoWE and its regional offices and other relevant public institutions
4.3	Lack of comprehensive output indicators	Infrastructure does not generate detailed indicators for the energy sector (e.g., energy by end-use, energy efficiency).
5.1	Limited internal checks in the 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	Lack of an external validation process	We need to implement a process, such as an annual workshop or technical committee, to ensure the active participation of institutions/agencies in a comprehensive validation process through a yearly meeting. This will allow us to benefit from various stakeholders' insights and further review, provide technical input, and validate. This process can mainly include relevant representatives from MoWE, the Ministry of Mines (MoM), the Ethiopian Petroleum Supply Enterprise (EPSE), the Ethiopian Statistical Service (ESS), the Ethiopian Electric Power (EEP), the Ethiopian Electric Utility (EEU), etc.
5.3	No information on indicator reliability or checks against international standards	Quality assurance processes remain relatively simple and do not include a precise classification of indicators by "reliability" to indicate the confidence level concerning the accuracy of outputs or their compliance with international standards. Therefore, they do not highlight the areas where data should be improved over the long run. This is, thus, one of the areas needing improvement and/or upskilling.

5.4	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.
6.1	Data/trend interpretation	Limited knowledge of specific areas of energy modelling/ statistics at MoWE limits the team's capacity to enhance analysis by interpreting trends or data, effectively use available statistics to produce analytical output, or contribute to regular monitoring or decision-making.
6.2	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.
6.3	Low public and institutional profile of energy statistics and data collection work	Low visibility of energy statistics processes and outputs 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 awareness and participation of partner institutions.

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

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	Dec 2024	Rajia Alhabouby (IED) Ebisa Ragasa (MoWE)	Resources and institutional environment
2	Jan 2025	Rajia Alhabouby (IED) Ebisa Ragasa (MoWE)	Processes and energy balance data sources

Table 15 : List of interviews

5.5 QUESTIONNAIRES

Included as separate files

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