COUNTRY PRACTICE IN ENERGY STATISTICS

Topic/Statistics:	Coal & I	Lignite	Statistics

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Country: India

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Abstract

Write a short abstract of the statistics, and try to limit it to one page. The purpose of the abstract is to give the reader a general overview of the statistics/topic. It should therefore include a brief overview of the background and the purpose of the statistics, the population, the sample (if relevant), the main data sources, and the main users of the statistics. The abstract should also mention what is the most important contribution or issue addressed in the country practice (e.g. the practice deals with challenges of using administrative data, using of estimation, quality control, etc.). If there are other elements that are considered important, please feel free to include them in the abstract.

Keep in mind that all relevant aspects of the statistical production will be covered in more detail under the different chapters in the template. Therefore, the abstract should be short and focused on the key elements. What the most important elements are can vary from statistics to statistics, but as a help to write an abstract you can use the table below. The table can either replace a text or can be filled out in addition to writing a short text.

Key elements		
Name of the statistics	Coal and Lignite Statistics	
	Coal Controller's Organisation has been carrying out for the past several years the task of collection and dissemination of data related to the coal and lignite sector of the country to meet data requirement of the Ministry of Coal, related ministries and Government Organisations, different research bodies etc. through its publications namely 'The Coal Directory of India' and 'Provisional Coal Statistics'.	
Background and purpose of the statistics	The data is collected from different coal/lignite companies under the statutory power vested with the Coal controller under the provisions of Colliery Control Rules, 2004 and the collection of Statistics Act, 1953 and publications of CIL, SAIL, DGCI&S and CSO etc.	
	We are grateful to different to different data supply agencies viz., all CIL subsidiaries, SCCL and other coal companies, SAIL Units, International Energy Agency (IEA), Geological Survey of India (GSI), Directorate General of Commercial intelligence and Statistics (DGCI&S), Central Statistical Organization (CSO), Central electricity Authority, Steel Authority of India and Cement Manufacturer's association for providing useful information so as to make an exhaustive data-base related to coal & lignite.	
Population, sample and data sources	Population: All coal producing companies (Public/Private) Sample: No sample is drawn till now	
Main users	Govt. Bodies On regular basis:- 1) M/o Coal 2) M/o Statistics and PI 3) IBM	

	4) State Govt. 5) CIL and SCCL (PSU)	
	International Bodies	
	International (Energy Agency) UNSD (through CSO)	
	Other Ministries of Govt. of India as and when required.	
Important contribution or issue addressed		
Other remarks	As the number of players in this field is growing very fast, getting information from each of them on monthly basis is becoming difficult.	

1. General information

1.1. Name of the statistics/topic

The statistics/topic could either be a specific energy statistics (e.g. electricity production) or a topic within energy statistics (e.g. energy balances). For more information, please see Section III of the Instructions.

Coal and Lignite Statistics

1.2. History and purpose

State when the statistics were first published.

First Coal Directory was published in - 1969

Describe briefly the main purpose of producing the statistics and why it is relevant.

Coal is the main input for Iron & Steel Industry and Power Sector. Therefore, production and sectorwise despatch data of coal is needed to project the growth of these linked sectors.

Coal resource is India is limited (Although not scarce). Therefore, a regular monitoring of coal production is a required to as a part of close monitoring of this sector.

1.3. Reference period

State the time period the data are collected for.

Monthly Data: Previous Calendar Month

Yearly Data: April – March (Previous Financial Year)

1.4. Frequency

Specify how often the statistics are disseminated (e.g. annually, monthly, quarterly, etc.). If the statistics are not produced at regular intervals, state at what times they have been produced in the past and the main reasons behind the irregularities.

Monthly coal Statistics: For M/o Coal, MOSPI, IBM, PMO

Yearly dissemination: Apr-May:- Provisional result of previous financial Year

Jan-Feb: Coal Directory with firm results of previous financial year

1.5. Dissemination

Describe how the statistics are published (e.g. printed publications, online publications, online databases, etc.). If applicable, include the web address to the main website of the statistics.

Both the yearly publications are in printed form.

1.6. Regional level

State the lowest geographical level (e.g. administrative regions, municipalities, etc.) for which the statistics are made available to the public.

Lowest Geograpical Level: State/UT

1.7. Main users

Identify the key users of the data and the main applications. Include both internal and external users, and if possible try to distinguish between end users and others.

- 1) M/o Coal
- 2) MOSPI
- 3) IBM
- 4) PMO
- 5) RBI
- 6) Planning Commission
- 7) State Govt.
- 8) IEA
- 9) UNSD

1.8. Responsible authority

Write the name of the institution and department/office with the main responsibility for disseminating the statistics (e.g.: Statistics Norway, Department of Economics, Energy and the Environment).

Coal Controller's Organisation, M/o Coal

1.9. Legal basis and legally binding commitments

State the national legal basis for the data collection. Include a complete reference to the constitutional basis, and web address to an electronic version (e.g.: The Statistics Act of 16 June 1989 No. 54, §§2-2 and 2-3, http://www.ssb.no/english/about_ssb/statlaw/forskrift_en.html).

- 1) Colliery Control Rules,2004(http://www.coal.nic.in/ccr2004.pdf)
- 2) Collection of statistics Act,2011
- 3) (http://mospi.nic.in/Mospi_New/upload/COS-

Act_2008_Enclish_26may11.pdf?status+1&menu_id=159

If the data collection is not based on a legal basis, give a short description of other agreements or volunteer arrangements.

N.A.

If applicable, give reference to national and international commitments that are legally binding (e.g. EU statistical legal acts).

N.A.

1.10. Resource requirements

Specify how the production of the statistics is financed (e.g. over the ordinary budget, project based support, financial support from other institutions or organization). If applicable, state the contracting entity (e.g.: Ministry, EU Commission, OECD). A contracting entity is any entity which is ordering a survey or the compilation of a statistics, and paying for it

Production of the statistics is funded from ordinary budget

Specify the resource requirements for producing the statistics (e.g. man-labour days, number of workers involved in the statistical production process of the statistics/topic in question).

Number of Resource persons engaged:

1) Two ISS officers at SAG and STS level respectively

1.11. International reporting

List any international organizations and names of reporting schemes that the statistics are reported to. If available, also include the website where the reported data are published (e.g. International Energy Agency, Monthly Oil Statistics, UNSD, etc.).

IEA publication on Energy Statistics

2. Statistical concepts, methodology, variables and classifications

2.1. Scope

Describe the scope of the statistics (e.g. the statistics cover supply and use of all energy products in Norway, classified according to International Standard Industrial Classification of All Economic Activities – ISIC).

Classification coal is given in additional page: please see

2.2. Definitions of main concepts and variables

Describe the main concepts (e.g.: territory principle, resident principle, net calorific value, gross calorific value).

Definitions are given in additional pages: please see

Describe the main variables (e.g. how are the different energy products defined in the statistics? How are production, intermediate consumption, final consumption, transformation, feed stock, the energy sector, etc. defined?).

2.3. Measurement units

Describe in what unit the data is collected (e.g. physical unit (m3, metric tons), monetary unit (basic prices, market prices)). Describe in what unit the data is presented. Describe if the calorific values are collected (e.g. on a net vs. gross basis) and how they are used.

If applicable, describe the density of the energy product(s) and the estimated *thermal efficiency coefficients* of different energy products and consumer groups or by appliance. Thermal efficiency coefficient indicates the share of the energy products which is actually usable for end consumption. Descriptions of density and thermal efficiency coefficient could alternatively be put in an annex.

Quantity is measured in Million Tonnes and Value is measured in million Rs.

2.4. Classification scheme

Include references to relevant international and national standard classifications. If national, give a brief description of the standards. If available, include web addresses to the electronic version of the standards).

Classification coal is given in additional page: please see

2.5. Data sources

Give an overview of the different data sources used in the collection and compilation of the statistics/topic (e.g. household survey, enterprise/establishment survey, administrative data/registers, foreign trade statistics, production statistics and other primary/secondary data sources).

Examples of administrative sources/registers are: business register for enterprises and establishments, population register, land register, housing and building registers, tax registers, international trade registers, etc.

Annual Survey of Coal & Lignite

2.6. Population

Describe the entire group of units which is the focus of the statistics (the population).

Population consists of all companies in public and private sector engaged in coal/lignite production

Specify the following statistical units:

- Reporting unit
- Observational unit
- Analytical unit

Examples of different kind of statistical units include: enterprise, enterprise group, kind-of-activity unit (KAU), local unit, establishment, homogeneous unit of production.

In most cases the reporting unit, observational unit and analytical unit are identical, but there are examples where this is not the case. In electricity statistics, you may find that energy companies (the reporting unit) provide data about different consumers like the individual household or manufacturing company (the observational unit). The analytical unit may be a group of energy consumers, defined by the ISIC.

Reporting, observational and analytical units are same.

2.7. Sampling frame and sample characteristics

Describe the type of *sampling frame* used in the collection and compilation of the statistics (e.g. list, area or multiple frames). A sampling frame is the source material or device from which a sample is drawn. Note that the sampling frame might differ from the population.

Compilation of data is done based on complete enumeration

For each survey(s) used for the compilation of the statistics, specify the *sampling design* (e.g. random, stratified, etc.). Describe the routines employed for updating the sample. Include information about the sample size, and discuss to what extent the sample covers the population (e.g. energy consumption in the sample compared to total energy use by the population).

Note that chapter 2.7: Sample frame and sample characteristics may overlap with chapter 3.4: Grossing up procedures.

N.A.

2.8. Collection method

For each survey used for the compilation of the statistics/topic, describe how the data are collected (e.g. face-to-face, telephone, self-administered, paper and internet-based questionnaires, or administrative data and registers).

Paper based questionnaires are sent to all producing companies and subsequently companies sent back filled up questionnaires through email/fax/post etc.

2.9. Survey participation/response rate

For each survey used for the compilation of the statistics/topic, specify the average response rate, or refer to response rates for specific surveys conducted.

Average response rate is 100%

3. The statistical production process

3.1. Data capture and storage

Describe how the data is captured and stored (e.g. if the respondent replies using Internet-based questionnaire, the received data are electronically transferred to the production database. Paper questionnaire responses are keyed manually to the production database).

Paper questionnaire data is entered into MS Excel/Access database.

3.2. Data editing

Describe the regular routines employed for detecting and correcting errors. This may include:

- Manual routines for detecting and correcting errors
- Automatic error-detection (and correction)
- Micro- and macro editing procedures
- Data validation procedures
- Outlier identification
- Processes and sources used for quality controls

Data editing consists of:-

- 1) Pre data-entry scrutiny-manually
- 2) Before table generation outliers are re-confirmed with company
- 3) Post table generation, inter table consistencies are checked and data validation is done accordingly.

3.3. Imputation

Describe the principles for imputation and the assumptions that these principles are based on. Note that this chapter may overlap with chapter 3.2: Data editing and chapter 5.2: Accuracy

Imputation is not done generally. However, for monthly data imputation is done by last year's same month's data in case of monthly provisional data compilation.

3.4. Grossing up procedures

Describe how the population is divided into strata and what statistical models the estimations in the strata are based on. Describe how sub-indices are combined into aggregate indices and how uncertainty is estimated.

No estimation procedure is involved. Gross value is summation of individual values.

3.5. Analytical methods

Give a description of any analytical methods used to adjust the data (e.g.: seasonal adjustment and temperature adjustment). A more detailed description of the analytical method can also be included as an annex.

N.A.

4. Dissemination

4.1. Publications and additional documentation

Describe the form of dissemination of the statistics/topics in question (e.g. printed publications, website, etc.). Please provide relevant website link(s) if available.

Printed copy of the publications are disseminated. Copies are available in the office.

Give a complete reference to publicly available statistics databases where data from the statistics can be extracted. Include web addresses if available online.

www.coalcont-wb.nic.in

Indicate whether you charge users for access to the statistics at any level of aggregation.

No charges are imposed. However raw data is not disseminated.

4.2. Revisions

Describe the current revision policies. E.g.: Is historical data revised when new methodology, new definitions, new classifications etc. are taken into use? Is the data continuously revised, or is the data revised at certain points in times (e.g. every third year, annually, etc.)?

Published data of past years are not revised.

If applicable, describe any major conceptual or methodological revisions that have been carried out for this statistic/topic in the past.

4.3. Microdata

Describe how microdata are stored.

Microdata is stored in MS Excel/Access.

Specify if microdata are available for scientific and/or public use. If so, describe under what conditions these are made available.

Microdata is not available for public use.

4.4. Confidentiality

Describe the legal authority that regulates confidentiality, and what restrictions are applied to the publication of the statistics.

Company-wise value data is not published. Data is disseminated at state level

Describe the criteria used to suppress sensitive data in statistical tables (cell suppression).

Describe how confidential data are handled.

Describe any confidentiality standards that go beyond what is legally required.

5. Quality

5.1. Relevance

State to which degree the statistical information meet the real needs of clients/users.

Till date, no data consumer expressed dissatisfaction

5.2. Accuracy

State the closeness of computations or estimates to the exact or true values that the statistics were intended to measure.

No estimation is done.

Measurement and processing errors

Discuss the measurement and processing errors that are relevant for the statistics. Try as far as possible to give an estimation of the size and scope of the errors.

Non-response errors

State the size of the unit non-response and the item non-response, distributed by important variables in the population (e.g. region, industry). Consider if the non-response errors are systematic, and if so, describe the methods used to correct it. Indicate whether the effects of correcting non-response errors on the results have been analysed, and, if so, describe them.

Non-response error for specific items may occur. Depending on values of other parameters and time series values, the value is imputed

Sampling errors

Discuss the size of the sampling errors. Compare the population and sample with regards to important properties (e.g. coefficient of variance).

Does not arise

Other sources of error

Discuss other sources of errors that might be relevant for the statistics. E.g.: Model assumption errors, coverage errors

Does not arise

5.3. Timeliness and punctuality

Specify the time between the end of the reference period and publication.

If the statistics are published both as preliminary and final figures, specify the time between publication of preliminary and final figures. You should also point out whether the publication date is set according to certain rules (e.g. advance release calendar, a specific day or prior to other publications).

Provisional Data Publication: 2-3 months

Final Data Publication: 1 Year

Point out if there have been any major discrepancies between the planned publication date and the actual publication date in recent years. If so, state the length of this discrepancy and its cause.

No delay in recent past

5.4. Accessibility

Describe how easily accessible the statistics are. In particular, is there an advance release calendar to inform the users about when and where the data will be available and how to access them?

Are metadata and other user support services easily available? Are there particular groups that don't have access to the published statistics (e.g.: visually disadvantaged)?

Data is accessible only in printed form and no advance release calendar is there.

5.5. Comparability

Discuss the comparability of the statistics over time, geographical areas and other domains.

Comparability over time

Discuss comparability over time and include information about whether there have been any breaks in the time series of the statistics and why. Also describe any major changes in the statistical methodology that may have had an impact on comparability over time.

There were as such no major changes in methodology which can affect comparability over time

Comparability over region

Discuss comparability over geographical areas, and include information about whether the statistics are comparable to relevant statistics published by other countries and/or international organisations.

All parameters are comparable over states.

Comparability over other domains

Discuss comparability over domains, and include information about whether the statistics are comparable between different industries, different types of households etc.

5.6. Coherence and consistency

Discuss the coherence/consistency between preliminary and final figures.

As the companies change data after audit and due to some other changes, there can be variation between provisional results and final results.

Discuss the coherence/consistency between monthly, quarterly or yearly statistics within the same subject area. Can the results of different frequencies for the same reference period be combined in a reliable manner?

Aggregation of monthly figures may differe from annual figure due to data revision by companies

Discuss the coherence/consistency with other related statistics (also those produced by other institutions/organisations on the same subject).

6. Future plans

Are there any current or emerging issues that will need to be addressed in the future? These could include gaps in collection, timeliness issues, data quality concerns, funding risks, confidentiality concerns, simplifications to reduce respondents' burden etc.?

- 1. Number of players are increasing in this sector. Therefore, complete enumeration on monthly and yearly basis are becoming difficult day by day.
- 2. As there is a change in coal classification methodology, there might be some data gap while switching from one system to another system.

Annexes

Illustrations and flowcharts

Illustrations and flowcharts are useful to summarize information and to get a better overview of the statistical production process. Illustrations and flowcharts can either be places in annexes or be included under relevant paragraphs in the template.

E.g.:

- A conceptual flowchart which illustrates the flow of data in the production of the statistics.
- A flowchart which illustrates the main tasks in the production process and the dependency between them.

Time schedule

Include a time schedule for the different phases of the statistical production process. The statistical production process *may* be divided into the following phases. Phase 1-3 may only be relevant for when a new statistics/survey is set up.

- 1. Clarify needs (e.g. map users needs, identify data sources)
- 2. Plan and design (e.g. plan and design population, sample size, how to analyze and edit data)
- 3. **Build** (e.g. build and maintain production system, test production system)
- 4. **Collect** (e.g. Establish a frame, draw the sample, collect data)
- 5. Edit (e.g. identify and code micro data, edit data, imputation)
- **6. Analyse** (e.g. quality evaluation, interpret, analyse)
- 7. **Disseminate** (e.g. publish data, user contact)

Ouestionnaires

Include the complete questionnaire(s)/survey form(s) used

Example of publication tables

Include an example of a typical table published for the statistics. Include web addresses if available online.

Detailed description on analytical methods

If relevant, a detailed description of analytical methods used in the statistical production (like seasonal adjustment, temperature adjustment etc.) may be described in an annex. A short description can also be included in chapter 3.5: Analytical methods or under other suitable chapters.

Annexure

Classification of Coal

Since January, 2011, Ministry of Coal vide notification 22021/1/2008-CRC-II (dated 16/1/2011) prescribed switch over from existing Useful Heat Value (UHV)based system of grading and pricing of non-coking coal produced in India to fully variable Gross Calorific Value (GCV) system. As per the new system, following nomenclature is proposed for gradation of non-coking coal is proposed:-

Grades of Non-coking Coal	GCV Range (Kcal/KG)
G1	GCV exceeding 7000
G2	GCV between 6701 and 7000
G3	GCV between 6401 and 6700
G4	GCV between 6101 and 6400
G5	GCV between 5801 and 6100
G6	GCV between 5501 and 5800
G7	GCV between 5201 and 5500
G8	GCV between 4901 and 5200
G9	GCV between 4601 and 4900
G10	GCV between 4301 and 4600
G11	GCV between 4001 and 4300
G12	GCV between 3700 and 4000
G13	GCV between 3400 and 3700
G14	GCV between 3101 and 3400
G15	GCV between 2801 and 3100
G16	GCV between 2501 and 2800
G17	GCV between2201 and 2500

7. Based on the GCV ranges of proposed gradation and erstwhile gradation, a concordance table is generated for academic discussions. However, it may be noted that this concordance does not depict exact one-to-one relation between the two systems.

Old Grading based on UHV	New Grading based on GCV
Non Coking Coal:A	G1
	G2
	G3
Non Coking Coal:B	G4
	G5
Non Coking Coal: C	G6
Non Coking Coal: D	G7
	G8
Non Coking Coal: E	G9
	G10
Non Coking Coal: F	G11
	G12

Old Grading based on UHV	New Grading based on GCV
Non-coking Coal:G	G13
	G14
Non Coking Coal: Ungraded	G15
	G16
	G17

Some Useful Definitions:-

Man Productivity: Output in terms of raw coal raised in tonnes per man per shift (OMS) is being treated as a measure of man productivity.

Despatch & Offtake:- The term "Despatches" (say, of raw coal) is used in this compilation to mean all the despatches to different sectors and exclude collieries' own consumption (boiler coal used in collieries and supply to employee). On the other hand "Off-take" would mean total quantity of raw coal lifted for consumption and naturally include colliery consumption

Thus Off-take + Despatches + colliery consumption.

Stock:- The term "Pit-head Closing Stock" of raw coal is used in our compilation to mean all the raw coal stock at pit-head of collieries. On the other hand, CIL etc. describe closing stock of an item pertaining to a company taking into account the stock lying in stockyards, in transition and in washeries and coke plants etc. similarly for washed coal, middlings and hard coke, closing stock refers to those stocks lying with the producers of these items. There are two concepts of pithead closing stocks used, viz., Book stock and vendible Stock. While Vendible stock is the actual physical stock available for sale etc., Book stock is one that is derived by calculation:-

Closing Book Stock=Opening Book Stock+Production-Off-take Where Offtake= Despatches +Colliery Consumption

Pit-head Value:- Pit-head Value of coal is the value of coal at pit-head of the colliery. It is computed on the basis of basic price – thus it does not involve any cost of loading, transportation from pit-head,loading,Cess, Royalty, Sales tax, Stowing Excise Duty etc. This is followed for all non-captive coal companies viz. CIL Subsidiaries, Singareni Collieries Companies (SCCL), Jharkhand State Mineral development Corporation Ltd. (JSMDCL) and Jammu & Kashmir Mineral Ltd. (JKML).

Time schedule

Provisional Coal Statistics

- 1) Clarify needs (Despatch the schedules to Coal Companies)-March
- 2) Plan and design and Data collection (Tables are designed and reminders are sent in case all data are not received)-April(first 15 days)
- 3) Edit and Analyse (As such data editing is not done. However data scrutiny takes lot of time) Nov-Dec
- 4) Disseminate (final tables are generated and data disseminated) –Jan-Mar