

Chapter 4

Data Collection on Coal Supply, Transformation, and Consumption

Ministry of Energy and Mines, Lao PDR

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Chapter 4

Data Collection on Coal Supply, Transformation, and Consumption

1. Purpose

This document aims to help any person working for the Energy Data Collection Group of the MEM to collect coal supply and consumption information and generate an energy statistics report.

2. Introduction

ERIA prepared the coal questionnaire to help the DPC–MEM improve energy data collection in the Lao PDR.

3. Questionnaire Instructions

The questionnaire, definition of products, and instructions for completing the coal supply, transformation, and final consumption are based on IEA’s coal annual questionnaire published in July 2019; the *Energy Statistics Manual* (IEA, 2005); and ISIC, Revision 4 (UN-DESA, 2008).

3.1. Data sources and time frames

Data from coal producers, coal retailers, and coal power plants can be collected monthly, quarterly, and annually. If collected annually, the data should be reported for the calendar year (January to December).

3.2. Units, calorific values, and conversion factors

Coal is usually measured in tonnes or thousand tonnes. The unit used in the questionnaire for coal is tonnes. Energy (heat) content in calories is calculated by using the following calorific values (Table 4.1).

The net calorific value for lignite is estimated by subtracting 5% from the gross calorific value.

Table 4.1 Calorific Values by Coal Type

Coal	Heating Value		Tonne of Coal Equivalent (tce)		Tonne of Oil Equivalent (toe)	
	Gross Calorific Value	Net Calorific Value	Unit	Value	Unit	Value
	kcal/kg	kcal/kg				
Anthracite	7080–7248	6913–7248	tce	7×10^6 kcal	toe	10^7 kcal
Bituminous Coal	6639–7355	6352–7116	tce	7×10^6 kcal	toe	10^7 kcal
Other Bituminous Coal	5695–6388	5397–6089	tce	7×10^6 kcal	toe	10^7 kcal
Lignite	less than 4165	less than 3957	tce	7×10^6 kcal	toe	10^7 kcal

Note: The gross and net calorific values for coal in kcal/kg are derived from the gross and net calorific values in unit MJ/kg from the *Energy Statistics Manual* (IEA, 2005).

Source: IEA (2005).

Coal data are also in terms of tonne of coal equivalent (tce). The tonne of coal equivalent is not a unit of mass but a unit of energy used in the international coal industry to compare various fuels.

The relation between these two units is 1 tce = 0.7 toe.

3.3. Electronic questionnaire

An electronic questionnaire (e.g. Excel spreadsheet) should be used in collecting data to minimise the risk of data entry inconsistencies or errors.

3.4. What is coal?

Primary coal is a fossil fuel that usually looks like a black or brown rock, and consists of carbonised vegetal matter. The higher the carbon content of coal, the higher is its rank or quality. Coal types are distinguished by their physical and chemical characteristics, which determine the coal's price and suitability for various uses. All primary coal products covered in this questionnaire are solid fuels. The questionnaire includes anthracite, other bituminous coal, sub-bituminous coal, and lignite.

Derived fuels include both solid fuels and gases produced during coal processing and coal transformation. More detailed information on derived coal products is available in Annex 1 – Manufacture of Coal-Derived Fuels of the *Energy Statistics Manual* (IEA, 2005, p.157).

3.5. Definition of products

The three main categories of coal are hard coal, sub-bituminous coal, and brown coal (also called lignite). The gross calorific values for coal (kcal/kg) are based on IEA's coal annual questionnaire, published in July 2009.

- 1) Hard coal – refers to coal of gross calorific value equal to or greater than 5,700 kcal/kg. Hard coal includes:

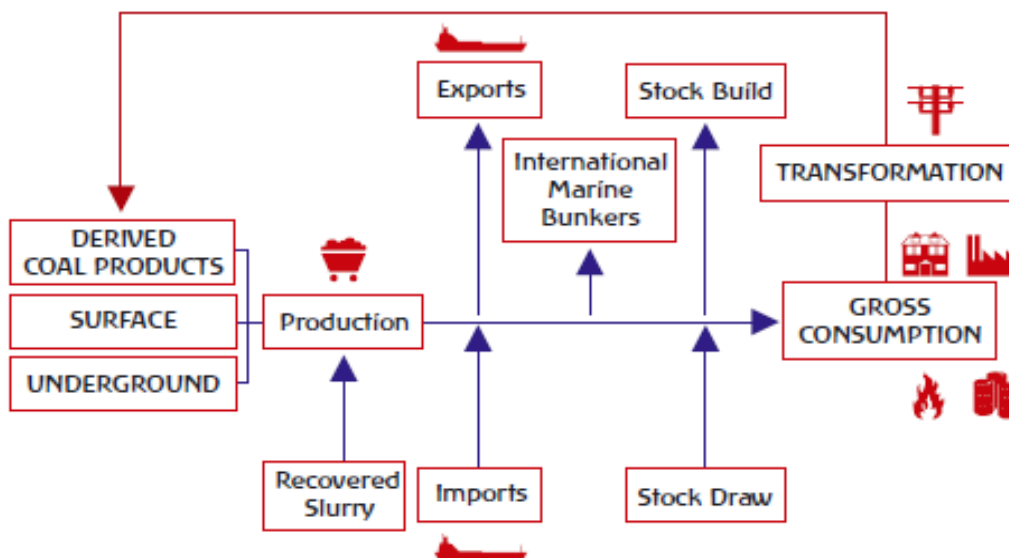
- Anthracite – high-rank coal used for industrial and residential applications. It generally has less than 10% volatile matter and a high carbon content (about 90% fixed carbon). Its gross calorific value is equal to or greater than 5,700 kcal/kg on an ash-free but moist basis.
- Coking coal – bituminous coal with a quality that allows producing coke suitable to support a blast furnace charge. Its gross calorific value is equal to or greater than 5,700 kcal/kg on an ash-free but moist basis.
- Other bituminous coal – coal mainly used for steam-raising purposes and includes all bituminous coal not included under coking coal nor anthracite. It is characterised by higher volatile matter than anthracite (more than 10%) and lower carbon content (less than 90% fixed carbon). Its gross calorific value is equal to or greater than 5,700 kcal/kg on an ash-free but moist basis. Bituminous coal used in coke ovens should be reported as coking coal.

2) Sub-bituminous coal – non-agglomerating coal with a gross calorific value equal to or greater than 4,165 kcal/kg and less than 5,700 kcal/kg containing more than 31% volatile matter on a dry mineral matter–free basis.

3) Lignite – non-agglomerating coal with a gross calorific value less than 4,165 kcal/kg and greater than 31% volatile matter on a dry mineral matter–free basis.

3.6. Instructions for completing supply, transformation, and consumption

Figure 4.1 Coal Flows Diagram



Source: IEA (2005).

3.6.1 Supply of coal

1) Opening stock

Report the opening stock level on the first day of the year (for annual data) of stocks on national territory.

2) Indigenous production

Coal production occurs either underground or surface (open pit).

Report the quantities of fuels extracted or produced, calculated after any operation to remove inert matter. In general, production includes the quantities consumed during the production process (e.g. heating or operation of equipment and auxiliaries) and supplies to other energy producers for transformation or other uses.

3) Purchase of coal from other producers and sources

- Purchase of coal from other producers – Report the quantity of coal purchased from other producers.
- From other sources – this comprises two components:
 - Report recovered slurries, middlings, and other low-grade coal products, which cannot be classified according to the type of coal. These include coal recovered from waste piles and other waste receptacles.
 - Report supplies of fuel whose production is covered in other fuel energy balances but for which consumption will occur in the coal energy balance. Further details of this component will be provided as memo items:

Memo items: From other sources:

of which *from oil products*

(e.g. petroleum coke addition to coking coal for coke ovens)

of which *from natural gas*

(e.g. natural gas addition to gas works gas for direct final consumption)

of which *from renewables*

(e.g. industrial waste as a binding agent in the manufacturing of patent fuel)

4) Imports and exports

Report the quantity of coal obtained from or supplied to other countries. The amount is determined as imported or exported when the coal has crossed a country's political boundary, whether customs has cleared it or not. The amount of fuels in transit (that is, on its way to the country) should not be included.

5) International marine bunkers

Report the quantities of fuels delivered to ships of all flags that are engaged in international navigation. The navigation may occur at sea, on inland lakes and waterways, and in coastal waters. Exclude consumption by ships engaged in domestic navigation (see Domestic navigation). The domestic and international split should be determined based on the port of departure and port of arrival and not by the ship's flag or nationality. Exclude consumption by fishing vessels (see Other

sectors – Fishing) and consumption by military forces (see Other sectors – Not elsewhere specified – Other).

6) Closing stock (actual)

Report the closing stock level on the last day of the year (for annual data) of stocks on national territory.

7) Stock change

Report the difference between the opening and closing stock levels held in the national territory.

8) Losses and own use

Report coal losses and own use in the production process.

9) Total domestic consumption

Report the quantity of coal domestic consumption from coal industries.

10) Calculated closing stock is defined as:

Opening stock + Indigenous production + Purchases of coal from other producers and sources + Imports – Exports – International marine bunkers – Losses and own use – Total domestic consumption

3.6.2 Transformation sector

Report the quantities of fuel used for the primary or secondary conversion of energy (e.g. coal to electricity, coke oven gas to electricity) or used to transform to derived energy products (e.g. coking coal to coke). The transformation sector is included in the following sub-sectors:

- Main activity producer electricity (Electricity generation) – Report quantities of coal used to produce electricity by all main activity producers.
- Main activity producer CHP (Cogeneration) – Report quantities of coal used to produce electricity and heat by all main activity producers.
- Main activity producer heat – Report quantities of coal used to produce heat by all main activity producers.
- Not elsewhere specified (Other Transformation) – Reported others not listed above.

3.6.3 Definition of flows – Final consumption of coal by sector

The final coal consumption is all coal consumed in agriculture, industry, commercial and public services, transport and residential sectors, and other – not elsewhere specified. These sectors are classified by ISIC into the following:

1) Agriculture

- Agriculture and forestry – Report fuels consumed by users classified as agriculture, hunting, and forestry by ISIC as follows: ISIC Divisions 01 and 02 (NACE¹ Divisions 01 and 02).
- Fishing – Report fuels delivered for inland, coastal, and deep-sea fishing. Fishing should cover fuels delivered to ships of all flags that refuelled in the country (includes international fishing). Also includes energy used in the fishing industry as specified in ISIC and NACE Division 03.

2) Industry

Report fuels consumed by the industry sector to support its primary activities.

Report quantities of fuels consumed in heat or CHP plants to produce heat used by the plant itself. Quantities of fuels consumed to produce electricity and heat that is sold should be reported under the appropriate Transformation sector.

- Iron and steel – ISIC Group 241 and Class 2431. Report pulverised coal injection into blast furnaces under ‘blast furnaces, Transformation sector’. Fuels used in blast furnaces should be reported in the Transformation sector to avoid double counting.
 - This class includes conversion operations by reducing iron ore in blast furnaces and oxygen converters or ferrous waste and scrap in electric arc furnaces, or by directly reducing iron ore without fusion to obtain crude steel, which is smelted and refined in a ladle furnace..
 - This class includes the casting of iron and steel, i.e. the activities of iron and steel foundries.
- Chemical and petrochemical – ISIC and NACE Divisions 20 and 21.
 - These divisions include the transformation of organic and inorganic raw materials by a chemical process and the formation of products. These distinguish the production of basic chemicals that constitute the first industry group from producing intermediate and end products produced by further processing basic chemicals that make up the remaining industry classes.

¹ Derived from the French title ‘*Nomenclature générale des Activités économiques dans les Communautés Européennes*’ (Statistical Classification of Economic Activities in the European Communities).

- These divisions include the manufacture of basic pharmaceutical products and pharmaceutical preparations. These also include the manufacture of medicinal chemical and botanical products.
- Non-ferrous metals – ISIC Group 242 and Class 2432 and NACE Group 24.4 and Classes 24.53 and 24.54.
 - These classes include the production of basic precious metals; production and refining of unwrought or wrought precious metals – gold, silver, platinum, etc. – from ore and scrap.
 - Casting of non-ferrous metals:
 - semi-finished products of aluminium, magnesium, titanium, zinc, etc.
 - light metals
 - heavy metals
 - precious metals
 - die-casting of non-ferrous metal castings
- Non-metallic minerals – ISIC and NACE Division 23. This division includes manufacturing activities related to a single substance of mineral origin. This division includes glass and glass products (e.g. flat glass, hollow glass, fibres, technical glassware, etc.); ceramic products; tiles and baked clay products; and cement and plaster – from raw materials to finished articles. The manufacture of shaped and finished stone and other mineral products is also included in this division.
- Transport equipment – ISIC and NACE Divisions 29 and 30
 - Manufacture of motor vehicles, trailers, and semi-trailers

These divisions include the manufacture of motor vehicles for transporting passengers or freight, various parts and accessories, and trailers and semi-trailers.
 - Manufacture of other transport equipment

These divisions include the manufacture of transport equipment, such as shipbuilding and boat making, railroad rolling stock and locomotives, aircraft and spacecraft and their parts.
- Machinery – Report fabricated metal products, machinery, and equipment other than transport equipment. ISIC and NACE Divisions 25–28
- Mining (excluding energy-producing industries) and quarrying – ISIC Divisions 07 and 08 and Group 099 (NACE Divisions 07 and 08 and Group 09.9)
- Food, beverages, and tobacco – ISIC and NACE Divisions 10–12
- Paper, pulp, and printing – ISIC and NACE Divisions 17 and 18. These include the production of recorded media.
- Wood and wood products (other than pulp and paper) – ISIC and NACE Division 16
- Construction – ISIC and NACE Divisions 41–43

- Textile and leather – ISIC and NACE Divisions 13–15
- Not elsewhere specified (Industry) – Report consumption not included above.

3) Commercial and public services

Report fuels consumed by business and offices in the public and the private sectors. Also include fuel used by all non-transport activities of ISIC and NACE Divisions 49–51. ISIC and NACE Divisions 33, 36–39, 45–47, 52–53, 55–56, 58–66, 68–75, 77–82, 84 (excluding Class 8422 [ISIC] and Class 84.22 [NACE]), 85–88, 90–96, and 99.

4) Transport

Report fuels used in all transport activities irrespective of the economic sector in which the activity occurs except for military use – see Not elsewhere specified (Other). Fuels used for heating and lighting at railway and bus stations and airports should be reported in Commercial and public services.

- Rail – Report all consumption used in rail traffic, including industrial railways and transport as part of urban or suburban transport systems (e.g. metro, tram).
- Domestic navigation – Report fuels delivered to vessels of all flags not engaged in international navigation. The domestic and international split should be determined based on the port of departure and port of arrival and not by the ship's flag or nationality.
- Not elsewhere specified (Transport) – Report fuels used for transport activities not included above.

5) Residential

Report fuels consumed by all households including 'households with employed persons ISIC and NACE Divisions 97 and 98'.

6) Other – Not elsewhere specified

Report activities not included elsewhere. This category includes military fuel used for all mobile and stationary consumption (e.g. ships, aircraft, road and energy used in living quarters), whether the fuel delivered is for the military of that country or another country.

4. Imports by Origin and Exports by Destination

Amounts are treated as imported or exported when the coal has crossed the country's political boundary, whether customs clearance has taken place or not. Where no origin or destination can be reported or where the country is not specified in the questionnaire, the category 'Unknown' may be used.

5. International Standard Industries Classification of all Economic Activities (ISIC)

The detailed structure of the ISIC is shown below.

Section A

Agriculture, forestry, and fishing

Division	Group	Class	Description
Division 01			Crop and animal production, hunting, and related service activities
	011		Growing of non-perennial crops
		0111	Growing of cereals (except rice), leguminous crops, and oilseeds
		0112	Growing of rice
		0113	Growing of vegetables and melons, roots, and tubers
		0114	Growing of sugar cane
		0115	Growing of tobacco
		0116	Growing of fibre crops
		0119	Growing of other non-perennial crops
	012		Growing of perennial crops
		0121	Growing of grapes
		0122	Growing of tropical and subtropical fruits
		0123	Growing of citrus fruits
		0124	Growing of pome fruits and stone fruits
		0125	Growing of other tree and bush fruits and nuts
		0126	Growing of oleaginous fruits
		0127	Growing of beverage crops
		0128	Growing of spices, aromatic, drug, and pharmaceutical crops
		0129	Growing of other perennial crops
	013	0130	Plant propagation
	014		Animal production
		0141	Raising of cattle and buffaloes
		0142	Raising of horses and other equines
		0143	Raising of camels and camelids
		0144	Raising of sheep and goats
		0145	Raising of swine and pigs
		0146	Raising of poultry
		0149	Raising of other animals
	015	0150	Mixed farming
	016		Support activities to agriculture and post-harvest crop activities
		0161	Support activities for crop production
		0162	Support activities for animal production

Division	Group	Class	Description
		0163	Post-harvest crop activities
		0164	Seed processing for propagation
	017	0170	Hunting, trapping, and related service activities
Division 02			Forestry and logging
	021	0210	Silviculture and other forestry activities
	022	0220	Logging
	023	0230	Gathering of non-wood forest products
	024	0240	Support services to forestry
Division 03			Fishing and aquaculture
	031		Fishing
		0311	Marine fishing
		0312	Freshwater fishing
	032		Aquaculture
		0321	Marine aquaculture
		0322	Freshwater aquaculture

Section B

Mining and quarrying

Division	Group	Class	Description
Division 05			Mining of coal and lignite
	051	0510	Mining of hard coal
	052	0520	Mining of lignite
Division 06			Extraction of crude petroleum and natural gas
	061	0610	Extraction of crude petroleum
	062	0620	Extraction of natural gas
Division 07			Mining of metal ores
	071	0710	Mining of iron ores
	072		Mining of non-ferrous metal ores
		0721	Mining of uranium and thorium ores
		0729	Mining of other non-ferrous metal ores
Division 08			Other mining and quarrying
	081	0810	Quarrying of stone, sand, and clay
	089		Mining and quarrying n.e.c.
		0891	Mining of chemical and fertiliser minerals
		0892	Extraction of peat
		0893	Extraction of salt
		0899	Other mining and quarrying n.e.c.
Division 09			Mining support service activities
	091	0910	Support activities for petroleum and natural gas extraction
	099	0990	Support activities for other mining and quarrying

Section C Manufacturing

Division	Group	Class	Description
Division 10			Manufacture of food products
	101	1010	Processing and preserving of meat
	102	1020	Processing and preserving of fish, crustaceans, and molluscs
	103	1030	Processing and preserving of fruit and vegetables
	104	1040	Manufacture of vegetable and animal oils and fats
	105	1050	Manufacture of dairy products
	106		Manufacture of grain mill products, starches, and starch products
		1061	Manufacture of grain mill products
		1062	Manufacture of starches and starch products
	107		Manufacture of other food products
		1071	Manufacture of bakery products
		1072	Manufacture of sugar
		1073	Manufacture of cocoa, chocolate, and sugar confectionery
		1074	Manufacture of macaroni, noodles, couscous, and similar farinaceous products
		1075	Manufacture of prepared meals and dishes
		1079	Manufacture of other food products n.e.c.
	108	1080	Manufacture of prepared animal feeds
Division 11			Manufacture of beverages
		1101	Distilling, rectifying, and blending of spirits
		1102	Manufacture of wines
		1103	Manufacture of malt liquors and malt
		1104	Manufacture of soft drinks; production of mineral water and other bottled waters
Division 12			Manufacture of tobacco products
	120	1200	Manufacture of tobacco products
Division 13			Manufacture of textiles
	131		Spinning, weaving, and finishing of textiles
		1311	Preparation and spinning of textile fibres
		1312	Weaving of textiles
		1313	Finishing of textiles
	139		Manufacture of other textiles
		1391	Manufacture of knitted and crocheted fabrics
		1392	Manufacture of made-up textile articles, except apparel
		1393	Manufacture of carpets and rugs
		1394	Manufacture of cordage, rope, twine, and netting
		1399	Manufacture of other textiles n.e.c.
Division 14			Manufacture of wearing apparel
	141	1410	Manufacture of wearing apparel, except fur apparel
	142	1420	Manufacture of articles of fur
	143	1430	Manufacture of knitted and crocheted apparel

Division	Group	Class	Description
Division 15			Manufacture of leather and related products
	151		Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur
		1511	Tanning and dressing of leather; dressing and dyeing of fur
		1512	Manufacture of luggage, handbags and the like, saddlery and harness
	152	1520	Manufacture of footwear
Division 16			Manufacture of wood and products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
	161	1610	Sawmilling and planing of wood
	162		Manufacture of products of wood, cork, straw, and plaiting materials
		1621	Manufacture of veneer sheets and wood-based panels
		1622	Manufacture of builders' carpentry and joinery
		1623	Manufacture of wooden containers
		1629	Manufacture of other products of wood; manufacture of articles of cork, straw, and plaiting materials
Division 17			Manufacture of paper and paper products
		1701	Manufacture of pulp, paper, and paperboard
		1702	Manufacture of corrugated paper and paperboard, and containers of paper and paperboard
		1709	Manufacture of other articles of paper and paperboard
Division 18			Printing and reproduction of recorded media
	181		Printing and service activities related to printing
		1811	Printing
		1812	Service activities related to printing
	182	1820	Reproduction of recorded media
Division 19			Manufacture of coke and refined petroleum products
	191	1910	Manufacture of coke oven products
	192	1920	Manufacture of refined petroleum products
Division 20			Manufacture of chemicals and chemical products
	201		Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms
		2011	Manufacture of basic chemicals
		2012	Manufacture of fertilisers and nitrogen compounds
		2013	Manufacture of plastics and synthetic rubber in primary forms
	202		Manufacture of other chemical products
		2021	Manufacture of pesticides and other agrochemical products
		2022	Manufacture of paints, varnishes and similar coatings, printing ink and mastics
		2023	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations
		2029	Manufacture of other chemical products n.e.c.
	203	2030	Manufacture of man-made fibres
Division 21			Manufacture of pharmaceuticals, medicinal chemical and botanical products
	210	2100	Manufacture of pharmaceuticals, medicinal chemical and botanical products

Division	Group	Class	Description
Division 22			Manufacture of rubber and plastics products
	221		Manufacture of rubber products
		2211	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres
		2219	Manufacture of other rubber products
	222	2220	Manufacture of plastics products
Division 23			Manufacture of other non-metallic mineral products
	231	2310	Manufacture of glass and glass products
	239		Manufacture of non-metallic mineral products n.e.c.
		2391	Manufacture of refractory products
		2392	Manufacture of clay building materials
		2393	Manufacture of other porcelain and ceramic products
		2394	Manufacture of cement, lime, and plaster
		2395	Manufacture of articles of concrete, cement, and plaster
		2396	Cutting, shaping, and finishing of stone
		2399	Manufacture of other non-metallic mineral products n.e.c.
Division 24			Manufacture of basic metals
	241	2410	Manufacture of basic iron and steel
	242	2420	Manufacture of basic precious and other non-ferrous metals
	243		Casting of metals
		2431	Casting of iron and steel
		2432	Casting of non-ferrous metals
Division 25			Manufacture of fabricated metal products, except machinery and equipment
	251		Manufacture of structural metal products, tanks, reservoirs, and steam generators
		2511	Manufacture of structural metal products
		2512	Manufacture of tanks, reservoirs, and containers of metal
		2513	Manufacture of steam generators, except central heating hot water boilers
	252	2520	Manufacture of weapons and ammunition
	259		Manufacture of other fabricated metal products; metalworking service activities
		2591	Forging, pressing, stamping, and roll-forming of metal; powder metallurgy
		2592	Treatment and coating of metals; machining
		2593	Manufacture of cutlery, hand tools, and general hardware
		2599	Manufacture of other fabricated metal products n.e.c.
Division 26			Manufacture of computer, electronic, and optical products
	261	2610	Manufacture of electronic components and boards
	262	2620	Manufacture of computers and peripheral equipment
	263	2630	Manufacture of communication equipment
	264	2640	Manufacture of consumer electronics
	265		Manufacture of measuring, testing, navigating, and control equipment; watches and clocks
		2651	Manufacture of measuring, testing, navigating, and control equipment

	2652	Manufacture of watches and clocks
266	2660	Manufacture of irradiation, electromedical, and electrotherapeutic equipment

Division	Group	Class	Description
	267	2670	Manufacture of optical instruments and photographic equipment
	268	2680	Manufacture of magnetic and optical media
Division 27			Manufacture of electrical equipment
	271	2710	Manufacture of electric motors, generators, transformers, and electricity distribution and control apparatus
	272	2720	Manufacture of batteries and accumulators
	273		Manufacture of wiring and wiring devices
		2731	Manufacture of fibre optic cables
		2732	Manufacture of other electronic and electric wires and cables
		2733	Manufacture of wiring devices
	274	2740	Manufacture of electric lighting equipment
	275	2750	Manufacture of domestic appliances
	279	2790	Manufacture of other electrical equipment
Division 28			Manufacture of machinery and equipment n.e.c.
	281		Manufacture of general-purpose machinery
		2811	Manufacture of engines and turbines, except aircraft, vehicle, and cycle engines
		2812	Manufacture of fluid power equipment
		2813	Manufacture of other pumps, compressors, taps, and valves
		2814	Manufacture of bearings, gears, gearing, and driving elements
		2815	Manufacture of ovens, furnaces, and furnace burners
		2816	Manufacture of lifting and handling equipment
		2817	Manufacture of office machinery and equipment (except computers and peripheral equipment)
		2818	Manufacture of power-driven hand tools
		2819	Manufacture of other general-purpose machinery
	282		Manufacture of special-purpose machinery
		2821	Manufacture of agricultural and forestry machinery
		2822	Manufacture of metal-forming machinery and machine tools
		2823	Manufacture of machinery for metallurgy
		2824	Manufacture of machinery for mining, quarrying, and construction
		2825	Manufacture of machinery for food, beverage, and tobacco processing
		2826	Manufacture of machinery for textile, apparel, and leather production
		2829	Manufacture of other special-purpose machinery
Division 29			Manufacture of motor vehicles, trailers, and semi-trailers
	291	2910	Manufacture of motor vehicles
	292	2920	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
	293	2930	Manufacture of parts and accessories for motor vehicles
Division 30			Manufacture of other transport equipment
	301		Building of ships and boats

	3011	Building of ships and floating structures
	3012	Building of pleasure and sporting boats
302	3020	Manufacture of railway locomotives and rolling stock
303	3030	Manufacture of air and spacecraft and related machinery
304	3040	Manufacture of military fighting vehicles
309		Manufacture of transport equipment n.e.c.
	3091	Manufacture of motorcycles
	3092	Manufacture of bicycles and invalid carriages
	3099	Manufacture of other transport equipment n.e.c.
Division 31		Manufacture of furniture
310	3100	Manufacture of furniture
Division 32		Other manufacturing
321		Manufacture of jewellery, bijouterie, and related articles
	3211	Manufacture of jewellery and related articles
	3212	Manufacture of imitation jewellery and related articles
322	3220	Manufacture of musical instruments
323	3230	Manufacture of sports goods
324	3240	Manufacture of games and toys
325	3250	Manufacture of medical and dental instruments and supplies
329	3290	Other manufacturing n.e.c.
Division 33		Repair and installation of machinery and equipment
331		Repair of fabricated metal products, machinery, and equipment
	3311	Repair of fabricated metal products
	3312	Repair of machinery
	3313	Repair of electronic and optical equipment
	3314	Repair of electrical equipment
	3315	Repair of transport equipment, except motor vehicles
	3319	Repair of other equipment
332	3320	Installation of industrial machinery and equipment

Section D

Electricity, gas, steam, and air-conditioning supply

Division	Group	Class	Description
Division 35			Electricity, gas, steam, and air-conditioning supply
	351	3510	Electric power generation, transmission, and distribution
	352	3520	Manufacture of gas; distribution of gaseous fuels through mains
	353	3530	Steam and air-conditioning supply

Section E

Water supply; sewerage, waste management, and remediation activities

Division	Group	Class	Description
Division 36			Water collection, treatment, and supply
	360	3600	Water collection, treatment, and supply
	370	3700	Sewerage
Division 38			Waste collection, treatment and disposal activities; materials recovery
	381		Waste collection
		3811	Collection of non-hazardous waste
		3812	Collection of hazardous waste
	382		Waste treatment and disposal
		3821	Treatment and disposal of non-hazardous waste
		3822	Treatment and disposal of hazardous waste
	383	3830	Materials recovery
Division 39			Remediation activities and other waste management services
	390	3900	Remediation activities and other waste management services

Section F

Construction

Division	Group	Class	Description
Division 41			Construction of buildings
	410	4100	Construction of buildings
Division 42			Civil engineering
	421	4210	Construction of roads and railways
	422	4220	Construction of utility projects
	429	4290	Construction of other civil engineering projects
Division 43			Specialised construction activities
	431		Demolition and site preparation
		4311	Demolition
		4312	Site preparation
	432		Electrical, plumbing, and other construction installation activities
		4321	Electrical installation
		4322	Plumbing, heat, and air-conditioning installation
		4329	Other construction installation
	433	4330	Building completion and finishing
	439	4390	Other specialised construction activities

Section G

Wholesale and retail trade; repair of motor vehicles and motorcycles

Division	Group	Class	Description
Division 45			Wholesale and retail trade and repair of motor vehicles and motorcycles
	451	4510	Sale of motor vehicles
	452	4520	Maintenance and repair of motor vehicles
	453	4530	Sale of motor vehicle parts and accessories
	454	4540	Sale, maintenance, and repair of motorcycles and related parts and accessories
Division 46			Wholesale trade, except of motor vehicles and motorcycles
	461	4610	Wholesale on a fee or contract basis
	462	4620	Wholesale of agricultural raw materials and live animals
	463	4630	Wholesale of food, beverages, and tobacco
	464		Wholesale of household goods
		4641	Wholesale of textiles, clothing, and footwear
		4649	Wholesale of other household goods
	465		Wholesale of machinery, equipment, and supplies
		4651	Wholesale of computers, computer peripheral equipment, and software
		4652	Wholesale of electronic and telecommunications equipment and parts
		4653	Wholesale of agricultural machinery, equipment, and supplies
		4659	Wholesale of other machinery and equipment
	466		Other specialised wholesale
		4661	Wholesale of solid, liquid and gaseous fuels, and related products
		4662	Wholesale of metals and metal ores
		4663	Wholesale of construction materials, hardware, plumbing, and heating equipment and supplies
		4669	Wholesale of waste and scrap and other products n.e.c.
	469	4690	Non-specialised wholesale trade
Division 47			Retail trade, except of motor vehicles and motorcycles
	471		Retail sale in non-specialised stores
		4711	Retail sale in non-specialised stores with food, beverages, or tobacco predominating
		4719	Other retail sale in non-specialised stores
	472		Retail sale of food, beverages, and tobacco in specialised stores
		4721	Retail sale of food in specialised stores
		4722	Retail sale of beverages in specialised stores
		4723	Retail sale of tobacco products in specialised stores
	473	4730	Retail sale of automotive fuel in specialised stores
	474		Retail sale of information and communications equipment in specialised stores
		4741	Retail sale of computers, peripheral units, software and telecommunications equipment in specialised stores
		4742	Retail sale of audio and video equipment in specialised stores
	475		Retail sale of other household equipment in specialised stores
		4751	Retail sale of textiles in specialised stores
		4752	Retail sale of hardware, paints, and glass in specialised stores

Division	Group	Class	Description
		4753	Retail sale of carpets, rugs, wall and floor coverings in specialised stores
		4759	Retail sale of electrical household appliances, furniture, lighting equipment, and other household articles in specialised stores
	476		Retail sale of cultural and recreation goods in specialised stores
		4761	Retail sale of books, newspapers, and stationery in specialised stores
		4762	Retail sale of music and video recordings in specialised stores
		4763	Retail sale of sporting equipment in specialised stores
		4764	Retail sale of games and toys in specialised stores
	477		Retail sale of other goods in specialised stores
		4771	Retail sale of clothing, footwear, and leather articles in specialised stores
		4772	Retail sale of pharmaceutical and medical goods, cosmetic and toilet articles in specialised stores
		4773	Other retail sale of new goods in specialised stores
		4774	Retail sale of second-hand goods
	478		Retail sale via stalls and markets
		4781	Retail sale via stalls and markets of food, beverages, and tobacco products
		4782	Retail sale via stalls and markets of textiles, clothing, and footwear
		4789	Retail sale via stalls and markets of other goods
	479		Retail trade not in stores, stalls, or markets
		4791	Retail sale via mail order houses or via Internet
		4799	Other retail sale not in stores, stalls, or markets

Section H

Transportation and storage

Division	Group	Class	Description
Division 49			Land transport and transport via pipelines
	491		Transport via railways
		4911	Passenger rail transport, interurban
		4912	Freight rail transport
	492		Other land transport
		4921	Urban and suburban passenger land transport
		4922	Other passenger land transport
		4923	Freight transport by road
	493	4930	Transport via pipeline
Division 50			Water transport
	501		Sea and coastal water transport
		5011	Sea and coastal passenger water transport
		5012	Sea and coastal freight water transport
	502		Inland water transport
		5021	Inland passenger water transport
		5022	Inland freight water transport
Division 51			Air transport
	511	5110	Passenger air transport
	512	5120	Freight air transport

Division 52		Warehousing and support activities for transportation	
	521	5210	Warehousing and storage
	522		Support activities for transportation
		5221	Service activities incidental to land transportation
		5222	Service activities incidental to water transportation
		5223	Service activities incidental to air transportation
		5224	Cargo handling
		5229	Other transportation support activities
Division 53		Postal and courier activities	
	531	5310	Postal activities
	532	5320	Courier activities

Section I

Accommodation and food service activities

Division	Group	Class	Description
Division 55		Accommodation	
	551	5510	Short-term accommodation activities
	552	5520	Camping grounds, recreational vehicle parks, and trailer parks
	559	5590	Other accommodation
Division 56		Food and beverage service activities	
	561	5610	Restaurants and mobile food service activities
	562		Event catering and other food service activities
		5621	Event catering
		5629	Other food service activities
	563	5630	Beverage-serving activities

Section J

Information and communication

Division	Group	Class	Description
Division 58			Publishing activities
	581		Publishing of books, periodicals, and other publishing activities
		5811	Book publishing
		5812	Publishing of directories and mailing lists
		5813	Publishing of newspapers, journals, and periodicals
		5819	Other publishing activities
	582	5820	Software publishing
Division 59			Motion picture, video and television programme production; sound recording and music publishing activities
	591		Motion picture, video and television programme activities
		5911	Motion picture, video and television programme production activities
		5912	Motion picture, video and television programme post-production activities
		5913	Motion picture, video and television programme distribution activities
		5914	Motion picture projection activities
	592	5920	Sound recording and music publishing activities
	601	6010	Radio broadcasting
	602	6020	Television programming and broadcasting activities
Division 61			Telecommunications
	611	6110	Wired telecommunications activities
	612	6120	Wireless telecommunications activities
	613	6130	Satellite telecommunications activities
	619	6190	Other telecommunications activities
Division 62			Computer programming, consultancy, and related activities
		6201	Computer programming activities
		6202	Computer consultancy and computer facilities management activities
		6209	Other information technology and computer service activities
Division 63			Information service activities
	631		Data processing, hosting, and related activities; web portals
		6311	Data processing, hosting, and related activities
		6312	Web portals
	639		Other information service activities
		6391	News agency activities
		6399	Other information service activities n.e.c.

Section K

Financial and insurance activities

Division	Group	Class	Description
Division 64			Financial service activities, except insurance and pension funding
	641		Monetary intermediation
		6411	Central banking
		6419	Other monetary intermediation
	642	6420	Activities of holding companies
	643	6430	Trusts, funds, and similar financial entities
	649		Other financial service activities, except insurance and pension funding activities
		6491	Financial leasing
		6492	Other credit granting
		6499	Other financial service activities, except insurance and pension funding activities, n.e.c.
Division 65			Insurance, reinsurance, and pension funding, except compulsory social security
	651		Insurance
		6511	Life insurance
		6512	Non-life insurance
	652	6520	Reinsurance
	653	6530	Pension funding
	661		Activities auxiliary to financial service activities, except insurance and pension funding
		6611	Administration of financial markets
		6612	Security and commodity contracts brokerage
		6619	Other activities auxiliary to financial service activities
	662		Activities auxiliary to insurance and pension funding
		6621	Risk and damage evaluation
		6622	Activities of insurance agents and brokers
		6629	Other activities auxiliary to insurance and pension funding
	663	6630	Fund management activities

Section L

Real estate activities

Division	Group	Class	Description
Division 68			Real estate activities
	681	6810	Real estate activities with own or leased property
	682	6820	Real estate activities on a fee or contract basis

Section M

Professional, scientific, and technical activities

Division	Group	Class	Description
Division 69			Legal and accounting activities
	691	6910	Legal activities
	692	6920	Accounting, bookkeeping and auditing activities; tax consultancy
Division 70			Activities of head offices; management consultancy activities
	701	7010	Activities of head offices
	702	7020	Management consultancy activities
Division 71			Architectural and engineering activities; technical testing and analysis
	711	7110	Architectural and engineering activities and related technical consultancy
	712	7120	Technical testing and analysis
Division 72			Scientific research and development
	721	7210	Research and experimental development on natural sciences and engineering
	722	7220	Research and experimental development on social sciences and humanities
Division 73			Advertising and market research
	731	7310	Advertising
	732	7320	Market research and public opinion polling
Division 74			Other professional, scientific, and technical activities
	741	7410	Specialised design activities
	742	7420	Photographic activities
	749	7490	Other professional, scientific, and technical activities n.e.c.

Section N

Administrative and support service activities

Division	Group	Class	Description
Division 77			Rental and leasing activities
	771	7710	Renting and leasing of motor vehicles
	772		Renting and leasing of personal and household goods
		7721	Renting and leasing of recreational and sports goods
		7722	Renting of videotapes and disks
		7729	Renting and leasing of other personal and household goods
	773	7730	Renting and leasing of other machinery, equipment, and tangible goods
	774	7740	Leasing of intellectual property and similar products, except copyrighted works
Division 78			Employment activities
	781	7810	Activities of employment placement agencies
	782	7820	Temporary employment agency activities
	783	7830	Other human resources provision
Division 79			Travel agency, tour operator, reservation service, and related activities
	791		Travel agency and tour operator activities
		7911	Travel agency activities
		7912	Tour operator activities
	799	7990	Other reservation service and related activities
Division 80			Security and investigation activities
	801	8010	Private security activities
	802	8020	Security systems service activities
	803	8030	Investigation activities
Division 81			Services to buildings and landscape activities
	811	8110	Combined facilities support activities
	812		Cleaning activities
		8121	General cleaning of buildings
		8129	Other building and industrial cleaning activities
	813	8130	Landscape care and maintenance service activities
Division 82			Office administrative, office support, and other business support activities
	821		Office administrative and support activities
		8211	Combined office administrative service activities
		8219	Photocopying, document preparation and other specialised office support activities
	822	8220	Activities of call centres
	823	8230	Organisation of conventions and trade shows
	829		Business support service activities n.e.c.
		8291	Activities of collection agencies and credit bureaus
		8292	Packaging activities
		8299	Other business support service activities n.e.c.

Section O

Public administration and defence; compulsory social security

Division	Group	Class	Description
Division 84			Public administration and defence; compulsory social security
	841		Administration of the State and the economic and social policies of the community
		8411	General public administration activities
		8412	Regulation of the activities of providing health care, education, cultural services and other social services, excluding social security
		8413	Regulation of and contribution to a more efficient operation of businesses
	842		Provision of services to the community as a whole
		8421	Foreign affairs
		8422	Defence activities
		8423	Public order and safety activities
	843	8430	Compulsory social security activities

Section P

Education

Division	Group	Class	Description
Division 85			Education
	851	8510	Pre-primary and primary education
	852		Secondary education
		8521	General secondary education
		8522	Technical and vocational secondary education
	853	8530	Higher education
	854		Other education
		8541	Sports and recreation education
		8542	Cultural education
		8549	Other education n.e.c.
	855	8550	Educational support activities

Section Q

Human health and social work activities

Division	Group	Class	Description
Division 86			Human health activities
	861	8610	Hospital activities
	862	8620	Medical and dental practice activities
	869	8690	Other human health activities

Division	Group	Class	Description
Division 87			Residential care activities
	871	8710	Residential nursing care facilities
	872	8720	Residential care activities for mental retardation, mental health, and substance abuse
	873	8730	Residential care activities for the elderly and disabled
	879	8790	Other residential care activities
Division 88			Social work activities without accommodation
	881	8810	Social work activities without accommodation for the elderly and disabled
	889	8890	Other social work activities without accommodation

Section R

Arts, entertainment, and recreation

Division	Group	Class	Description
Division 90			Creative, arts, and entertainment activities
	900	9000	Creative, arts, and entertainment activities
Division 91			Libraries, archives, museums, and other cultural activities
		9101	Library and archives activities
		9102	Museums activities and operation of historical sites and buildings
		9103	Botanical and zoological gardens and nature reserves activities
Division 92			Gambling and betting activities
	920	9200	Gambling and betting activities
Division 93			Sports activities and amusement and recreation activities
	931		Sports activities
		9311	Operation of sports facilities
		9312	Activities of sports clubs
		9319	Other sports activities
	932		Other amusement and recreation activities
		9321	Activities of amusement parks and theme parks
		9329	Other amusement and recreation activities n.e.c.

Section S

Other service activities

Division	Group	Class	Description
Division 94			Activities of membership organisations
	941		Activities of business, employers, and professional membership organisations
		9411	Activities of business and employer membership organisations
		9412	Activities of professional membership organisations
	942	9420	Activities of trade unions
	949		Activities of other membership organisations
		9491	Activities of religious organisations
		9492	Activities of political organisations
		9499	Activities of other membership organisations n.e.c.
Division 95			Repair of computers and personal and household goods
	951		Repair of computers and communication equipment
		9511	Repair of computers and peripheral equipment
		9512	Repair of communication equipment
	952		Repair of personal and household goods
		9521	Repair of consumer electronics
		9522	Repair of household appliances and home and garden equipment
		9523	Repair of footwear and leather goods
		9524	Repair of furniture and home furnishings
		9529	Repair of other personal and household goods
Division 96			Other personal service activities
		9601	Washing and (dry-) cleaning of textile and fur products
		9602	Hairdressing and other beauty treatment
		9603	Funeral and related activities
		9609	Other personal service activities n.e.c.

Section T

Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use

Division	Group	Class	Description
Division 97			Activities of households as employers of domestic personnel
	970	9700	Activities of households as employers of domestic personnel
Division 98			Undifferentiated goods- and services-producing activities of private households for own use
	981	9810	Undifferentiated goods-producing activities of private households for own use
	982	9820	Undifferentiated service-producing activities of private households for own use

Section U

Activities of extraterritorial organisations and bodies

Division	Group	Class	Description
Division 99			Activities of extraterritorial organisations and bodies
	990	9900	Activities of extraterritorial organisations and bodies

6. Sample of filling questionnaires

6.1 Coal supply

Below are dummy, not actual, data for Company A as an example in filling out questionnaires.

Table 4.2 Coal Supply

Company name: Company A Date: 31 March 2020						
Annual Coal Supply Survey - Unit in Tonnes Calendar Year 2019 (January 2019 to December 2019)						
		Anthracite	Other Bituminous Coal	Sub-bituminous Coal	Lignite	Total
		Tonnes	Tonnes	Tonnes	Tonnes	Tonnes
Opening stock	A	1.000	0	0	20.000	21.000
Indigenous production (C+D)	B	170.000	0	0	460.000	630.000
Surface	C	120.000	0	0	400.000	520.000
Underground	D	50.000	0	0	60.000	110.000
Purchases of coal from other producers/from other sources	E					
Imports	F	0	0	0	30.000	30.000
Exports	G	55.000	0	0	200.000	255.000
International marine bunker	H					
Losses and own use in production	I	1.000	0	0	2.000	3.000
Total domestic consumption	J	110.000	0	0	300.000	410.000
Calculated closing stock =A+B+E+F-G-H-I-J		5.000	0	0	8.000	13.000
Actual closing stock	K	4.000	0	0	6.000	10.000
Specify heating value (kcal/kg)						
					4.165	
					3.957	

Notes: The cells highlighted in pink are linked cells from the 'Imports, Exports and Coal Consumption' tabs.

The cells highlighted in **darblue** are not applicable to the Lao PDR.

1) Anthracite

- Opening stock = 1,000 tonnes; in the questionnaire 'Coal Supply tab', enter 1,000 tonnes in the row 'Opening stock, column Anthracite'.
- Indigenous production is automatically calculated by the formula = Surface + Underground
 - Anthracite produced in surface = 120,000 tonnes; enter 120,000 tonnes in the row 'Surface, column Anthracite'.

- Anthracite produced in underground = 50,000 tonnes; enter 50,000 tonnes in the row 'Underground, column Anthracite'.
- Purchases of coal from other producers/from other sources = 0 tonnes (no purchase); enter 0 tonnes in the row 'Purchases of coal from other producers/from other sources, column Anthracite'.
- Imports – Do not enter data in this row. The cells highlighted in pink are linked to and automatically calculated from the 'Import by Origin' tab; i.e. total anthracite imported. Company A must enter data in the 'Import by Origin' tab to fill the 'Import' row. In this example, Company A has no imported anthracite, i.e. import = 0 tonnes.
- Exports – Do not enter data in this row. The cells highlighted in pink are linked to and calculated from the 'Export by Destination' tab; i.e. total anthracite exported. Company A must enter data in the 'Export by Destination' tab to fill the 'Export' row. In this example, Company A exported 55,000 tonnes of anthracite, i.e. export = 55,000 tonnes.
- International marine bunker = 0 tonnes; enter 0 tonnes in the row 'International marine bunker, column Anthracite'.
- Losses and own use in production = 1,000 tonnes; enter 1,000 tonnes in the row 'Losses and own use in production, column Anthracite'.
- Total domestic consumption – Do not enter data in this row. The cells highlighted in pink are linked to and calculated from 'Coal Consumption' tab, i.e. total anthracite consumption. Company A must enter data in the 'Coal Consumption' tab to fill the 'Total domestic consumption' row. In this example, Company A's total consumption of anthracite is 110,000 tonnes.
- Calculated closing stock – Do not enter data in this row which is automatically calculated by the formula = Opening stock + Indigenous + Purchases of coal from other producers/from other sources + Imports – Exports – International marine bunkers – Losses and own use – Total domestic consumption.
In this example, Company A's total 'Calculated closing stock' of anthracite is 5,000 tonnes.
- Actual closing stock = 4,000 tonnes; enter 4,000 tonnes in the row 'Actual closing stock, column Anthracite'.

2) Other bituminous coal

- In this example, Company A does not produce other bituminous coal; enter zero in all rows. If data is available in the future, use the same method for 'Anthracite' to fill all coal supply information for 'Other Bituminous Coal'.

3) Sub-bituminous coal

- In this example, Company A does not produce sub-bituminous coal; enter zero in all rows. If data is available in the future, use the same method for 'Anthracite' to fill all coal supply information for 'Sub-bituminous coal'.

4) Lignite

- Opening stock = 20,000 tonnes; in the questionnaire's 'Coal Supply tab', enter 20,000 tonnes

in the row 'Opening stock, column Lignite'.

- Indigenous production – Do not enter data in this row, which is automatically calculated by the formula: Surface + Underground
 - Lignite produced in surface = 400,000 tonnes; enter '400,000 tonnes' in the row 'Surface, column Lignite'.
 - Lignite produced in underground = 60,000 tonnes; enter '60,000 tonnes' in the row 'Underground, column Lignite'.
- Purchases of coal from other producers/from other sources = 0 tonnes (no purchase); enter '0 tonnes' in the row 'Purchases of coal from other producers/from other sources, column Lignite'.
- Imports – Do not enter data in this row, which is automatically calculated from the 'Import by Origin' tab, i.e. total lignite imported. Company A must enter data in the 'Import by Origin' tab to fill the 'Import' row. In this example, Company A imported 30,000 tonnes of lignite, i.e. import = 30,000 tonnes.
- Exports – Do not enter data in this row, which is automatically calculated from the 'Export by Destination' tab, i.e. total lignite exported. Company A must enter data in the 'Export by Destination' tab to fill the 'Export' row. In this example, Company A exported 200,000 tonnes of lignite i.e. export = 200,000 tonnes.
- International marine bunker = 0 tonnes; enter '0 tonne' in the row 'International marine bunker, column Lignite'.
- Losses and own use in production = 2,000 tonnes; enter 2,000 tonnes in the row 'Losses and own use in production, column Lignite'.
- Total domestic consumption – Do not enter data in this row, which is automatically calculated from the 'Coal Consumption' tab, i.e. total lignite consumption.
Company A must enter data in the 'Coal Consumption' tab to fill the 'Total domestic consumption' row. In this example, Company A's total consumption of lignite is 300,000 tonnes.
- Calculated closing stock – Do not enter data in this row, which is automatically calculated by the formula: Opening stock + Indigenous + Purchases of coal from other producers/from other sources + Imports – Exports – International marine bunkers – Losses and own use – Total domestic consumption
In this example, Company A's total 'Calculated closing stock' of lignite is 8,000 tonnes.
- Actual closing stock = 6,000 tonnes; enter '6,000 tonnes' in the row 'Actual closing stock, column Lignite'.

5) Total

- Total opening stock (indigenous production, purchases of coal from other producers/from other sources, imports, etc.) for coal is automatically calculated by the formula: Anthracite + Other Bituminous Coal + Sub-bituminous Coal + Lignite

6) Result of filling the 'Coal Supply' tab of the questionnaire

Table 4.2 illustrates the filled questionnaire using the above information and instructions.

6.2 Coal consumption

Below are dummy, not actual, data for Company A as an example in filling out questionnaires.

Table 4.3 Coal Consumption

Company name: Company A						
Date: 31 March 2020						
Annual Coal Consumption by Sector - Unit in Tonnes						
Calendar Year 2019 (January 2019 to December 2019)						
	ISIS Revision 4, 2008	Anthracite	Other Bituminous Coal	Sub-bituminous Coal	Lignite	Total
		Tonnes	Tonnes	Tonnes	Tonnes	Tonnes
Energy transformation		0	0	0	195.000	195.000
Electricity generation	n.a.				195.000	195.000
Cogeneration	n.a.					
Other transformation	n.a.					
Losses and own use in production or transformation	n.a.					
Agriculture		0	0	0	20.000	20.000
Agriculture/Forestry	Divisions 01 & 02				20.000	20.000
Fishing	Division 03					
Industrial		110.000	0	0	75.000	185.000
Iron and steel	Group 241 & Class 2431					0
Chemical and petrochemical	Divisions 20 & 21					0
Non-ferrous metals	Group 242 & Class 2432					0
Non-metallic minerals	Division 23	110.000			75.000	185.000
Transport equipment	Divisions 29 & 30					0
Machinery	Divisions 25, 26, 27 & 28					0
Mining and quarrying	Divisions 07, 08 & 099					0
Food, beverages, and tobacco	Divisions 10, 11 & 12					0
Paper, pulp, and printing	Divisions 17 & 18					0
Wood and wood products	Division 16					0
Construction	Divisions 41, 42 & 43					0
Textiles and leather	Divisions 13, 14 & 15					0
Not elsewhere specified (Industry)	Divisions 22, 31 & 32					0
Transport	Divisions 49, 50 & 51	0	0	0	0	0
Rail						
Domestic navigation						
Not-specified (Transport)						
Commercial and public services	Divisions 33 to 39, 45 to 47, 52 to 53, 55 to 56, 58 to 66, 68 to 96, & 99					
Residential	Divisions 97 & 98				10.000	10.000
Other - Not elsewhere specified	Not included elsewhere above					0
Total Consumption		110.000	0	0	300.000	410.000

Notes:

ISIS: International Standard Industries Classification of All Economic Activities (ISIC) Revision 4, Department of Economic and Social Affairs, Statistics Division, United Nations New York, 2008.

n.a. : not available

The cells highlighted in dark blue are not applicable for the Lao PDR.

1) Anthracite

- Energy transformation – Do not enter data in this row, which is automatically calculated by the formula: Electricity generation + Cogeneration + Other transformation + Losses and own use in production or transformation
 - Electricity generation – In this example, Company A has not sold anthracite; thus, ‘Electricity generation’ = 0 tonnes.
 - Cogeneration – Company A has not sold anthracite; thus, ‘Cogeneration’ = 0 tonnes.
 - Other transformation – Company A has not sold anthracite for ‘Other transformation’, i.e. Other transformation = 0 tonne.
 - Losses and own use in production or transformation – Company A has not reported anthracite for ‘Losses and own use in production or transformation’, i.e. Losses and own use in production or transformation = 0 tonne.
- Agriculture – Do not enter data in this row, which is automatically calculated by the formula: Agriculture and Forestry + Fishing.
 - Agriculture and Forestry – In this example, Company A has not sold anthracite for ‘Agriculture and Forestry’, i.e. Agriculture and Forestry = 0 tonne. Enter zero or leave the cell blank.
 - Fishing – Company A has not sold anthracite for ‘Fishing’, i.e. Fishing = 0 tonne. Enter zero or leave the cell blank.
- **Industrial** – Do not enter data in this row, which is automatically calculated by the following formula:

Iron and steel + Chemical and petrochemical + Non-ferrous metals + Non-metallic minerals + Transport equipment + Machinery + Mining and quarrying + Food, beverages, and tobacco + Paper, pulp, and printing + Wood and wood products + Construction + Textiles and leather + Not elsewhere specified (Industry)

 - Non-metallic minerals – In this example, Company A has sold anthracite for the Non-metallic minerals group ‘Industry sector’, i.e. Non-metallic minerals = 110,000 tonnes.
 - Other industrial groups – Company A has not sold anthracite for other industrial groups; thus, enter zeros or leave the cells blank.
- Commercial and public services, transport, and residential sectors – In this example, Company A has not sold anthracite for commercial and public services, transport, and residential sectors. Enter zeros or leave the cells blank.

2) Other bituminous coal

- In this example, Company A does not produce 'Other Bituminous Coal'; enter zero in all rows. If data will be available, use the same method for 'Anthracite' to fill all coal consumption information for 'Other Bituminous Coal'.

3) Sub-bituminous coal

- In this example, Company A does not produce 'Sub-bituminous Coal'; enter zero in all rows. If data will be available, use the same method for 'Anthracite' to fill all coal consumption information for 'Sub-bituminous Coal'.

4) Lignite

- Energy transformation – Do not enter data in this row, which is automatically calculated by the formula: Electricity generation + Cogeneration + Other transformation + Losses and own use in production or transformation
 - Electricity generation – In this example, Company A has sold 195,000 tonnes of lignite to electricity companies; enter '195,000 tonnes' for 'Electricity generation'.
 - Cogeneration – Company A has not sold lignite for 'Cogeneration'; thus, Cogeneration = 0 tonne.
 - Other transformation – Company A has not sold lignite for 'Other transformation', i.e. Other transformation = 0 tonne.
 - Losses and own use in production or transformation – Company A has not reported lignite for 'Losses and own use in production or transformation', i.e. Losses and own use in production or transformation = 0 tonne.
- Agriculture – Do not enter data in this row, which is automatically calculated by the formula: Agriculture and Forestry + Fishing
 - Agriculture and Forestry – In this example, Company A sold 20,000 tonnes of lignite to the Agriculture and Forestry sector, i.e. Agriculture and Forestry = 20,000 tonnes. Enter '20,000 tonnes'.
 - Fishing – Company A has not sold lignite for 'Fishing'; i.e. Fishing = 0 tonnes. Enter zero or leave the cell blank.
- Industrial – Do not enter data in this row, which is automatically calculated by the following formula:
Iron and steel + Chemical and petrochemical + Non-ferrous metals + Non-metallic minerals + Transport equipment + Machinery + Mining and quarrying + Food, beverages, and tobacco + Paper, pulp, and printing + Wood and wood products + Construction + Textiles and leather + Not elsewhere specified (Industry)

- Non-metallic minerals – In this example, Company A has sold lignite for the Non-metallic minerals group – ‘Industrial sector’, i.e. Non-metallic minerals = 75,000 tonnes. Enter ‘75,000 tonnes’.
- Other industrial groups – Company A has not sold anthracite for other industrial groups, commercial and public services, and transport sector. Enter zero or leave the cell blank.
- Residential – In this example, Company A has sold lignite to the ‘residential sector’, i.e. residential = 10,000 tonnes. Enter ‘10,000 tonnes’.
- Other – Not elsewhere specified – In this example, Company A has not sold lignite for ‘Other – Not elsewhere specified’, i.e. Other – Not elsewhere specified = 0 tonnes. Enter ‘0 tonnes’ or leave the cell blank.
- Total consumption – Please do not enter data in this row, which is automatically calculated by the formula: Energy Transformation + Agriculture + Industrial + Transport + Commercial and Public Services + Residential + ‘Other - Not elsewhere specified’.

5) Total – Do not enter data in this row, which is automatically calculated by the formula: Anthracite + Other Bituminous Coal + Sub-bituminous Coal + Lignite. This is the total coal consumption for all types of coal for Energy Transformation, Agriculture, Industrial, Transport, Commercial and Public Services, Residential and Other – Not elsewhere specified.

6) Result of filling the ‘Coal Consumption’ tab of the questionnaire

Table 4.3 illustrates the filled questionnaire using the above information and instructions.

6.3. Imports by origin

If Company A imported coal, enter the import data in this tab to show the total import in the ‘Coal Supply’ tab.

Please note that dummy – and not actual – data is used in the example.

Table 4.4 Imports by Origin

Company name: Company A Date: 31 March 2020						
Imports by Origin Calendar Year 2019 (January 2019 to December 2019)						
		Primary Fuels				Total
		Anthracite	Other Bituminous Coal	Sub-bituminous Coal	Lignite	
		Tonnes	Tonnes	Tonnes	Tonnes	
APEC Economies	1	0	0	0	30.000	30.000
Australia	2					0
Brunei Darussalam	3					0
Canada	4					0
Chile	5					0
China	6				30.000	30.000
Hong Kong, China	7					0
Indonesia	8					0
Japan	9					0
Republic of Korea	10					0
Malaysia	11					0
Mexico	12					0
New Zealand	13					0
Papua New Guinea	14					0
Peru	15					0
Philippines	16					0
Russian Federation	17					0
Singapore	18					0
Chinese Taipei	19					0
Thailand	20					0
United States of America	21					0
Viet Nam	22					0
ASEAN (non-APEC) Economies	23	0	0	0	0	0
Myanmar	24					0
Lao PDR	25					0
Cambodia	26					0
Rest of the World	27	0	0	0	0	0
Other Asia and Pacific	28					0
Other Americas	29					0
Europe & Former Soviet Union (excluding Russia)	30					0
Middle East	31					0
Africa	32					0
Unknown	33					0
Total	34	0	0	0	30.000	30.000

Note: Do not enter data in the cells highlighted in yellow. They are automatically calculated for the total coal imported from a group of economies globally.

1) Anthracite

- In this example, Company A has not imported 'Anthracite'; enter zero in all rows or leave the cell blank. If data will be available, enter the import data for 'Anthracite'.

2) Other bituminous coal

- In this example, Company A has not imported 'Other bituminous coal'; enter zero in all rows or leave the cell blank. If data will be available, enter the import data for 'Other bituminous coal'.

3) Sub-bituminous coal

- In this example, Company A has not imported 'Sub-bituminous coal'; enter zero in all rows or leave the cell blank. If data will be available, please enter the import data for 'Sub-bituminous coal'.

4) Lignite

- Import from China – Company A imported 30,000 tonnes of lignite from China; enter '30,000 tonnes' in the row of China.

5) Total – Do not enter data in this row, which is automatically calculated by the formula: Anthracite + Other Bituminous Coal + Sub-bituminous Coal + Lignite. This is the total coal imports for all types of coal from a specific country.

6) APEC, ASEAN (non-APEC), Rest of the World, and Unknown economies – Do not enter data in the cells highlighted in yellow. They are automatically calculated for the total coal imported from a group of economies globally.

Where no origin can be reported or where the country is not specified in the questionnaire, the category 'Unknown' may be used.

7) Result of filling the 'Import' tab of the questionnaire

Table 4.4 illustrates the filled questionnaire using the above information and instructions.

6.4. Exports by destination

If Company A exported coal, enter the export data in this tab to show the total export in the 'Coal Supply' tab.

Note that dummy – and not actual – data was used.

Table 4.5 Exports by Destination

Date: 31 March 2020

		Exports by Destination Calendar Year 2019 (January 2019 to December 2019)				
		Primary Fuels				Total
		Anthracite	Other Bituminous Coal	Sub-bituminous Coal	Lignite	
		Tonnes	Tonnes	Tonnes	Tonnes	Tonnes
APEC Economies	35	55.000	0	0	120.000	175.000
Australia	36					0
Brunei Darussalam	37					0
Canada	38					0
Chile	39					0
China	40					0
Hong Kong, China	41					0
Indonesia	42					0
Japan	43					0
Republic of Korea	44					0
Malaysia	45					0
Mexico	46					0
New Zealand	47					0
Papua New Guinea	48					0
Peru	49					0
Philippines	50					0
Russian Federation	51					0
Singapore	52					0
Chinese Taipei	53					0
Thailand	54	55.000			120.000	175.000
United States of America	55					0
Viet Nam	56					0
ASEAN (non-APEC) Economies	57	0	0	0	80.000	80.000
Myanmar	58					0
Lao PDR	59					0
Cambodia	60				80.000	80.000
Rest of the World	61	0	0	0	0	0
Other Asia and Pacific	62					0
Other Americas	63					0
Europe & Former Soviet Union (excluding Russia)	64					0
Middle East	65					0
Africa	66					0
Unknown	67					0
Total	68	55.000	0	0	200.000	255.000

Note: Do not enter data in the cells highlighted in yellow. They are automatically calculated for the total coal exported to a group of economies globally.

1) Anthracite

- Export to Thailand – Company A exported anthracite to Thailand = 55,000 tonnes; enter ‘55,000 tonnes’ in the row ‘Thailand’.

2) Other bituminous coal

- In this example, Company A has not exported ‘Other bituminous coal’; enter zero in all rows of the ‘Exports by Destination’ tab or leave the cells blank. If data will be available, enter the export data for ‘Other bituminous coal’.

3) Sub-bituminous coal

- In this example, Company A has not exported ‘Sub-bituminous coal’; enter zero in all rows of the ‘Exports by Destination’ tab or leave the cells blank. If data will be available, enter the export data for ‘Sub-bituminous coal’.

4) Lignite

- Export to Thailand – Company A exported 120,000 tonnes of lignite to Thailand; enter ‘120,000 tonnes’ in the row ‘Thailand’.

- Export to Cambodia – Company A exported 80,000 tonnes of lignite to Cambodia; enter ‘80,000 tonnes’ in the row ‘Cambodia’.

5) Total – Do not enter data in this row, which is automatically calculated by the formula: Anthracite + Other Bituminous Coal + Sub-bituminous Coal + Lignite. This is the total export for all types of coal from a specific country.

6) APEC, ASEAN (non-APEC), Rest of the World, and Unknown economies – Do not enter data in the cells highlighted in yellow. They are automatically calculated for the total coal exported to a group of economies or regions globally.

Where no destination can be reported or where the country is not specified in the questionnaire, the category ‘Unknown’ may be used.

7) Result of filling the ‘Export’ tab of the questionnaire

Table 4.5 illustrates the filled questionnaire using the above information and instructions on filling the ‘Export’ tab.

References

International Energy Agency (IEA) (2005), *Energy Statistics Manual*. Paris: IEA.

United Nations Department of Economic and Social Affairs (UN-DESA) (2008), *International Standard Industries Classification of All Economic Activities (ISIC), Revision 4*. New York: UN.