

- The Importance of Coal
- IEA Annual Coal Questionnaire
- Data Consistency Checks

■ Uses of the Data

■ Coal provides a large share of the world energy supply

■ Potential to contribute even more

■ Must address environmental challenges

1973

Combustible


6,111 Mtoe

2009


## TPES doubled and coal more than doubled



## WORLD FUEL SHARES OF ELECTRICITY

1973


6115 TWh

2009


20055 TWh

Electricity generation more than triple, with coal holding its own



■ Ash, volatile matter, sulphur, nitrogen, trace elements

- Blended to produce different performance characteristics
- Soft coking coal and steam coal prices have been related


## PRIMARY AND DERIVED COAL AND PEAT PRODUCTS

| PRIMARY FUELS | Anthracite | SOLID FOSSIL FUELS |
| :---: | :---: | :---: |
|  | Coking Coal |  |
|  | Other Bituminous Coal |  |
|  | Sub-bituminous Coal |  |
|  | Lignite/Brown Coal |  |
|  | Peat |  |
| DERIVED <br> and MANUFACTURED PRODUCTS | Patent Fuels |  |
|  | Coke Oven Coke |  |
|  | Gas Coke |  |
|  | Coal Tar |  |
|  | BKB/Peat Briquettes |  |
|  | Gas Works Gas | MANUFACTURED GASES |
|  | Coke Oven Gas |  |
|  | Blast Furnace Gas |  |
|  | Oxygen Steel Furnace Gas |  |

- Hard Coal
- Gross calorific value greater than $\mathbf{2 3 , 8 6 5} \mathbf{~ k J} / \mathbf{k g}$
- Mean random reflectance of vitrinite of at least 0.6
- Anthracite
- Bituminous
- Coking coal
- Sub-Bituminous Coal
- Gross calorific value 17,435-23,865 kJ/kg
- Mean random reflectance of vitrinite less than 0.6
- Lignite/Brown Coal
- Gross calorific value less than $17,435 \mathrm{~kJ} / \mathrm{kg}$
- Mean random reflectance of vitrinite less than 0.6
- Anthracite
- Gross calorific value is greater than $\mathbf{2 3 , 8 6 5} \mathbf{k J} / \mathbf{k g}$
- Less than 10\% volatile matter
- High carbon content (about 90\% fixed carbon)
- Mean random reflectance of vitrinite at least 2.0\%
- Non-agglomerating
- Coking Coal
- Bituminous coal that allows its use to produce coke
- Gross calorific value is greater than $23,865 \mathrm{~kJ} / \mathbf{k g}$
- Mean random reflectance of vitrinite of at least 0.6
- Other Bituminous Coal
- Coal used for steam raising purposes
- Higher volatile matter (more than 10\%)
- Lower carbon content (less than 90\% fixed carbon)
- Gross calorific value is greater than $23,865 \mathrm{~kJ} / \mathrm{kg}$
- Mean random reflectance of vitrinite of at least $\mathbf{0 . 6}$


## UPGRADED COALS

- Patent Fuels
- Manufactured from hard coal fines
- With the addition of a binding agent
- Patent fuel produced may be higher than the amount of coal used
- BKB (Brown Coal Briquettes)
- A composite fuel manufactured from lignite/brown coal
- Produced under high pressure without a binding agent
- Includes peat briquettes, dried lignite fines and dust


## UPGRADED COALS

- Coal Tar
- Liquid result of distillation of bituminous coal during the coke oven process or of the low-temperature carbonisation of brown coal
- Coal tar can be further distilled into different organic products (as benzene, toluene, naphthalene), which normally would be reported as a feedstock to the petrochemical industry
- A solid product
- From carbonized coal, principally coking coal
- At high temperature
- Low in moisture and volatile matter
- Used mainly in the iron and steel industry

■ Requires inputs of coking coal to coke ovens in the Transformation sector

- Inputs of other fuels may also be reported on the other questionnaires
- Gas Work Gas
- Produced in plants whose main purpose is to manufacture, transport and distribute gas.
- Blast Furnace Gas
- Produced during combustion of coke in blast furnaces in iron and steel industry
- Oxygen Steel Furnace Gas
- By-product of the production of steel in an oxygen furnace
- Also known as converter gas, LD gas or BOS gas


## TRANSFORMATION VS. ENERGY SECTORS

- Transformation Sector
- Fuel used for the primary or secondary conversion of energy
- Transformed to make derived energy products
- Energy Sector
- Fuels consumed by the energy industry to support
- fuel extraction
- plant operations of transformation activities


## TYPES OF ELECTRIC AND HEAT PLANTS

|  | Electricity <br> Only | CHP | Heat Only |
| :--- | :--- | :--- | :--- |
| Main Activity <br> Producer |  | Report all electricity <br> and heat produced <br> and all fuel used | Report all heat <br> produced and all <br> fuel used |
| Autoproducer | Report all <br> production <br> and all fuel <br> used | Report all electricity <br> produced and heat <br> sold with <br> corresponding fuel <br> used | Report heat sold <br> and corresponding <br> fuel used |

## STRUCTURE OF THE COAL QUESTIONNAIRE

- Table 1. Supply, Transformation, Energy and Final Consumption

■ Table 2. Imports by Origin
■ Table 3. Exports by Destination

- Table 4. Calorific Values


## Domestic Supply

Production
+Import

- Export
- International Marine
Bunkers +Stock Changes


## Gross Consumption

Transformation Sector (14 subsectors)
+Energy Sector (10 sub-sectors)

- Distribution Losses
+Final Consumption
+Industry Sector (13 sub-
sectors)
+Transport (3 sub-sectors)
+Other Sectors (5 sub-
sectors)
+Non Energy Uses

Domestic Supply - Gross Consumption = Statistical Difference (Inland Consumption)


## TABLE 1. ENERGY SECTOR

 AND FINAL CONSUMPTION| SUPPLY AND TRANSFORMATION SECTOR |  | Coking Coal | Other Bituminous Coal | Subbituminous Coal |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $10^{2} \mathrm{t}$ | $10^{2} \mathrm{t}$ | $10^{2} \mathrm{t}$ |
|  |  | B | C | D |
| ENERGY SECTOR AND FINAL CONSUMPTION |  |  |  |  |
| Energy Sector | 29 | 0 | 0 | 0 |
| Own Use in Electricity, CHP and Heat Plants | 30 | 0 | 0 | 0 |
| Coal Mines | 31 | 0 | 0 | 0 |
| Patent Fuel Plants (Energy) | 32 | 0 | 0 | 0 |
| Coke Ovens (Energy) | 33 | 0 | 0 | 0 |
| BKB Plants (Energy) | 34 | 0 | 0 | 0 |
| Gas Works (Energy) | 35 | 0 | 0 | 0 |
| Blast Furnaces (Energy) | 36 | 0 | 0 | 0 |
| Petroleum Refineries | 37 | 0 | 0 | 0 |
| Coal Liquefaction Plants (Energy) | 38 | 0 | 0 | 0 |
| Non-specified (Energy) | 39 | 0 | 0 | 0 |
|  |  |  |  |  |
| Distribution Losses | 40 | 0 | 0 | 0 |
|  |  |  |  |  |
| Total Final Consumption | 41 | 0 | 623 | 0 |
|  |  |  |  |  |
| Total Non-Energy Use | 42 | 0 | 0 | 0 |
| Non-Energy Use Industry/Transformation/Energy | 43 | 0 | 0 | 0 |
| Of which: Non-Energy Use- | 44 | 0 | 0 | 0 |
| Non-Energy Use in Transport | 45 | 0 | 0 | 0 |
| Non-Energy Use in Other Sectors | 46 | 0 | 0 | 0 |



## COKE OVEN DATA

|  |  | Coking Coal | Other <br> Bituminous <br> Coal | Coke Oven Coke | Coal Tar | Gas Vorks Gas | $\begin{aligned} & \text { Coke } \\ & \text { Oven } \\ & \text { Gas } \end{aligned}$ | $\begin{aligned} & \text { Blast } \\ & \text { Furnace } \\ & \text { Gas } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SUPPLY AND TRANSFORMATION SECTOR |  | 10** | 10\% | 10\% | 10\% | $\begin{gathered} \text { TJ } \\ \text { faross) } \end{gathered}$ | $\underset{\text { Tgross) }}{\text { TJ }}$ | $\begin{gathered} \text { TJ } \\ \text { faross) } \end{gathered}$ |
|  |  | B | c | 497 | 18 | L 1.185 | $4,568$ | N |
| Indigenous Production | 1 | 0 | 667 |  |  |  |  | 5,230 |
| Onluergrounuriouucturn | 2 | 0 | 667 |  |  |  |  |  |
| Surface Production | 3 | 0 | 0 |  |  |  | $\longrightarrow$ |  |
| From Other Sources | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Imports (Balance) | 5 | 718 | 6,384 | 0 | 0 | 0 | 0 | 0 |
| Total Exports (Balance) | 6 | 0 | 0 | 12 | 0 | 0 | 0 | 0 |
| International Marine Bunkers | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Stock Changes (National Territory) | 8 | -43 | 0 | 29 | -1 | -119 | 0 | 0 |
| Inland Consumption (Calculated) | 9 | 675 | 7,051 | 514 | 17 | 1,066 | 4,568 | 5,230 |
| Statistical Differences | 10 | 0 | 456 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |  |
| MEMO ITEM: From other sources |  |  |  |  |  |  |  |  |
| From Other Sources - Oil | 11 |  |  | 0 | 0 | 0 | 0 | 0 |
| From Other Sources - Natural Gas | 12 |  |  | 0 | 0 | 0 | 0 | 0 |
| From Other Sources - Renewables | 13 |  |  | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |  |
| Transformation Sector | 14 | 675 | 5,972 | 491 | 0 | 0 | 959 | 0 |
| Main Activity Producer Electricity Plants | 15 | 0 | 5,965 | 0 | 0 | 0 | 0 | 0 |
| Main Activity Producer CHP Plants | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Main Activity Producer Heat Plants | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Autoproducer Electricity Plants | 18 | 0 | 7 | 0 | 0 | 0 | 0 | 0 |
| Autoproducer CHP Plants | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Autoproducer Heat Plants | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Oatant Eunlolante CTanoformation) | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coke Ovens (transformation | 22 | 675 | 0 | 0 | 0 | 0 | 0 | 0 |
| ono mants (tramsturmatum) | 23 |  | 0 | 0 | 0 | 0 | 0 | 0 |
| Gas Works (Transformation) | 24 | $\bigcirc$ | 0 | 0 | 0 | 0 | 0 | 0 |
| Blast Furnaces (Transformation) | 25 | 0 | 0 | 491 | 0 | 0 | 959 | 0 |
| Coal Liquefaction Plants (Transformation) | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| For Blended Natural Gas | 27 |  |  |  |  | 0 | 0 | 0 |
| Non-specified (Transformation) | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## COKE OVEN DATA

|  |  | Coking Coal | Other Bituminous Coal | Coke Oven Coke | Coal Tar | Gas Works Gas | Coke Oven Gas | Blast Furnace Gas |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SUPPLY AND TRANSFORMATION SECTOR |  | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | TJ (gross) | TJ (gross) | TJ (gross) |
|  |  | B | C | H | J | L | M | N |
| ENERGY SECTOR AND FINAL CONSUMPTION |  |  |  |  |  |  |  |  |
| Energy Sector | 29 | 0 | 0 | 0 | 17 | 0 | 476 | 3,454 |
| Own Use in Electricity, CHP and Heat PIa | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Coal Mines | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Patent Fuel Plants (Energy) | 32 | 0 | 0 | 0 | 0 | 0 |  | 0 |
| Coke Ovens (Energy) | 33 | 0 | 0 | 0 | 0 | 0 | 476 | 3.454 |
| BKB Plants (Energy) | 34 | 0 | 0 | 0 | 0 | 0 |  | 0 |
| Gas Works (Energy) | 35 | 0 | 0 | 0 |  | 0 | 0 | 0 |
| Blast Furnaces (Energy) | 36 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| Petroleum Refineries | 37 | 0 | 0 | 0 | v | 0 | 0 | 0 |
| Coal Liquefaction Plants (Energy) | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-specified (Energy) | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |  |
| Distribution Losses | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 1,044 |
|  |  |  |  |  |  |  |  |  |
| Total Final Consumption | 41 | 0 | 623 | 23 | 0 | 1,066 | 3,133 | 732 |
|  |  |  |  |  |  |  |  |  |
| Total Non-Energy Use | 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-Energy Use Industry/Transformation/ | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Of which: Non-Energy UseChemical/Petrochem | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-Energy Use in Transport | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-Energy Use in Other Sectors | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## COKE OVEN DATA

|  |  | Coking Coal | Other <br> Bituminous <br> Coal | Coke Oven Coke | Coal Tar | Gas Works Gas | Coke Oven Gas | $\begin{gathered} \text { Blast } \\ \text { Furnace } \\ \text { Gas } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SUPPLY AND TRANSFORMATION SECTOR |  | $10^{2} \mathrm{t}$ | $10^{2} \mathrm{t}$ | $10^{2} \mathrm{t}$ | $10^{2} \mathrm{t}$ | $\begin{gathered} \text { TJ } \\ \text { (gross) } \end{gathered}$ | $\begin{gathered} \text { TJ } \\ \text { (gross) } \end{gathered}$ | $\begin{gathered} \text { TJ } \\ \text { (gross) } \end{gathered}$ |
|  |  | B | C | H | J | L | M | N |
| ENERGY END USE SPECIFICATION |  |  |  |  |  |  |  |  |
| Final Energy Consumption | 47 | 0 | 623 | 23 | 0 | 1,066 | 3,133 | 732 |
|  |  |  |  |  |  |  |  |  |
| Industry Sector | 48 | 0 | 599 | 23 | 0 | 0 | 5,133 | 732 |
| Iron and Steel | 49 | 0 | 0 | 0 | 0 | - | 3,133 | 732 |
| Chemical (including Petrochemical) | 50 | 0 | 0 | 0 | 0 | 8 |  | 0 |
| Non-Ferrous Metals | 51 | 0 | 0 | 0 | 0 | 0 | $\bigcirc$ | 0 |
| Non-Metallic Minerals | 52 | 0 | 332 | 0 | 0 | 0 | 0 | 0 |
| Transport Equipment | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Machinery | 54 | 0 | 0 | - | 0 | 0 | 0 | 0 |
| Mining and Quarrying | 55 | 0 | 81 | 19 | 0 | 0 | 0 | 0 |
| Food, Beverages and Tobacco | 56 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Paper, Pulp and Printing | 57 | 0 | 12 | 0 | 0 | 0 | 0 | 0 |
| Wood and Wood Products | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Construction | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Textiles and Leather | 60 | 0 | 0 | - 0 | 0 | 0 | 0 | 0 |
| Non-specified (Industry) | 61 | 0 | 174 | 4 | 0 | 0 | 0 | 0 |
| Non-specined(Industry) |  |  |  |  |  |  |  |  |
| Transport Sector | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rail | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Domestic Navigation | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-specified (Transport) | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |  |
| Other Sectors | 66 | 0 | 24 | 0 | 0 | 1,066 | 0 | 0 |
| Commercial and Public Services | 67 | 0 | 6 | 0 | 0 | 575 | 0 | 0 |
| Residential | 68 | 0 | 0 | 0 | 0 | 491 | 0 | 0 |
| Agriculture/Forestry | 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fishing | 70 | 0 | 18 | 0 | 0 | 0 | 0 | 0 |
| Non-specified (Other) | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

# Table 2 <br> Imports <br> - 66 <br> Countries <br> of Origin 

## Table 3 <br> Exports <br> - 73

Countries
of
Destination

- 5 'Other' Regions

|  |  | Anthracite | Coking Coal | Other Bituminous Coal | Sub- bituminous Coal | Lignite/Brown Coal | Patent Fuel | Coke Oven Coke | Coal Tar | BKB/PB |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ | $10^{3} \mathrm{t}$ |
|  |  | A | B | C | D | E | F | G | H | , |
| Albania | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Armenia | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Australia | 3 | 0 | 421 | 196 | 0 | 0 | 0 | 0 | 0 | 0 |
| Austria | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Azerbaijan | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Belarus | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Belgium | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bosnia and Herzegovina | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bulgaria | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Canada | 10 | 0 | 297 | 122 | 0 | 0 | 0 | 0 | 0 | 0 |
| China, People's Republic | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Colombia | 12 | 0 | 0 | 4,433 | 0 | 0 | 0 | 0 | 0 | 0 |
| Croatia | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cyprus | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Czech Republic | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Denmark | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Estonia | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Finland | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| France | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Georgia | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Germany | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Greece | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hungary | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Iceland | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Indonesia | 25 | 0 | 0 | 528 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ireland | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Israel | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Italy | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## TABLE 3. EXPORTS BY DESTINATION

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|l|}{\multirow[t]{2}{*}{}} \& Anthracite
\[
10^{3} \mathrm{t}
\] \& Coking Coal
\[
10^{3} \mathrm{t}
\] \& \begin{tabular}{c|}
\hline Other \\
Bituminous \\
Coal \\
\(10^{3} \mathrm{t}\) \\
\hline
\end{tabular} \& \begin{tabular}{c|}
\hline Sub. \\
bituminous \\
Coal \\
\(10^{3} \mathrm{t}\) \\
\hline
\end{tabular} \& \begin{tabular}{|c|}
\hline Lignit/Brow \\
n Coal \\
\\
\(10^{3} \mathrm{t}\) \\
\hline
\end{tabular} \& Patent Fuel
\[
10^{3} \mathrm{t}
\] \& \(\qquad\) \& Coal Tar
\[
10^{3} \mathrm{t}
\] \& BKB/PB

$10^{3} \mathrm{t}$ <br>
\hline \& \& A \& , \& C \& D \& , \& F \& G \& H \& 1 <br>
\hline Albania \& 1 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Algeria \& 2 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Argentina \& 3 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& <br>
\hline Armenia \& 4 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& <br>
\hline Australia \& 5 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Austria \& 6 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Azerbajan \& 7 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Belarus \& 8 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Belgium \& 9 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Bosnia and Herzegovina \& 10 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Brazil \& 11 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Bulgaria \& 12 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Canada \& 13 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Chile \& 14 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline China, People's Republic \& 15 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Chinese Taipei \& 16 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Croatia \& 17 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Cyprus \& 18 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Czech Republic \& 19 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Denmark \& 20 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline Egypt \& 21 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& <br>
\hline Estonia \& 22 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& <br>
\hline Finland \& 23 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline France \& 24 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 \& 0 <br>
\hline
\end{tabular}

## TABLE 4. CALORIFIC VALUES

15 Primary and derived coal products -Production
-Imports
-Exports
-Used in Coke Ovens
-Used in Blast Furnaces
-Used in main Activity Plants
-Used in Industry
-For Other Uses

## TABLE 4. CALORIFIC VALUES

|  |  | Anthracite <br> MJItonne | CokingCoal <br> MJItonne | Other Bituminous Coal MJItonne | Sub- bituminous Coal MJtonne | Lignite Brown <br> Coal <br> MJItonne | Peat <br> MJtonne | Patent Fuel <br> MJItonne | Coke Oven Coke MJtonne | Gas Coke <br> MJItonne | Coal Tar <br> MJtonne | BKBPB* <br> MJItonne |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | A | B | C | D | E | $F$ | G | H | 1 | J | IMJionne |
| Production | gross 1 | 0 |  | 7,348 | 0 | 0 | 0 | 0 | 28,790 | $\binom{43,514}{41,338}$ |  |  |
|  | net 2 | 0 |  | 16,481 | 0 | 0 | 0 | 0 | 27,350 |  |  |  |
| Imports | gross 3 | 0 | 30,125 | 25,054 | 0 | 0 | 0 |  | 0 |  |  | 0 |
|  | net 4 | 0 | 28,619 | 23,801 | 0 | 0 | 0 | 0 | 0 |  |  | 0 |
| Exports | gross 5 | 0 | 0 | 0 | 0 | 0 | 0 | $\begin{array}{r} 20,913 \\ 19,867 \end{array}$ |  | - |  |  |
|  | net 6 | 0 | 0 | 0 | 0 | 0 | 0 |  |  |  |  |  |
| Used in coke ovens | gross 7 | 0 | 30,125 | 0 | 0 | 0 | 0 | 0 | 0 |  |  | 0 |
|  | net 8 | 0 | 28,619 | 0 | 0 | 0 | 0 | 0 | 0 |  |  | 0 |
| Used in blast furnaces | gross 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28,790 |  | 43,514 | 0 |
|  | net 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 27,350 | - | 41,338 | 0 |
| Used in Main Actinty Plants | gross 11 | 0 | 0 | 24.404 | 0 | 0 | 0 | 0 | 0 |  |  | 0 |
|  | net 12 | 0 | 0 | 23,184 | 0 | 0 | 0 | 0 | 0 |  |  | 0 |
| Used in industry | gross 13 | 0 | 0 | 26,748 | 0 | 0 | 0 | 0 | 28,790 |  |  | 0 |
|  | net 14 | 0 | 0 | 25,411 | 0 | 0 | 0 | 0 | 27,350 |  |  | 0 |
| For Other Uses | gross 15 | 0 | 30,125 | 0 | 0 | 0 | 0 | 0 | 0 |  |  | 0 |
|  | net 16 | 0 | 28,619 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 0 |

## RELATIONSHIPS

## Table Relations within the Coal Questionnaire



- Integers, negative numbers, sums
- Percentage differences with prior year
- Comparisons to other questionnaires
- Calorific values
- Net vs. gross calorific values
- Statistical difference
- Transformation efficiency rates
- Shares of coke oven outputs
- Shifts in product classification
- Breaks in series
- Trade data coincides with trade partners


## USES OF THE DATA

■ Coal Information book

- Electronic online files

■ Energy balances
■ Environmental issues
■ Data support for other IEA divisions/other organizations
$\square$ Country reviews
■ Assessing security of supply
■ Making policy and business decisions


- The IEA also publishes quarterly coal production and trade data (volume)
- Hard coal and brown coal production
- Coal imports and exports by types and trade partners


■ It is difficult to access timely data for some countries
■ Your assistance in identifying appropriate sources and contacts would be appreciated

- IEA points of contact
- Rachael Hackney
- ces@iea.org


## Thank you

## COALAQ@iea.org

