



AFREC

African Energy
Commission

GUIDE TO IMPLEMENTING A NEIS/REIS

Program to support African Union member states and regional economic communities
in improving or establishing a national/regional energy information system

— JULY 2025 —



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MESSAGE OF ACKNOWLEDGMENT FROM THE EXECUTIVE DIRECTOR OF AFREC —

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

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

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

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

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

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

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

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ACRONYMS

AFREC	African Energy Commission
IEA	International Energy Agency
AU	African Union
NSI	National Institute of Statistics
MICS	Multiple Indicator Cluster Survey
NFP	National Focal Point
RACEE	African Network of Centres of Excellence in Electricity
HR	Human Resources
RISE	International Recommendations for Energy Statistics
NEIS/ NEISN / NEISR	Energy Information System / National / Regional
GIS	Geographical Information System
UNSD	United Nations, Statistics Division)

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1 INTRODUCTION



This guide is aimed at officials tasked with developing energy statistics and setting up a National Energy Information System (NEIS), hereinafter referred to as the coordinator. It also serves as an educational document, setting out all aspects of energy statistics and providing all agents with an understanding of the organisation of the EIS, not just the technical aspects.

The document draws on lessons learned from two diagnostic phases conducted by AFREC:

- **Phase 1:** National Energy Information System (NEIS) and Capacity Building (10 African Union countries)
- **Phase 2:** Programme to support African Union member states and regional economic communities in improving or establishing a national/regional energy information system (NEIS/REIS) (16 countries and 2 regional economic communities)

It is designed as a practical tool that covers the fundamental aspects of the NEIS's organisation, highlighting the key points that will make energy statistics operational, efficient and sustainable. In the appendix, readers will find a checklist summarising all the points to be addressed.

The terms “energy statistics” and “energy information system” refer to the same subject, the former emphasising the methodological dimension and the latter the dissemination of structured information. In this document, these terms are used according to the context of the topics covered.

1.1 OBJECTIVES AND PURPOSES OF INFORMATION SYSTEMS

A project to set up an energy information system responds to the need for reliable information and knowledge identified in advance by public authorities and decision-making. These objectives include:

- | | |
|---|---|
| ➤ | Energy policy (evaluation of access policies, energy mix) |
| ➤ | Infrastructure planning and structural projects (detailed knowledge of energy flows in the country) |
| ➤ | International commitments in the field of climate change (adaptation, emission reduction) |
| ➤ | Macroeconomic objectives related to the country's external dependence (e.g. dependence on energy imports) |

Before entering into the detailed design of an energy statistics organisation and then implementing it, **it is essential for Coordinator to:**

- | | |
|---|---|
| ➤ | clarify objectives, and |
| ➤ | gather the expectations of stakeholders and keep these as a fixed reference point throughout the implementation of the NEIS. |

The purposes of energy statistics are mainly in three areas

- > Measuring impacts (e.g. of energy policy), which involves collecting data at regular intervals and reporting the information or indicators produced in order to observe effects or trends.
- > Planning, i.e. establishing a baseline by providing the most detailed knowledge possible on the use of energy resources throughout the chain, from production or supply to final use in the socio-economic fabric.
- > Communicate, i.e. make statistical data officially available, providing reliable data that can be compared with other countries.

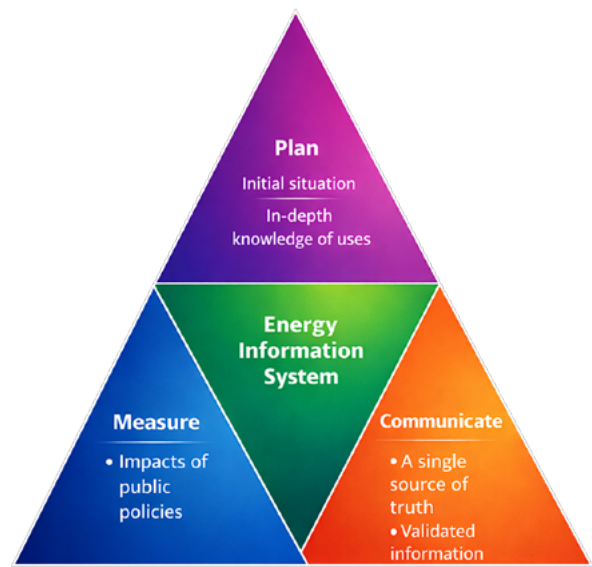


Figure 1 : Purpose of an NEIS

As part of the official national statistics, the NEIS is a fully integrated system covering all energy sectors. The NEIS Coordinator must identify any obstacles and propose actions to remove them.

1.2 BASIC PRINCIPLE OF ENERGY STATISTICS

The basic principle of energy statistics is to represent the use of energy or energy resources in the form of flows, from their production or import (supply) to their final use by economic sectors, including the identification of any transformations (the use of one form of energy to produce another).

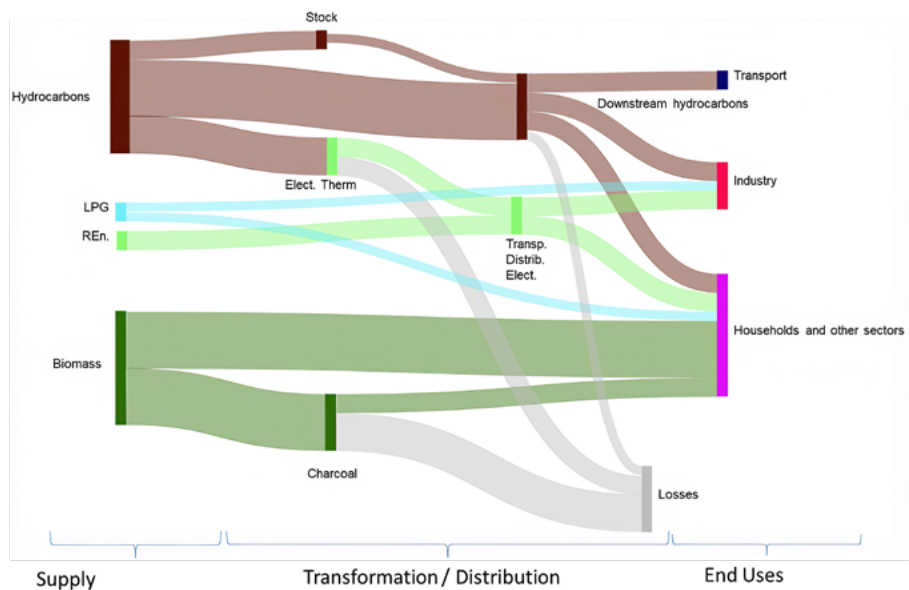


Figure 2 : Typical representation of energy flows

Based on the characterisation of each node in the representation (the rectangles above), the quantities of energy represented by the branches are calculated.

As the NEIS is an official statistic, it is based on a reference framework that specifies the rules for producing energy statistics. This includes the definitions of energy and its classifications, as well as the definitions and classifications of the transformation and end-use sectors. To ensure comparability in a multilateral context, the reference framework is international (RISE), with national statistical institutes working to align their methods with it.

The following emphasises the international dimension and the need to apply harmonised methods in the NEIS.

1.3 PURPOSE OF THE MANUAL

The manual is intended to guide anyone involved in setting up an NEIS or wishing to improve the relevance of an NEIS. To meet this objective, it addresses all dimensions of a statistical system:

>	institutional environment, i.e. who are the actors and stakeholders in statistics
>	material organisation and human resources, i.e. the functions and profiles of an NEIS team and its material resources
>	acquisition and maintenance of skills
>	provision of statistical information: the process from the perspective of harmonisation with international statistics and quality assurance
>	Steering the NEIS through planning and budgeting

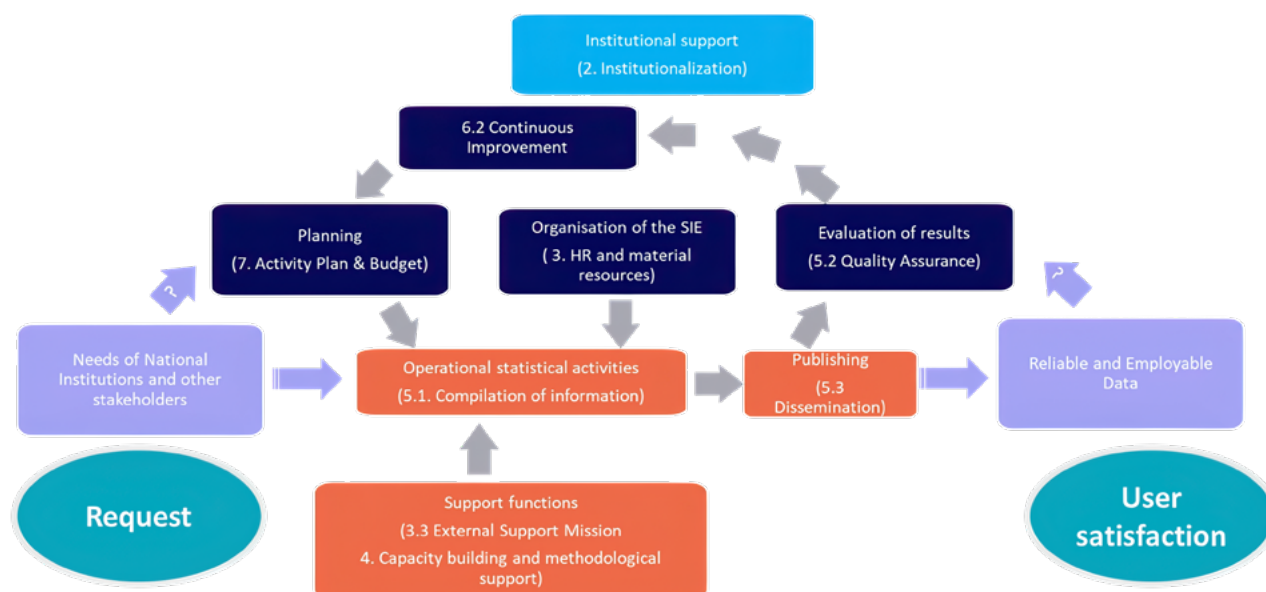


Figure 3 : Relationship between the management of an EIS and the chapters of the guide

2 INSTITUTIONAL FRAMEWORK



2.1 IDENTIFY THE INSTITUTIONAL CONTEXT

As emphasised above, establishing an NEIS involves implementing an integrated system of multi-purpose energy statistics within the framework of official statistics. **The NEIS coordinator's first task in the institutional domain will be to map the links between the NEIS and the various actors in the institutional, parapublic and private sectors**, most of whom provide data or technical and methodological support for establishing or improving an NEIS. The figure below shows the diversity of actors that can be involved in providing data and technical support.

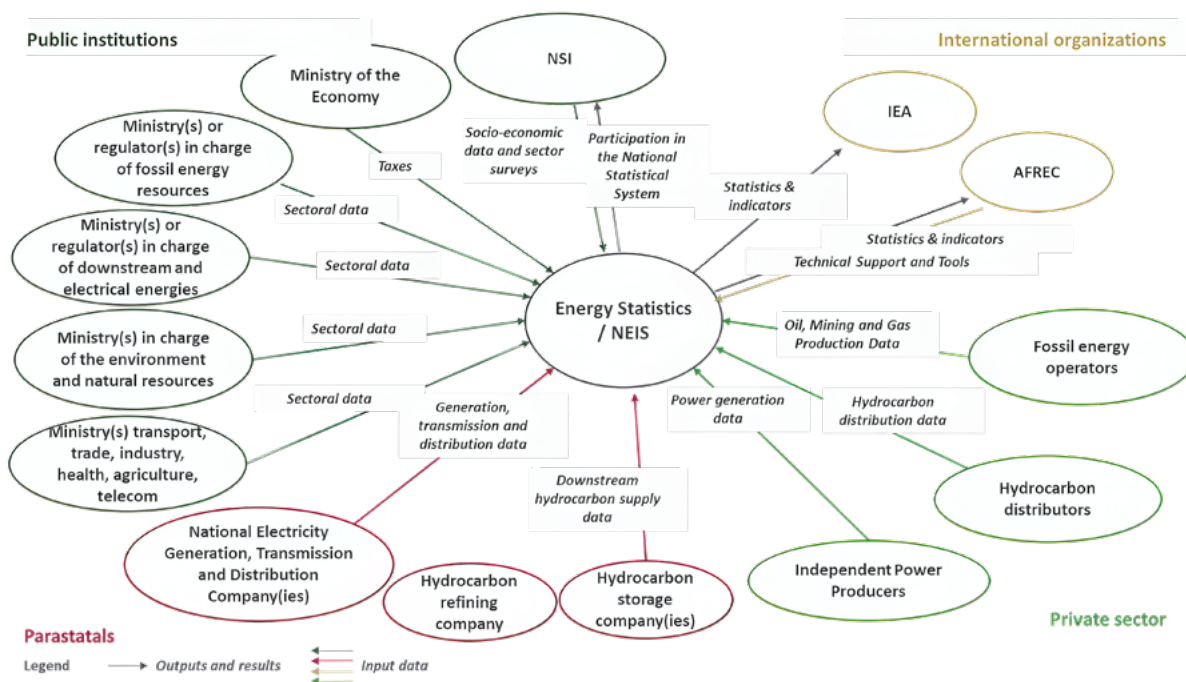


Figure 4 : Situation of energy data provision

2.1.1 STRENGTHENING INSTITUTIONAL POSITIONING

Not all actors and providers are subject to the same institutional oversight. The first analysis to be conducted is that of the actual positioning of the NEIS in this environment:

1	Does it allow for dialogue with all stakeholders (mainly to obtain data from the sector)?
2	In which cases is it direct, and in which cases is it indirect? Why?
3	What are the consequences of the NEIS’s positioning on information gathering? Is the NEIS able to cover all energy sectors?

These three analyses provide a clear picture of the adequacy or inadequacy of the NEIS’s institutional position.

As a general rule, the most favourable situation is the highest possible position in the administrative and institutional structure (e.g. NEIS at directorate-general level). However, sectoral supervision is not always exercised by the same ministry, so the creation of the NEIS as a joint entity for several ministries may be considered, provided that it enjoys operational autonomy.

Another way of giving the NEIS more weight is to attach it to an entity responsible for infrastructure planning. This makes operational sense because the areas of activity are contiguous and there are therefore synergies in the use of human and material resources.

2.1.2 NATIONAL STATISTICAL FRAMEWORK

In the National Statistical System, Statistical Programme Committee is responsible for steering activities , establishing multi-year plans for statistical campaigns and, in some cases, allocating resources.

The National Statistical Institute is responsible for implementing the plan and conducting statistical studies and surveys. It may also be responsible for methodological verification and dissemination of information.

Sectoral clusters may be created in the legal and institutional framework (this is why NEIS was set up.). The ministry or ministries responsible for energy are the sectoral representatives that contribute to the National Statistical System AND they benefit from the multi-year plan programmes and, where applicable, financial resources.

When setting up or improving an NEIS, the NEIS Coordinator must ensure that:

>	the institutional and legal framework for statistics is in place and operational;
>	the institutional positioning of the NEIS must enable it to represent the energy sector as a technical expert within the National Statistical System

If this is not the case, their work will consist of leading the preparation of ad hoc texts and lobbying sectoral supervisory bodies and authorities for recognition of the NEIS as the representative of the energy sector in the National Statistical System.

The coordinator will then be responsible for **participating in the technical and steering bodies of the national statistical system.**

The National Statistical Institute is a key partner with whom collaboration is essential:	
>	Participation of the NEIS in the preparation of national field surveys to include questions relating to energy and its uses;
>	Methodologies and technical support for statistical data processing and information disaggregation;
>	Harmonisation with international recommendations for statistics.

2.1.3 THE NEIS IN THE ORGANISATION OF NATIONAL STATISTICS

International recommendations (RISE) encourage countries to take steps to move from targeted data collection, used mainly for internal purposes by various agencies specialising in the field of energy, to **the establishment of an integrated system of multi-purpose energy statistics** as part of their official statistics, based on the United Nations Fundamental Principles of Official Statistics and appropriate institutional arrangements.

In concrete terms, this means that energy statistics are part of official data production, which requires compliance with general principles:

1	Collaboration between all data collection activities carried out in a country to avoid duplication of effort and ensure the overall consistency of official statistics;
2	Establishment of a legal framework making the reporting of energy data through well-designed channels and instruments mandatory;
3	Establishment of appropriate inter-institutional coordination mechanisms with effective institutional arrangements: a. the designation of a single body responsible for the dissemination of official energy statistics; b. a clear definition of the rights and responsibilities of all bodies involved in data collection and compilation; c. the establishment of formal working arrangements between them, including inter-institutional working meetings, supplemented by informal agreements.

In terms of operations, **The SIE coordinator will be responsible for keeping up to date with the implementation of the legal framework that makes reporting energy statistics mandatory (point 2), as well as for establishing cooperation agreements with institutions within the framework of inter-institutional coordination (point 3).**

3 HUMAN AND MATERIAL RESOURCES



3.1 ESTABLISHMENT OF AN ENERGY INFORMATION UNIT

An NEIS unit is a set of material and human resources dedicated to the production, use and dissemination of energy statistics.

This unit is at the centre of a group of actors who are the providers of information, but above all the users, public decision-makers who will rely on the information for decision-making, planning services which, without historical data and an understanding of the situation, cannot build scenarios...

3.2 HUMAN RESOURCES

In terms of human resources, the suggested organisation includes the functions shown in the following figure:

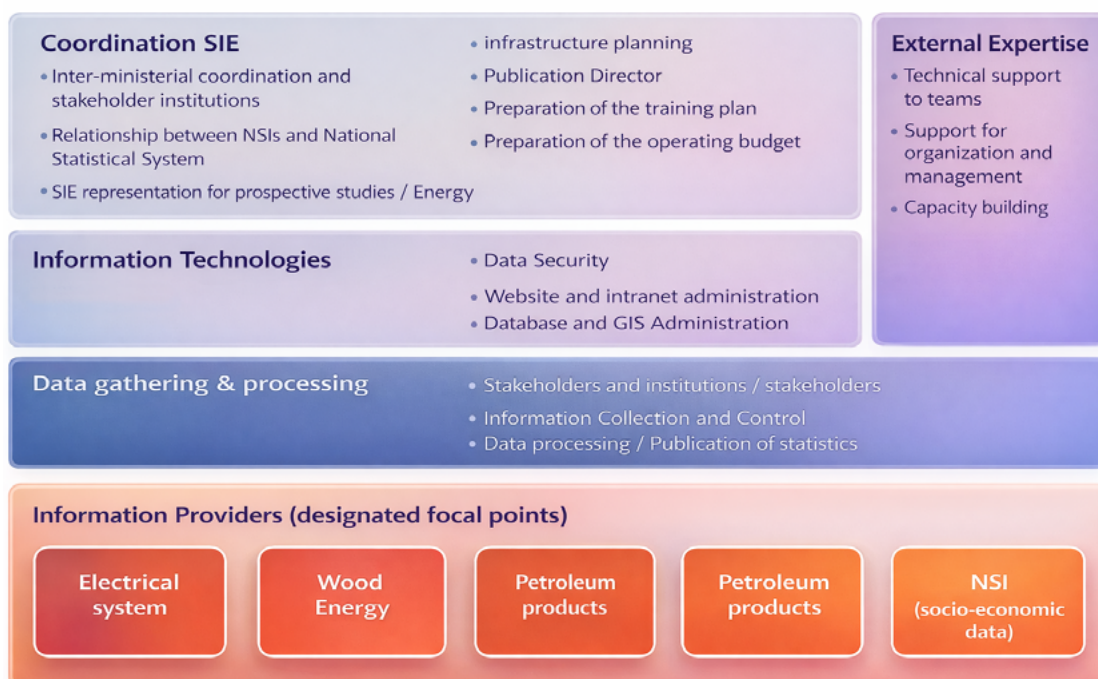


Figure 5 : functional organisation for the NEIS

1. NEIS coordination, whose main activities are focused on

- Institutionalising the NEIS and relations with data providers;
- Partnership with the national statistical institution (NSI - participation in usage surveys);
- Skills development and maintenance of operational skills among teams;
- Participation in energy planning.

2. A dedicated team with the following expertise:

- a. Energy analyst;
- b. Statistical methods specialist;
- c. IT specialist and GIS specialist.

The role of this team will be to

- Collect and monitor transmission process from the data providers;
- Process and analyse information, and maintain the NEIS database;
- Develop the quality and reliability of NEIS data.

3. Support function

In many cases, external expertise is required for three to five years after launch to help NEIS gain momentum and become sustainable. The support function involves:

- Implementing statistical tools and methods;
- Critically analysing the implementation of procedures and recommendations for organisational improvement;
- Support for capacity building and training for new staff recruited after the launch of the NEIS.

INFORMATION PROVIDERS

As stakeholders, they liaise with the NEIS team. The most common method of managing interface is **to appoint focal points in each of the participating entities.**

3.3 EXTERNAL ADVISORY TEAM

The establishment of an external advisory team (to perform the support function) is an option in the organisation of the NEIS. However, its implementation is recommended when creating an NEIS in order to stimulate the team's progress and focus the work on priority activities.

The external advisory team is a form of technical assistance and advice that is not a permanent capacity building measure, but rather "coaching" for teams that responds to specific technical requests and provides external evaluation of the organisation and its operational achievements.

Typical activities of a support expert include:

- Responding to requests for methodological and organisational support for a predefined volume of work;
- Assisting with coordination in monitoring team skills and implementing a training plan;

- Organising in-depth knowledge sessions on topics requested by the NEIS team;
- External evaluation of the activity:
 - o Reviewing the work plan and its implementation;
 - o Identify bottlenecks;
 - o Proposing organisational and operational corrective measures.

3.4 MATERIAL RESOURCES

This topic may seem trivial, but the assessments carried out for AFREC showed that energy statistics teams sometimes suffered from a lack of resources, which had a significant impact on their organisation and activities.

The material resources to be made available to an EIS team:

➤	Premises and workstations;
➤	A computer (laptop) for each member;
➤	Shared office equipment (printer, etc.) and specialised software (SPSS, etc.);
➤	A fast and reliable internet connection;
➤	A reliable, secure and internally shared data backup system;
➤	A vehicle with a driver for travel.

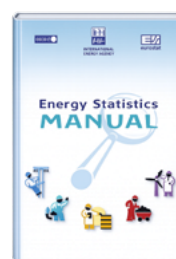
4 SKILLS DEVELOPMENT AND CONTINUING EDUCATION

4.1 KNOWLEDGE MANAGEMENT AND SELF-TRAINING

Formalising procedures specific to the statistics department is an important tool for process control, but also a means of transferring know-how and providing a self-training tool for working methods.

4.1.1 BOOKS FOR SELF-TRAINING AND KNOWLEDGE OF ENERGY STATISTICS

ENERGY STATISTICS MANUAL



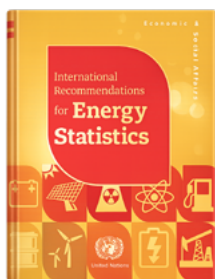
The best known and most widely distributed statistics book is the Energy Statistics Manual, published by the IEA, OECD and Eurostat.

Originally written to accompany IEA and Eurostat questionnaire surveys, its quality lies in its value as a genuine educational tool that enables engineers and statisticians to master the basic concepts and methodology of international energy statistics.

It is also a reference guide providing information on energy conversion processes and fundamental concepts in energy.

➤ <https://www.iea.org/reports/energy-statistics-manual-2#overview>

INTERNATIONAL RECOMMENDATIONS FOR ENERGY STATISTICS, PUBLISHED BY THE UNITED NATIONS



This is the reference document for international energy statistics.

Readers will find statistical principles, but also, very importantly in practice, classifications of energy sources and materials and their international definitions, as well as those of energy transformation activities and consumers.

The document also provides guidelines on data processing and validation and quality management in energy statistics systems.

➤ <https://www.un-ilibrary.org/content/books/9789210565202>

STRUCTURE OF THE DOCUMENT

Chapter I. Introduction

Chapter II. Scope of energy statistics. *(e.g. considering energy statistics as a comprehensive system in order to understand energy stocks and flows)*

Chapter III. International Standard Classification of Energy Products *provides a coding system to be used for data collection and processing.*

Chapter IV. Units of measurement and conversion factors *e.g. recommendations for calculating and reporting calorific values and default calorific values*

Chapter V. Energy flows *such as energy production and transformation, non-energy uses, final energy consumption, etc.*

Chapter VI. Statistical units and data items: *the reference list of different data items to be collected; energy stocks and flows; production and storage capacity, etc.*

Chapter VII. Data collection and compilation. *Overview of the different data collection strategies and the main types of data sources (surveys, administrative data, etc.)*

Chapter VIII. Energy balances. *Presents energy supply, transformation and consumption, as well as other flows, in the form of an energy balance*

Chapter IX. Data and metadata quality assurance. *How to establish a national framework for energy statistics quality assurance.*

Chapter X. Dissemination. *Data confidentiality, data access, publication schedule, data revision, dissemination formats*

Chapter XI. Uses of basic energy statistics and energy balances *provides examples of interesting uses of energy statistics and energy balances*

4.2 TRAINING IN ENERGY STATISTICS

Within the NEIS teams, a need for training in energy statistics is expressed each time a new staff member arrives or a new focal point is appointed. On this point, it is important that **the coordination team organises an induction programme for the NEIS:**

- Provision of self-training tools (available on international statistics websites and from partners such as AFREC);
- Internal training on the organisation of energy statistics;
- Enrolment in an initial online training course or workshop organised with the help of partners such as AFREC.

At the end of the cycle, the coordination team assesses the skills acquired by the newcomer and their needs for further support.

In some countries that participated in AFREC's diagnostics, we also encountered requests for skills reinforcement on specific topics:

- Advanced use of Excel;
- Relational databases;
- Specialised frameworks in statistics (R, SPSS, etc.) and geospatial analysis (QGIS, etc.).

The table below provides information on organisations that can offer training on energy statistics topics.

Table 1 : Short courses in energy statistics

Institution/ Centre	Type of training	Format	Duration	Specialisation	Online address / Contact
AFREC (African Energy Commission, African Union)	Workshops, training of trainers	In-person/ online	1 to 2 weeks per session	Energy statistics, energy assessments, data collection	Official website
Power Futures Lab, University of Cape Town	Specialised training courses, workshops	In-person/ online	3 to 5 days (workshops), up to 4 weeks for in-depth modules	Energy statistics, data analysis, regulation	Official website
Makerere University (Uganda)	Workshops, short courses	In-person/ online	1 to 2 weeks (workshops), short modules	Energy statistics, data analysis	Official website
African Network of Centres of Excellence in Electricity (RACEE)	Professional training	Face-to-face	1 to 2 weeks (modules), sometimes longer	Energy statistics applied to electricity	Official website (under development)
International Energy Agency (IEA)	Workshops, training courses, online resources	Online/In-person	1 to 2 weeks (workshops), permanent online resources and training	Energy statistics, methodology	Official website
United Nations (UNSD, Statistics Division)	Workshops, online courses	Online/In-person	1 to 2 weeks (workshops), variable online modules	Energy statistics, data collection	Official website

4.2.1 CERTIFICATE AND PROFESSIONAL TRAINING COURSES

HARMONISATION OF AFRICAN STATISTICS CURRICULA

The Pan-African Centre for Statistics (Panstat) is an institution designed to harmonise and strengthen the statistical capacities of African countries, in line with international statistical standards. It plays a key role in accelerating the implementation of the African Union's Agenda 2063 and supporting initiatives such as the African Continental Free Trade Area (AfCFTA).

The official inauguration of Panstat's headquarters took place on 18 December 2024 in Abidjan, Côte d'Ivoire. It was designed to become a centre of excellence in the training of statistical experts, helping to equip the continent with strategic data skills.

Panstat plays a key role in training, cooperation between African statisticians, and promoting good practices in data production and use. It is a strategic tool for strengthening the capacity of national statistical institutions. The creation of this centre is part of a broader effort to modernise and transform the African statistical system, supported by the African Union and various partners.

STATISTICAL TRAINING CENTRES IN AFRICA

In addition to PANSTAT, whose mission is to harmonise programmes and promote the training of statistics specialists, the table below lists the opportunities for initial training (with a view to recruiting staff) and continuing training (with a view to capacity building).

Table 2 : Initial courses and professional training in statistics

School/Centre	Initial training	Vocational training
ENSEA Abidjan	Statistical Engineer Economist (Statistics applied to economics – Bac+6/Master 2) Statistical Engineering (Applied Statistics – Bac+4/ Professional Bachelor's degree) Statistical Analyst (Applied Statistics, Economics, Management, Data Science – Bac+3)	Senior Technician/Technical Assistant (Applied Statistics – Bac+2 – 2 years) Technical Agent (Applied Statistics – Bac+1 – 1 year)
ENSAE Dakar	Statistical Engineer/Economist (Applied Statistics in Economics – Bac+6/Master's degree) Statistical Engineering Technician (Applied Statistics – Bac+4)	Senior Technician/Technical Assistant (Applied Statistics – 2 years of higher education – 2 years) Technical Agent (Applied Statistics – Bac+1 – 1 year)
ISSEA Yaoundé	Statistical Engineer/Economist (Applied Statistics in Economics – Bac+6/Master 2) Engineer (Statistics) (Applied Statistics – Bac+4)	Senior Technician/Technical Assistant (Applied Statistics – Bac+2 – 2 years) Technical Officer (Applied Statistics – Bac+1 – 1 year)
University of Thiès	—	Specialist Certificate in Multivariate Analysis and Statistical Learning (Advanced data analysis, machine learning – Bachelor's degree or equivalent – short course)
University of Pretoria	Master's Degree in Applied Statistics (Applied Statistics – Master's – 1 year)	—
University of Johannesburg	Master's Degree in Mathematical Statistics (Mathematical Statistics – Master's – 2 semesters)	—
BIUST Botswana	Master's Degree in Statistics (Applied Statistics – Master's – duration not specified)	—

Makerere University (Uganda)	Bachelor of Statistics (General Statistics, Applied Statistics – Bachelor’s degree/ Bac+3 – 36 months) Master’s in Statistics (Applied Statistics, options: economic, agricultural, social statistics, etc. – Master’s – 2 years)	Makerere Short-term courses and workshops (Agricultural statistics, applied statistics – Certificate – short term)
Eastern Africa Statistical Training Centre EASTC	Bachelor of Statistics (Applied Statistics – Bachelor’s degree/Bac+3 – 3 years) Diploma in Statistics (Applied Statistics – Bac+2/Higher Diploma – 2 years)	Short courses and workshops (Applied statistics, agricultural statistics – Certificate – short term)

4.2.2 TRAINING MANAGEMENT

As in all organisations, individual expectations are not always in line with the operational objectives of the NEIS. **The coordinator must establish priorities by setting up a training plan.** There are also several reasons for undertaking this exercise:

>	In Quality Management Systems, training is a criterion in the evaluation of the organisation.
>	A team member may be unavailable for a long period of time, transferred to another position or simply leave the NEIS. Including the duplication of skills among team members in the training plan reduces the effects of this type of disruption.
>	Training can have budgetary implications, in which case the training plan will include a financing plan.



5.1 COLLECTING DATA

The purpose of data collection is to identify production, supply, transformation and consumption flows for each energy resource by regularly consulting the data providers identified in the Figure 4 : Situation of energy data provision .

5.1.1 DATA ACQUISITION PRINCIPLE

In practice, the production of energy statistics is based on data collection from two types of information sources that are involved at all levels of energy flows:

→ Administrative data sources that provide data initially created for purposes other

than the production of energy statistics:

- Activity reports from companies in the energy sector, energy regulatory authority;
- Customer files of distributors (while respecting data confidentiality);
- Ministry of Health, which monitors its various health centres and asks whether they have electricity, Ministry of Transport, which monitors vehicle fleets and provides information on usage, etc.

Advantages and disadvantages:

- + Low collection cost;
- + Avoids duplication by using existing data validated by the supplier;
- Definitions and information may not correspond to statistical needs (often the case for electricity distribution companies);
- Often requires effort and time to set up a data transmission mechanism and ensure statistical definitions are consistent;
- There may be legal or economic barriers to using the data (e.g. oil).

→ Statistical data sources that provide data collected exclusively for statistical purposes

from censuses and/or sample surveys;

- These are easy to use for supply and transformation (e.g. survey forms/questionnaires sent directly by the NEIS);
- Meets a need for detailed energy data collection on usage:
 - o Gaining a detailed understanding of who uses an energy resource, how and why, with a view to energy planning;
 - o Modelling resource use to inform policy-making;
 - o Assess the energy resilience of populations or sectors, the impact of energy efficiency, etc.

Advantages and disadvantages:

- + Definition of information to meet statistical needs;
- + Provides a more detailed view of final consumption;
- Requires significant human resources and agents to implement large-scale national surveys (censuses, MICS);
- Data processing between updates.

5.1.2 EFFORTS TO ACQUIRE DETAILED DATA

In implementing an EIS, the difficulty of acquiring detailed and reliable information is driven by the resources to be mobilised and the level of expertise and specialisation required.

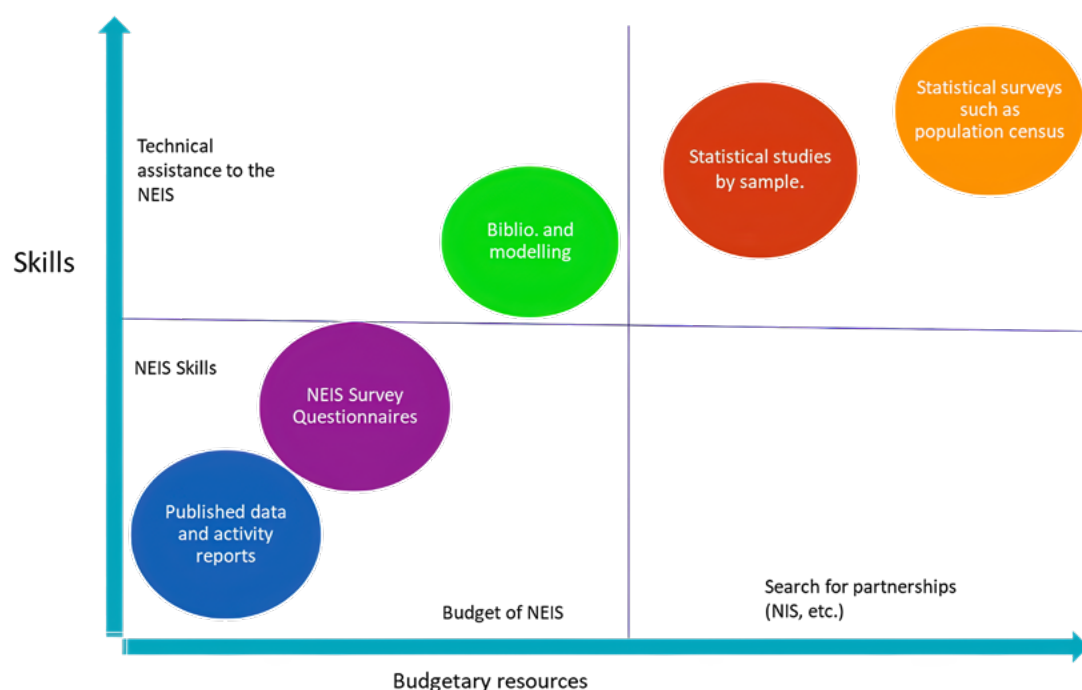


Figure 6 : Skills, resources and methods of data acquisition

The most accessible method is still the use of institutional documentation and NEIS surveys based on its own questionnaires and data collection forms. This is generally the first phase of data collection that is implemented at the outset.

This approach is also a means of **promoting the harmonisation of classifications and definitions** with international standards (by disseminating definitions and classifications to data providers who manage large customer files).

5.1.3 DEVELOPING THE CAPACITY TO PRODUCE DETAILED DATA

In a post-launch phase of the NEIS, its multi-annual budget plan will anticipate technical assistance missions to define NEIS-specific methods for imputing missing data or in cases of excessive aggregation, working on the basis of existing data and studies.

Refining knowledge of end uses will only be possible through statistical studies or large-scale surveys such as population censuses, which cannot be conducted independently of other national statistical actors for budgetary reasons and those mentioned above.

The successful implementation of the EIS hinges on the careful planning of detailed data collection, from the EIS survey to participation in national surveys, as well as maintaining a relationship with the Institute of Statistics.

5.1.4 INFORMATION PROCESSING

METHODS

In practice, the NEIS is an information hub (collector). Apart from the results of the methods it uses to impute information (methods that it will have approved), the data it receives is deemed to have been validated by the providers.

Nevertheless, in a first stage, the data received are checked to detect:

>	Classifications (and definitions) that are not harmonised with international statistical coding (ISIC and ISIC, reproduced in the international recommendations on energy statistics, RISE);
>	Values that are atypical compared to historical data;
>	Data, or other specific criteria such as fuel consumption per kWh of power plants, that fall outside a set range of values.

Controlling the data is a fundamental technical point, but it must not be allowed to block the subsequent consolidation process.

Tools such as the AFREC questionnaire offer verification tests based on specific criteria and can be used as tools or sources of inspiration for NEIS teams.

The most crucial point will be to decide whether to work on the data to make it consistent or to check with the supplier.

In a second step, the data is prepared for conversion into energy statistics formats:

>	Conversion of volume units into mass units;
>	Conversion of mass data into energy values, taking into account any differences in energy content (calorific value) compared to standard values;
>	Grouping of input data;
>	Creation of indicators.

A final quality check consists of an overall consistency check (explanation of statistical deviations and, if necessary, transfer operations).

All these methods are explained in statistics manuals and training materials available on international statistics websites. However, learning and mastering these techniques does not happen overnight. We strongly recommend **that the NEIS Coordinator set up a process to assess the capacities of his team and establish partnerships with organisations capable of providing training**, such as AFREC, without forgetting that the Statistical Institute is able to provide technical support on this subject.

Quality assurance includes all planned and systematic activities that can be demonstrated to ensure that statistics are relevant or suitable for the uses intended by users and stakeholders. This includes anticipating and avoiding problems in order to prevent or limit the occurrence of errors.

Activities or measures to ensure quality concern not only the statistics produced, but also the organisation and underlying processes that lead to them.

There are several quality assurance frameworks that enable quality management to be organised within the NEIS in accordance with the requirements of the quality assurance framework. These include:

- The African Union Quality Assurance Framework for Statistics
- The Quality Assurance Framework for Energy Statistics provided in the RISE

It is important for the Coordinator to choose the framework that is appropriate for their situation. Introductory training is recommended in order to understand the issues and impact of quality management on the organisation of the NEIS.

QUALITY OF STATISTICAL RESULTS

The measurement of the quality of results or products is described in terms of the dimensions specified in the table below, which together characterise the fitness for use of the results produced by the NEIS.

Table 3 : Dimensions of statistical quality and means of assessment

Relevance	The statistics meet user needs	Assessment of responsiveness to user needs
Accuracy and reliability	They estimate or describe reality correctly over time	Internal ex post control by the statistical team or a technical working group
Timeliness and punctuality	The time between the end of the reference period to which the information relates and its availability to users is planned and respected	Reference to the dates of availability and updating
Consistency and comparability	Statistics are consistent internally, over time and comparable between regions and countries	Cross-checks at the time of data collection: detect inconsistencies and revisions with data providers Additional checks to monitor compliance with international standards
Accessibility and clarity	Statistics are presented in a clear and understandable format, published in an appropriate and convenient manner, and available and accessible in an impartial manner	Compilation of user comments/complaints.

DOCUMENTATION

Everything that is evaluated must be recorded; reporting on data quality is good practice. Furthermore, disseminating qualitative information to users of statistics enables them to use it in an informed manner.

CONTINUOUS QUALITY IMPROVEMENT

When implementing an NEIS, numerous difficulties may arise that will impact the assessment of the quality of results. The issue of **data quality is important, but it should not take precedence over the completion of the first stage, which is the establishment of the organisation and operational processes.**

Furthermore, the multidimensional nature of quality indicators must be borne in mind: in some situations, improving one dimension may have unexpected effects on another. For example, data accuracy and reliability versus timeliness and punctuality. How should trade-offs be made when the quest for accurate information leads to delays in the delivery of statistics?

The energy statistics quality management process can only be designed as part of a continuous improvement approach.



Figure 7 : Process for the continuous improvement of the quality of statistical

5.3 DISSEMINATION

This is the final stage in the process of making official information available in a structured and reliable format that is harmonised with all other energy information systems.

The first point that an NEIS coordinator needs to establish is the scope of dissemination:

- For what purposes (evaluation of energy policies, planning of structural projects and detailed knowledge of energy flows, international commitments, macroeconomic factors linked to the country's external dependence, e.g. dependence on energy imports);
- For which actors (government, national statistical institute, regional and international institutions, data providers, research and consultants, etc.);
- What information is confidential or restricted? What arrangements are in place to ensure confidentiality (restricted access based on user profiles, aggregation of information and "camouflage" techniques)? This point is important because it can have a serious impact on the quality of data- (e.g. information that cannot be published in energy supply reports, which would undermine the relevance of data for the sector concerned).

The second point on which coordination must take a position is the dissemination channel.

- Is the data disseminated solely by the National Statistical System (reports, statistical yearbooks, etc.)?
- Does the NEIS set up its own tools (which does not exclude the previous point), such as a dedicated website, reports or use of the information portal of the relevant ministry?

The current trend is to set up information websites, which makes it possible to reach a wider audience and facilitate access, and the cost of developing a website is no longer prohibitive. The figure below shows an approach to a website developed for an NEIS that provides access to essential information from a dashboard in standard formats: national balance sheet, historical series, indicators.

The features are limited to the essentials, so development costs are affordable (a few tens of thousands of pounds).



Figure 8 : online NEIS dashboard

The keys to the site's sustainability are its hosting on a secure server and its maintenance, which is a financial burden that should not be overlooked (an annual budget should be set aside).

Another important aspect of digital technologies is that they enable the dematerialisation of information transmission. This is the project that TOGO has implemented by setting up access for data providers on its NEIS-TOGO portal. They use this connection to upload their data and view it (historical data, etc.).

The expected benefits are:

- Elimination of transcription or data entry errors;
- Faster data transmission;
- Greater involvement of data providers.

In return, the NEIS team must have the skills to administer the site and provide technical assistance to users.

6 ACTIVITY PLAN AND BUDGETS



Throughout the previous chapters on activities, capacity and skills building actions have been highlighted. All of this needs to be formalised in an action plan and its financing plan.

Whether or not the NEIS has its own resources, the Coordination Unit must carry out this exercise and have an annual and/or multi-year activity plan. This has several advantages:

1. It encourages reflection on activities and their priorities (focusing on data accuracy, timely delivery, etc., material and human resources, external services, launch dates and completion deadlines, who is leading the activity, etc.). At the end of the process, activities are listed, ranked by priority, and communicated internally and to partner institutions.

2. Also consider the feasibility of the activity plan in terms of funding:

a. For human or material resources internal to the unit, these are taken from a larger budget, which is that of the institution that supports the NEIS, or from the NEIS's annual allocation if it is autonomous. Nevertheless, this raises a question: do the internal resources allocated correspond to the internal resources that the NEIS needs? If not, how can this be remedied?

b. Calls for external services. What are their prices and does the NEIS have a source of funding? If not, what partnerships should be sought (NSI, technical and financial partners, etc.)?

3. Have a tool for managing the NEIS's activities, which also serves as an indicator/demonstrator in the evaluation of the quality management system (no planning, no coherent and rational action to improve quality).

The formal structure of the activity plan and its financing plan is to be defined by the NEIS coordination team. However, a simple table such as the one used for the country assessments carried out for AFREC can serve as a basis.

Objective	Specific objective	Action	Priority	Res. Human days	Res. hum EUR	Budget Fees or Consultant EUR	Total	Indicator	Timeframe
3 Increase material, human and budgetary resources	A. Strengthen IT infrastructure	3A.1 Acquire IT resources	1	10	1,500	9,000	10	Invoices	H2
		3A.2 Ensure access to a reliable internet connection	1	--	--	--	--	Subscription contract	S2 2025
		3A.3 Implement backup procedures	1	--	--	--	--	Service contract if external service	S1 2026
		3A.4 Use of an external server	3	--	--	--	--	N/A	2027 and beyond
	B. Provision of vehicles	3B.1 Provide the statistics team with a vehicle	2	--	--	--	--	N/A	Q1
	C. Prepare a plan to strengthen the statistical team	3C.1 Participate in a mutual assistance network with NFPS from other AFREC member countries	1	--	--	--	--	Participation in AFREC events	S2 2025
		3C.2 Aligning resources and skills with strategy	1	--	--	--	--	HR management and strengthening plan adopted	S2 2026

Figure 9 : Example of an action plan format.



Section	Status	Decision	Urgency
General objectives			
Clarify the objectives of implementing the NEIS			
Clarify the objectives of improving the NEIS			
Record the needs expressed by stakeholders			
Energy statistics are multi-sectoral			
If not, describe the obstacles and propose actions to overcome them			
Institutional framework			
Mapping of actors			
Identify the actors			

Section	Status	Decision	Urgency
<i>Institutional framework</i>			
Recognise the NEIS as the representative of the energy sector in national statistics			
Establish an institutional position for the NEIS that enables it to engage in dialogue with all stakeholders.			
Participate in the steering bodies of the national statistical system.			
Establish frameworks for collaboration with statistical institutes			
Prepare the legal framework that makes it mandatory to respond to requests for energy statistics			
Human resources			
Obtain the human resources needed to carry out the NEIS's tasks (coordination, production of statistics, management of digital tools)			
Ensure the establishment of focal points in stakeholder institutions			
Focus on support functions: external coaching and methodological capacity building (NSI)			
Material resources			
Obtain the material resources needed for the teams to do their work (premises, workstations, computers, software, etc.)			
Benefit from reliable internet access			
Set up reliable and secure data backup infrastructure			
Skills enhancement			
Capitalise on and document working methods			
Provide new arrivals with self-training tools			
Audit skills and implement a training plan			
Organise skills enhancement sessions (short sessions)			

Section	Status	Decision	Urgency
Provide staff with long-term and/or diploma-level training			
Information Constitution			
Collect activity reports from companies in the energy sector			
Develop questionnaires/information collection forms tailored to the institution/company being surveyed (Ministry of Hydrocarbons, Electricity Regulatory Authority, Ministry of the Environment, Ministry of Transport, etc.)			
Promote harmonisation of definitions and classifications among data providers			
Establish a schedule for statistical studies or surveys to be carried out			
Participate in NSI technical bodies for the preparation of statistical survey questionnaires			
Process the data received and carry out internal checks			
Check that definitions are harmonised with data providers			
Enter data and check the overall consistency of energy statistics			
Balance between timeliness and accuracy of data			
Assess employees' ability to complete the exercise			
Organise a final validation			
Quality assurance			
Identify an appropriate methodological framework for quality assurance (StatAfric, etc.)			
Integrate the guidelines of the quality assurance framework into the organisation of the NEIS			
Assess data quality			
Organise quality documentation			
Assess user satisfaction with statistics			
Organise a continuous quality improvement process			

Section	Status	Decision	Urgency
Distribution			
Define the distribution scope			
Define the distribution media			
Maintain data confidentiality.			
Activity plan and budget			
Prepare an annual or multi-year activity plan that includes data collection, processing and dissemination, as well as strengthening resources, capacity and institutionalising the NEIS.			
Assess the budget (human resource costs for the NEIS unit, expenses and service purchases)			
Prioritise activities			



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