COAL

IEA Coal Questionnaire

Joint Rosstat – IEA Energy Statistics Workshop
Moscow, February 2012

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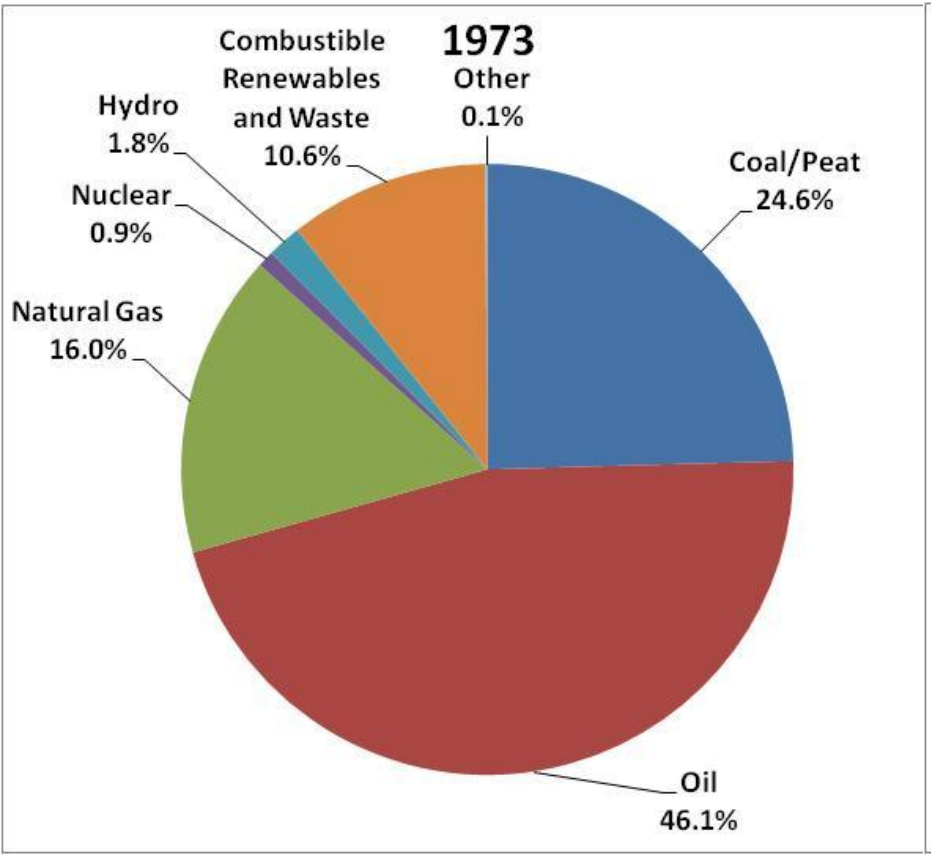
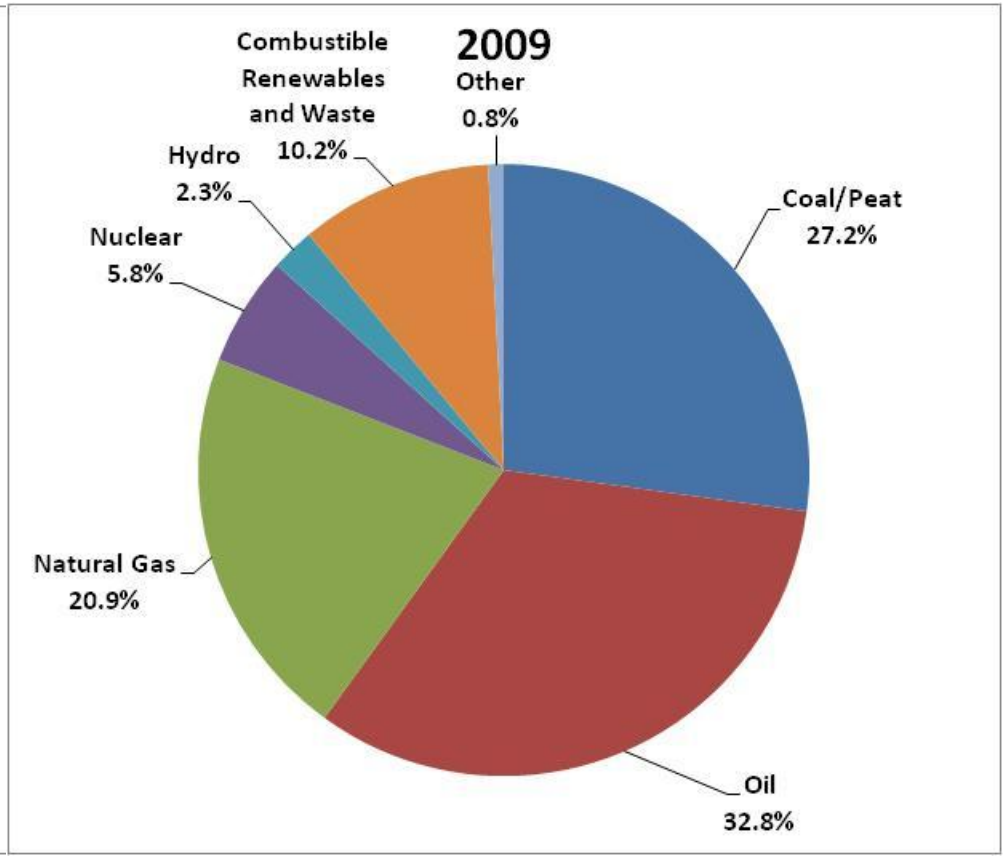
International Energy Agency

OVERVIEW

- **The Importance of Coal**
- **IEA Annual Coal Questionnaire**
- **Data Consistency Checks**
- **Uses of the Data**

WORLD PRIMARY ENERGY SUPPLY



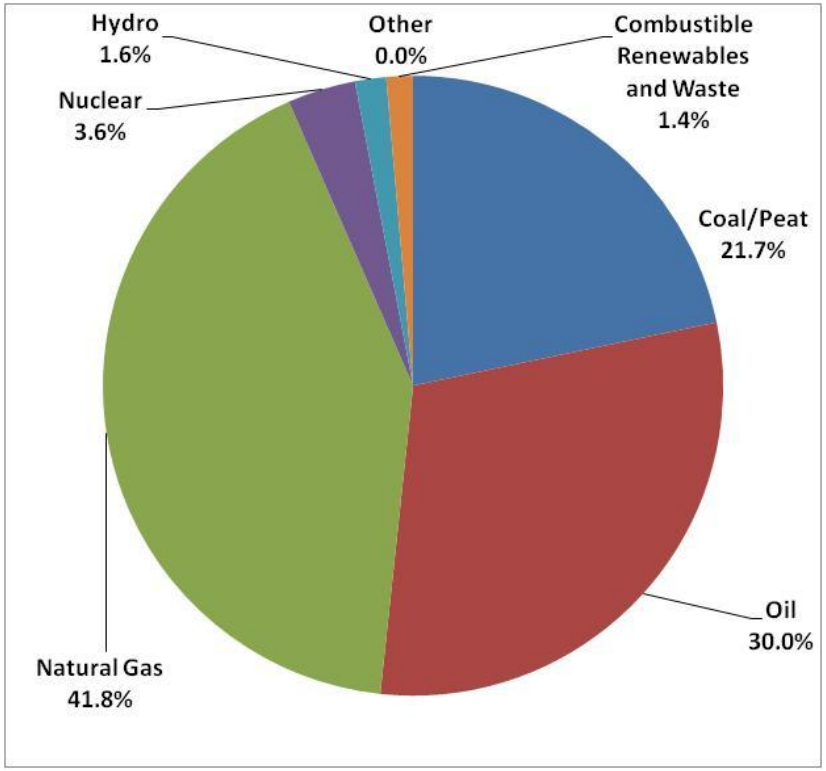


6,111 Mtoe **12,150 Mtoe**

TPES doubled and coal more than doubled

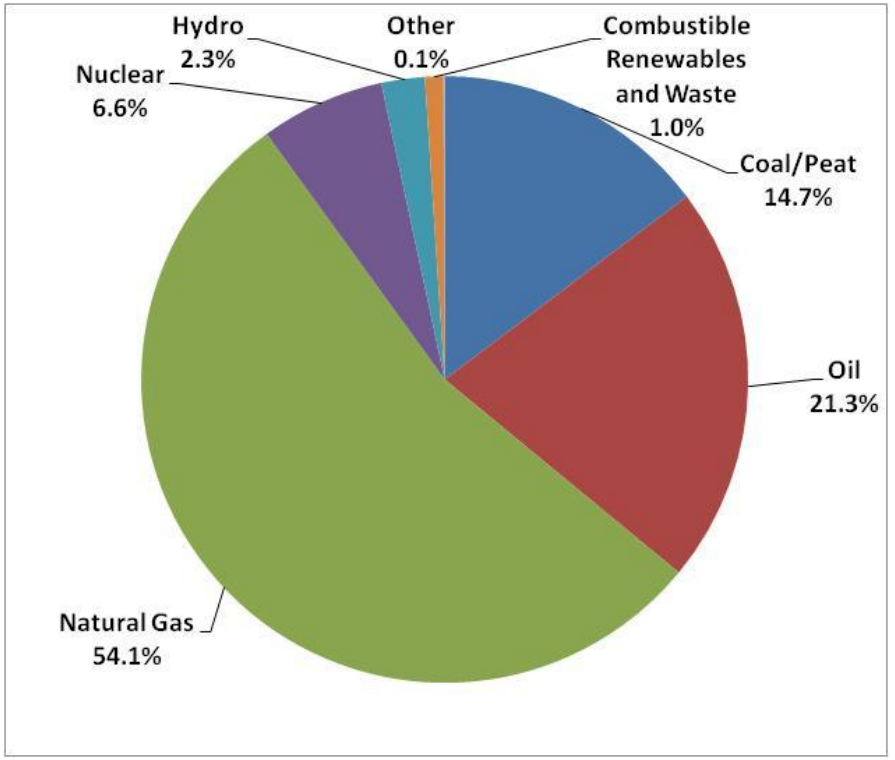
RUSSIAN PRIMARY ENERGY SUPPLY

1990



879 Mtoe

2009

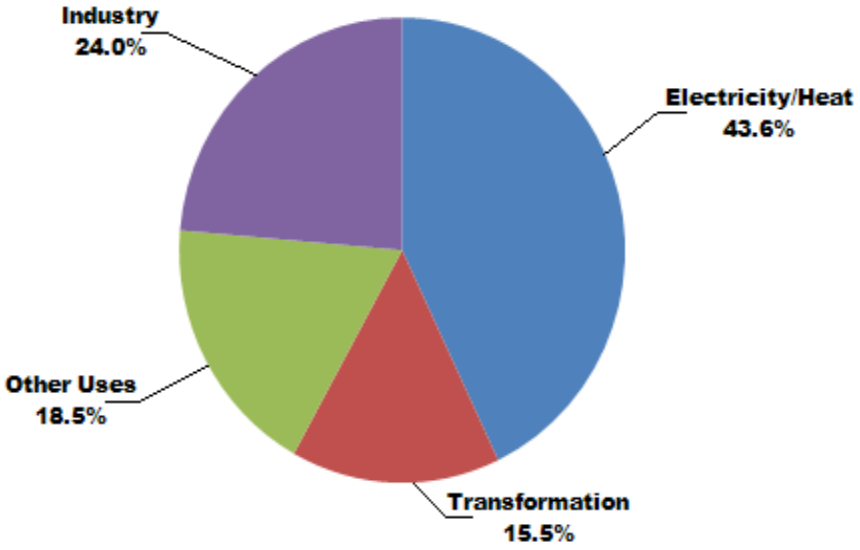


641 Mtoe

TPES down by a quarter and coal supply cut in half

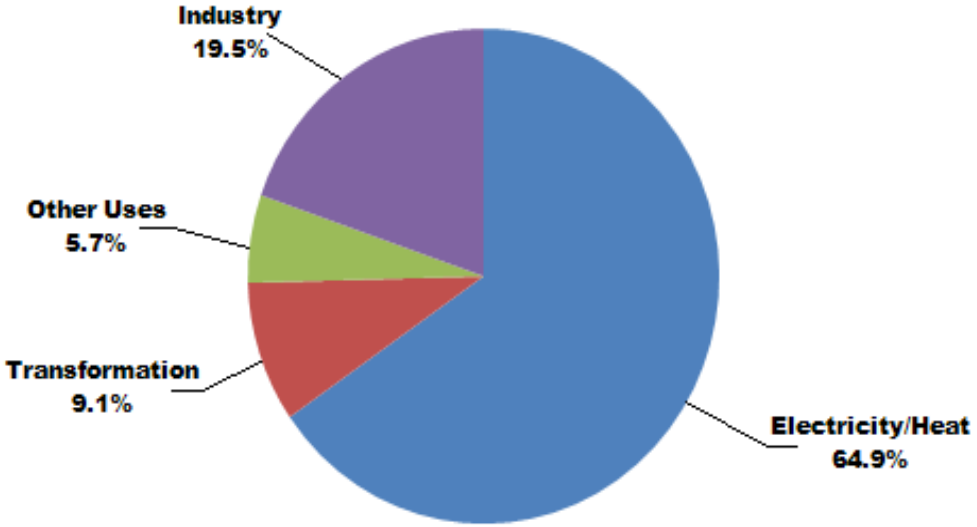
WORLD USES OF COAL

1973



2,144 Mtce

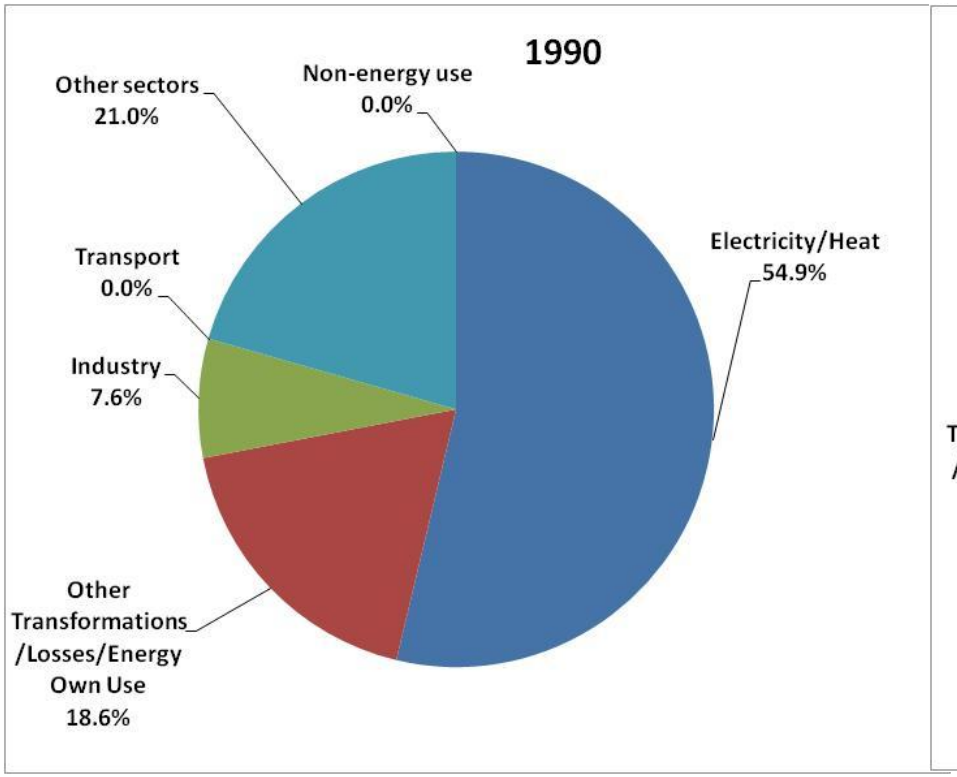
2009



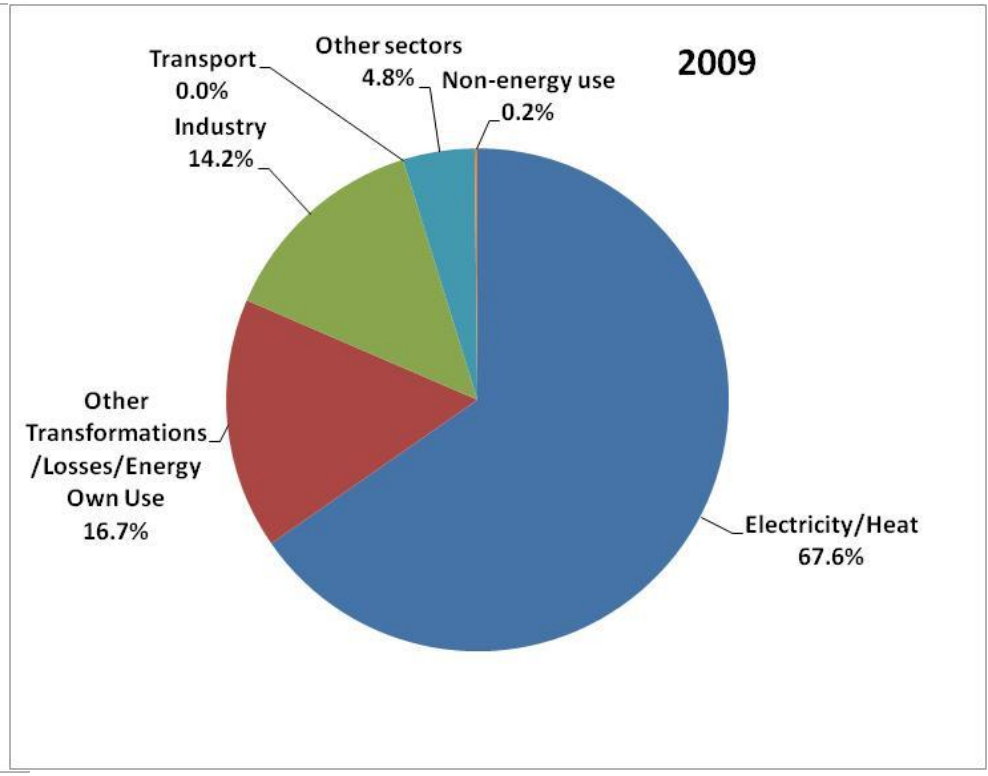
4,714 Mtce

Coal and coal products increasingly used for electricity generation

RUSSIAN USES OF COAL



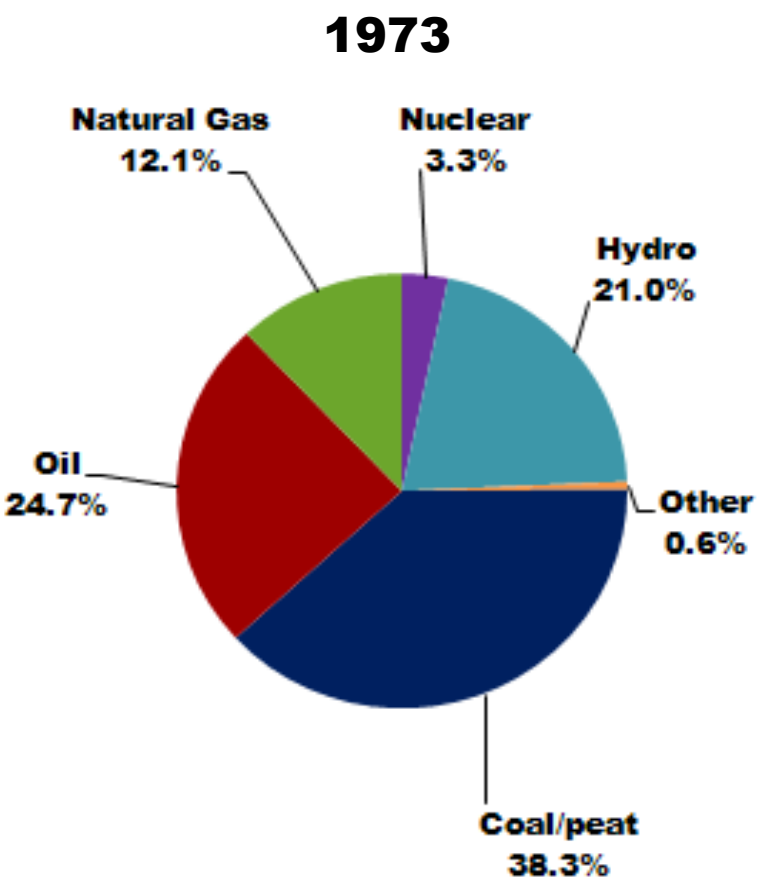
273 Mtce



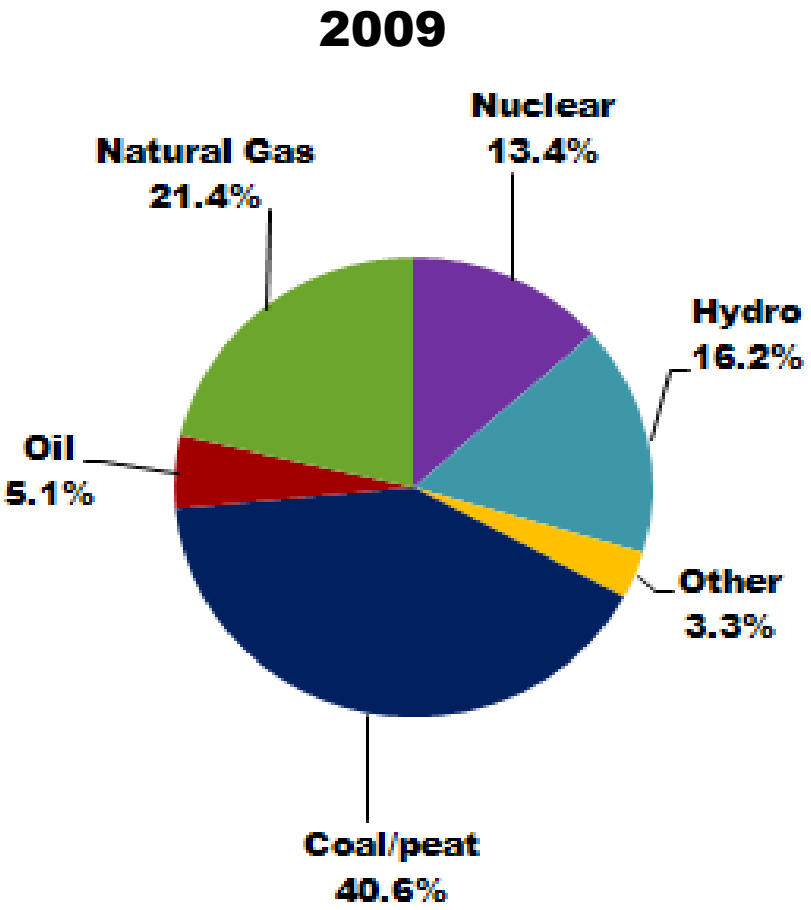
136 Mtce

Coal and coal products increasingly used for electricity generation and industry

WORLD FUEL SHARES OF ELECTRICITY



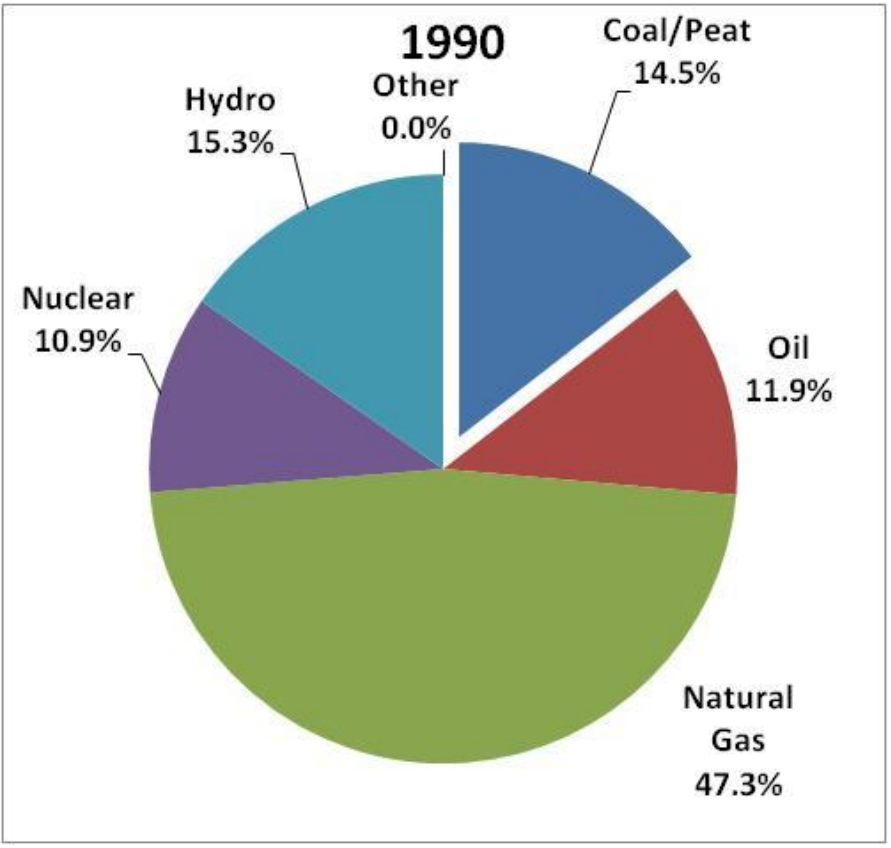
6 115 TWh



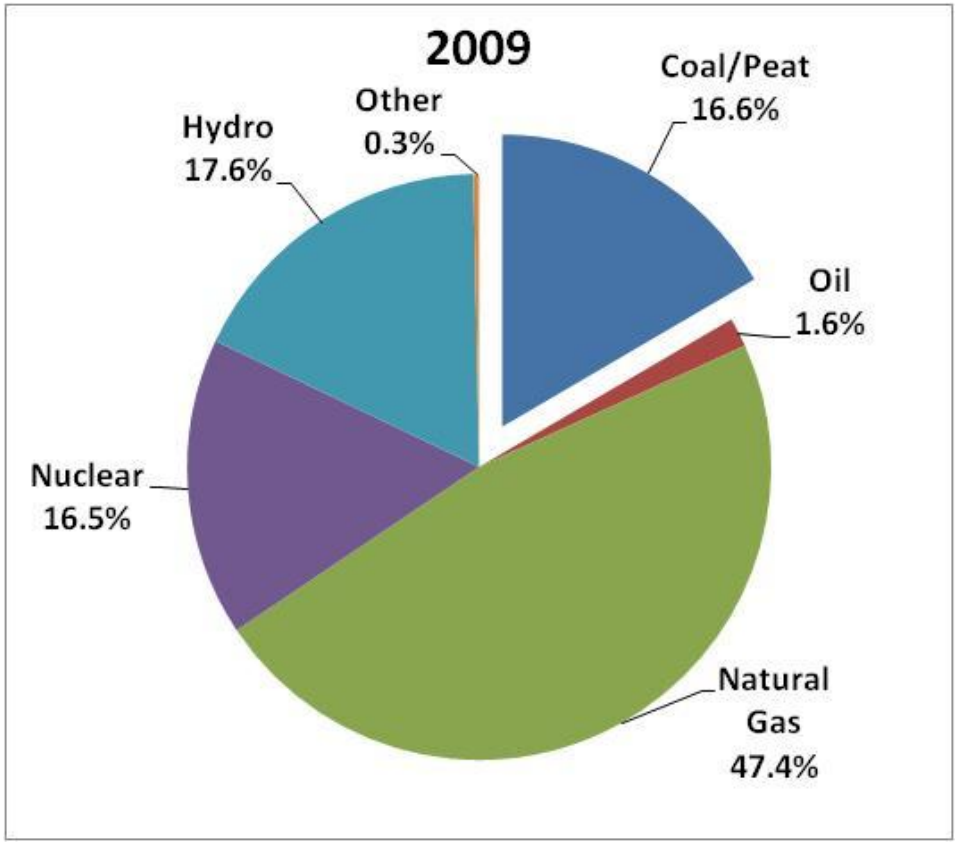
20 055 TWh

Electricity generation more than triple, with coal holding its own

RUSSIAN FUEL SHARES OF ELECTRICITY



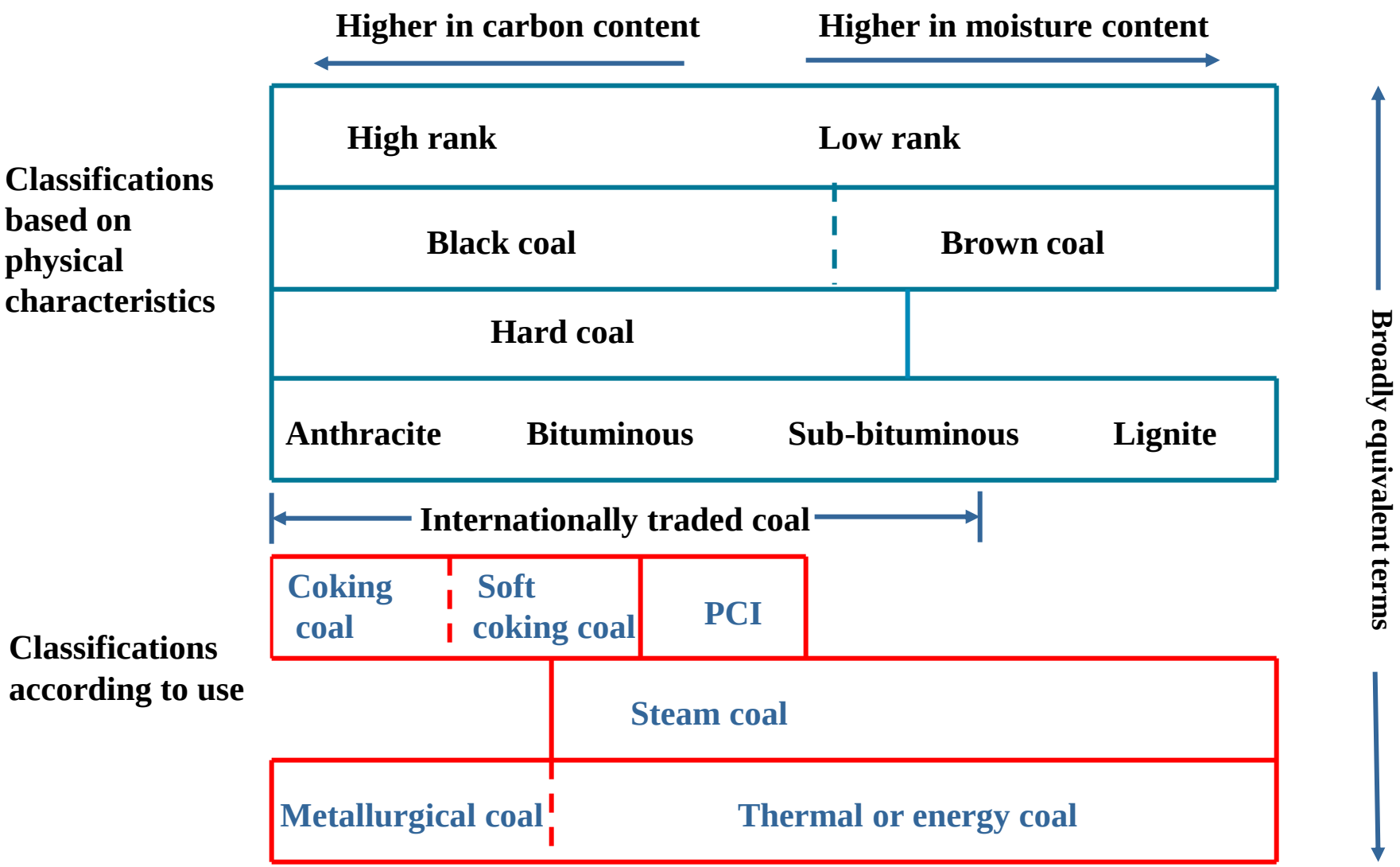
1 082 TWh



990 TWh

Coal, nuclear and hydro taking larger shares at the expense of oil

COMMON COAL CLASSIFICATIONS



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 and MANUFACTURED PRODUCTS	Patent Fuels	
	Coke Oven Coke	
	Gas Coke	
	BKB/Peat Briquettes	
	Coal Tar	LIQUID FUEL
	Gas Works Gas	MANUFACTURED GASES
	Coke Oven Gas	
	Blast Furnace Gas	
	Oxygen Steel Furnace Gas	

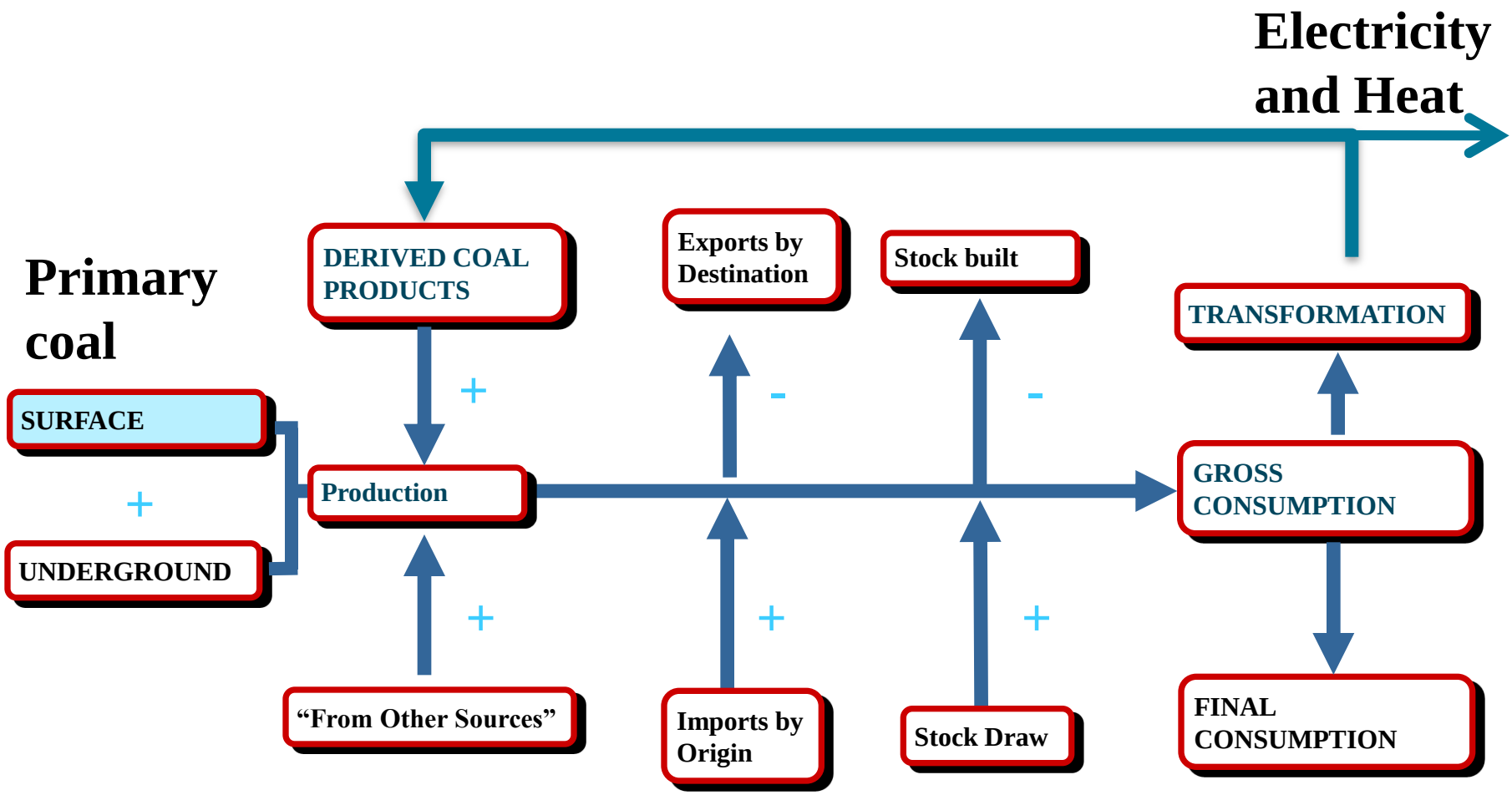
PRIMARY COAL DEFINITIONS

- **Hard Coal**
  - Gross calorific value greater than 23,865 kJ/kg
  - Anthracite: less than 10% volatile matter
  - Bituminous
    - Coking coal: used to make coke
    - Other bituminous coal: used for steam raising purposes – heat and electricity generation
- **Sub-Bituminous Coal**
  - Gross calorific value 17,435 - 23,865 kJ/kg
- **Lignite/Brown Coal**
  - Gross calorific value less than 17,435 kJ/kg

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**

TABLE 1. COAL FLOW



SUMMARY FLOWS FROM TABLE 1

Industry Sector	Anthracite	Coking Coal	Other Bituminous Coal	Sub-bituminous Coal	Lignite/Brown Coal	Peat	Patent Fuel	Coke Oven Coke	Gas Coke	Coal Tar	BKB/PB	Gas Works Gas	Coke Oven Gas	Blast Furnace Gas	Oxygen Steel Furnace Gas
Iron and Steel	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	TJ (gross)	TJ (gross)	TJ (gross)	TJ (gross)
Mining and Quarrying															
Food, Beverages and Tobacco															
Paper, Pulp and Printing															
Wood and Wood Products															
Construction															
Textiles and Leather															
Non-specified (Industry)															
Transport Sector															
Rail															
Domestic Navigation															
Non-specified (Transport)															
Other Sectors															
Commercial and Public Services															
Residential															
Agriculture/Forestry															
Fishing															
Non-specified (Other)															

Gross Consumption

From Other Sources
Total Imports (Balance)
Total Exports (Balance)
International Marine Bunkers
Stock Changes (National Territory)
Inland Consumption (Calculated)
Statistical Differences
Own use in Electricity, CHP and Heat Plants
Coal Mines
Patent Fuel Plants (Energy)
Coke Ovens (Energy)
BKB Plants (Energy)
Gas Works (Energy)
Blast Furnaces (Energy)
Petroleum Refineries
Coal Liquefaction Plants (Energy)
Non-specified (Energy)

sub-sectors)

+ Non Energy Uses

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

TYPES OF ELECTRIC AND HEAT PLANTS

	Electricity Only	CHP	Heat Only
Main Activity Producer	Report all electricity production and all fuel used	Report all electricity and heat produced and all fuel used	Report all heat produced and all fuel used
Autoproducer		Report all electricity produced and only heat **sold** with the corresponding fuel used	Report only heat **sold** and corresponding fuel used

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

TABLE 1. SUPPLY AND TRANSFORMATION SECTOR

International Energy Agency

Russian Federation		Anthracite	Coking Coal	Other Bituminous Coal
SUPPLY AND TRANSFORMATION SECTOR		10^3 t	10^3 t	10^3 t
		A	B	C
Underground Production	1	5,998	59,854	141,128
Surface Production	2	5,998	59,854	141,128
	3	0	0	0
	4	0	0	0
Total Imports (Balance)	5	244	225	23,339
Total Exports (Balance)	6	7,078	13,276	85,198
International Marine Bunkers	7	0	0	0
Stock Changes (National Territory)	8	836	4	-9,639
Inland Consumption (Calculated)	9	0	46,807	69,630
Statistical Differences	10	0	0	0
MEMO ITEM: From other sources				
From Other Sources - Oil	11			
From Other Sources - Natural Gas	12			
From Other Sources - Renewables	13			
Transformation Sector	14	0	46,807	21,354
Main Activity Producer Electricity Plants	15	0	0	0
Main Activity Producer CHP Plants	16	0	0	15,856
Main Activity Producer Heat Plants	17	0	0	0
Autoproducer Electricity Plants	18	0	0	0
Autoproducer CHP Plants	19	0	0	598
Autoproducer Heat Plants	20	0	0	4,900
Patent Fuel Plants (Transformation)	21	0	0	0
Coke Ovens (Transformation)	22	0	46,807	0
BKB Plants (Transformation)	23	0	0	0
Blast Furnaces (Transformation)	24	0	0	0
	25	0	0	0
Coal Liquefaction Plants (Transformation)	26	0	0	0

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+ =

48,276

TABLE 1. ENERGY SECTOR AND FINAL CONSUMPTION

Russian Federation		Anthracite	Coking Coal	Other Bituminous Coal
SUPPLY AND TRANSFORMATION SECTOR		10^3 t	10^3 t	10^3 t
		A	B	C
ENERGY SECTOR AND FINAL CONSUMPTION				
Energy Sector	29	**0**	**0**	**909**
Own Use in Electricity, CHP and Heat Plants	30	0	0	10
Coal Mines	31	0	0	401
Patent Fuel Plants (Energy)	32	0	0	0
Coke Ovens (Energy)	33	0	0	98
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
Coal Liquefaction Plants (Energy)	38		0	0
Non-specified (Energy)	39	0	0	0
Distribution Losses	40	0	0	0
Total Final Consumption	41	**0**	**0**	**47,367**
Total Non-Energy Use	42	**0**	**0**	**280**
Non-Energy Use Industry/Transformation/Energy	43	0	0	280
Of which: Non-Energy Use-Chemical/Petrochem	44	0	0	280
Non-Energy Use in Transport	45	0	0	0
Non-Energy Use in Other Sectors	46	0	0	0

48,276

TABLE 1. ENERGY END USE SPECIFICATION

Russian Federation		Anthracite	Coking Coal	Other Bituminous Coal
SUPPLY AND TRANSFORMATION SECTOR		10^3 t	10^3 t	10^3 t
		A	B	C
Final Energy Consumption	47	**0**	**0**	**47,087**
Industry Sector	48	**0**	**0**	**6,127**
Iron and Steel	49	0	0	**0**
Chemical (including Petrochemical)	50	0	0	[illegible]
Non-Ferrous Metals	51	0	0	0
Non-Metallic Minerals	52	0	0	1,055
Transport Equipment	53	0	0	18
Machinery	54	0	0	77
Mining and Quarrying	55	0	0	0
Food, Beverages and Tobacco	56	0	0	1,430
Paper, Pulp and Printing	57	0	0	0
Wood and Wood Products	58	0	0	23
Construction	59	0	0	46
[illegible]	60	0	0	9
Non-specified Industry	61	0	0	9
Transport Sector	62	**0**	**0**	**0**
Rail	63	0	0	0
Domestic Navigation	64	0	0	0
Non-specified (Transport)	65	0	0	0
[illegible]	66	**0**	**0**	[illegible]
Commercial and Public Services	67	0	0	**3,776**
Residential	68	0	0	3,102
Agriculture/Forestry	69	0	0	76
Fishing	70	0	0	6
Non-specified (Other)	71	0	0	0

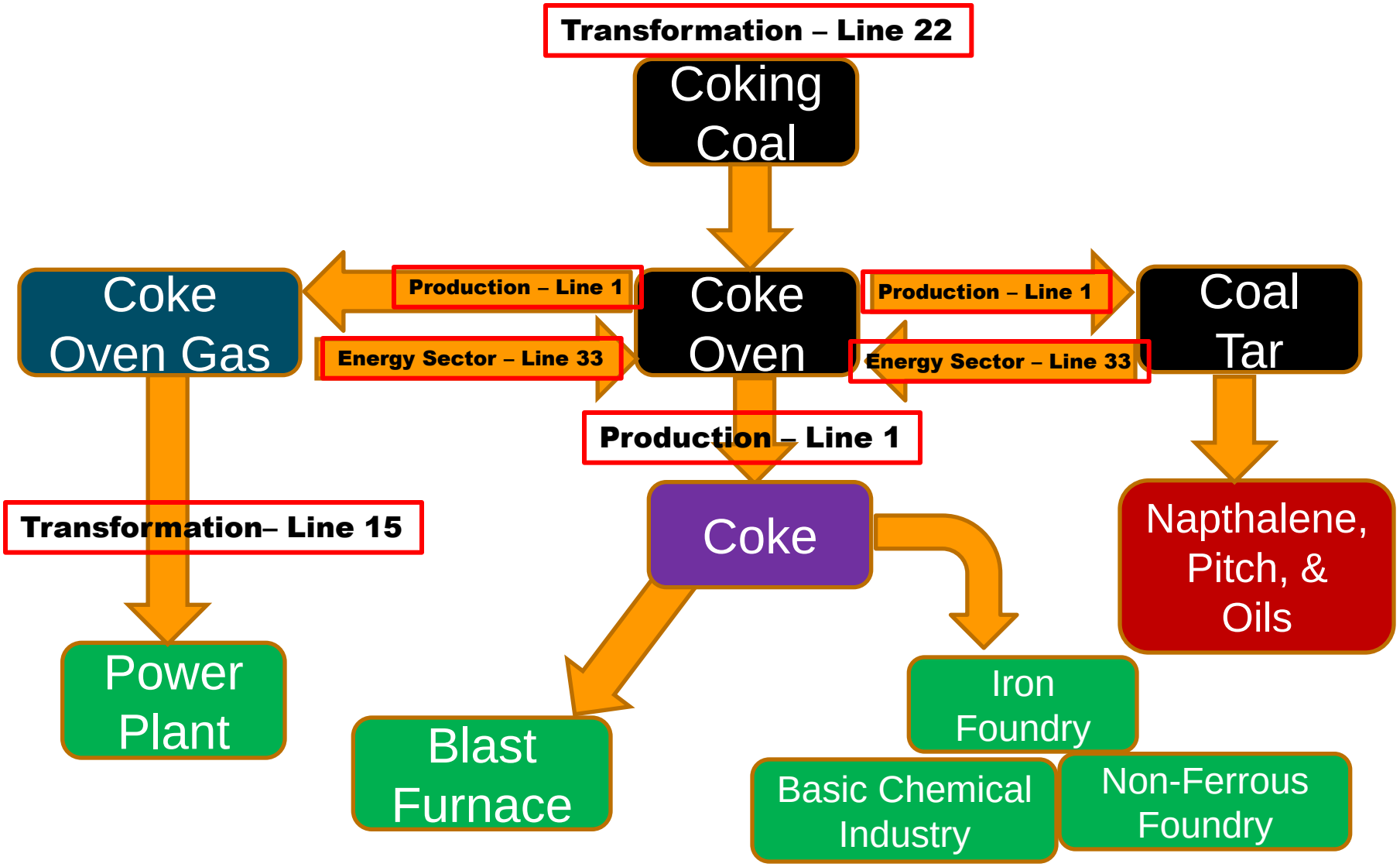
STATISTICAL DIFFERENCE

Other Bituminous Coal

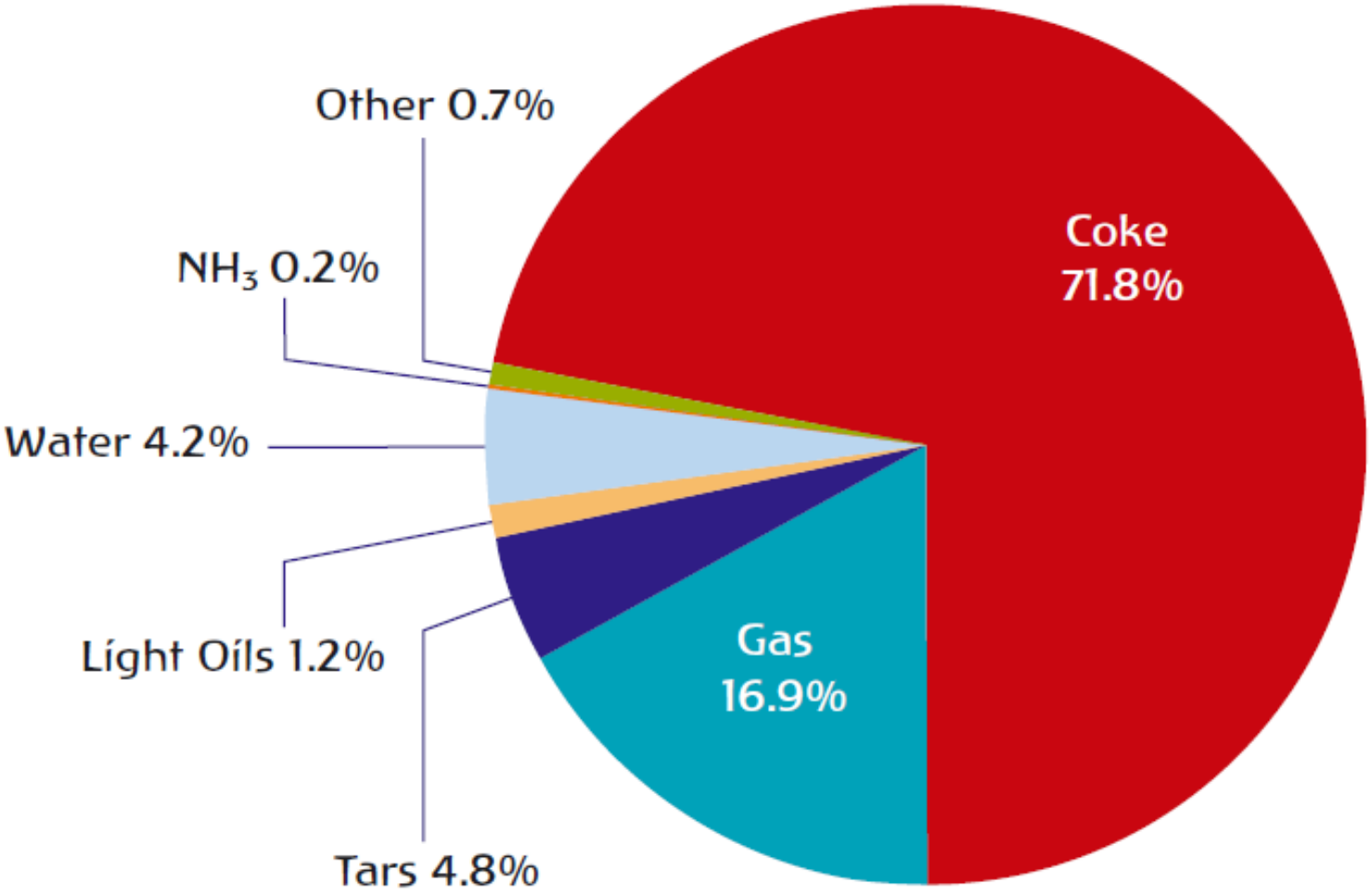
Inland Consumption (calculated):	69,630
Transformation Sector:	-77,324
Energy Sector:	- 909
Distribution Losses:	- 0
Total Final Consumption:	- 8,485
Statistical Difference:	-17,088

(25% of calculated consumption)

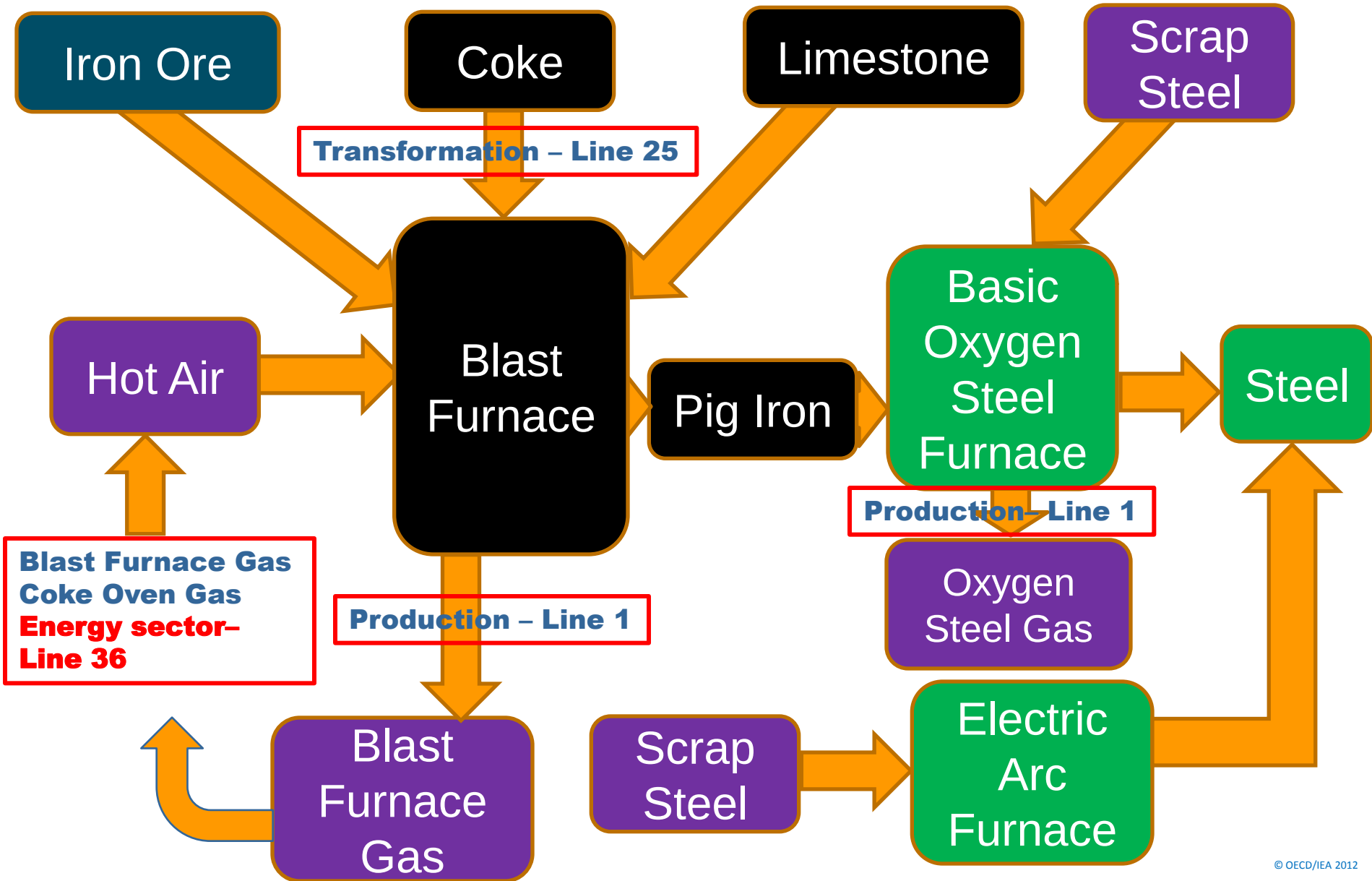
Coke Making Process



TYPICAL MASS YIELDS FROM COKE OVENS



Iron and Steelmaking Process



RUSSIAN COKE OVEN DATA

Russian Federation		Anthracite	Coking Coal	Other Bituminous Coal	Coke Oven Coke	Gas Coke	Coal Tar	Gas Works Gas	Coke Oven Gas	Blast Furnace Gas	Oxygen Steel Furnace Gas
SUPPLY AND TRANSFORMATION SECTOR		10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	TJ (gross)	TJ (gross)	TJ (gross)	TJ (gross)
		A	B	C	H	I	J	L	M	N	O
Indigenous Production	1	5,998	59,854	141,128	**27,389**	0	0		**240,914**	**548,664**	0
[illegible]	2	5,998	59,854	141,128							
Surface Production	3	0	0	0							
From Other Sources	4	0	0	0	0	0	0	0	0	0	0
Total Imports (Balance)	5	244	225	23,339	219	0	0	0	0	0	0
Total Exports (Balance)	6	7,078	13,276	85,198	1,858	0	0	0	0	0	0
International Marine Bunkers	7	0	0	0	0	0	0	0	0	0	0
Stock Changes (National Territory)	8	836	4	-9,639	118	0	0	0	0	0	0
Inland Consumption (Calculated)	9	**0**	46,807	69,630	25,868	**0**	**0**	**0**	240,914	548,664	**0**
Statistical Differences	10	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MEMO ITEM: From other sources											
From Other Sources - Oil	11				0	0	0	0	0	0	0
From Other Sources - Natural Gas	12				0	0	0	0	0	0	0
From Other Sources - Renewables	13				0	0	0	0	0	0	0
Transformation Sector	14	**0**	46,807	21,354	7	**0**	**0**	**0**	66,884	140,062	**0**
Main Activity Producer Electricity Plants	15	0	0	0	0	0	0	0	0	0	0
Main Activity Producer CHP Plants	16	0	0	15,856	0	0	0	0	0	0	0
Main Activity Producer Heat Plants	17	0	0	0	0	0	0	0	0	0	0
Autoproducer Electricity Plants	18	0	0	0	0	0	0	0	0	0	0
Autoproducer CHP Plants	19	0	0	598	0	0	0	0	63,540	119,057	0
Autoproducer Heat Plants	20	0	0	4,900	7	0	0	0	3,344	21,005	0
[illegible]	21	0		0	0	0	0	0	0	0	0
Coke Ovens (Transformation)	22	0	**46,807**	0	0	0	0	0	0	0	0
[illegible]	23	0	0	0	0	0	0	0	0	0	0
[illegible]	24	0	0	0	0	0	0	0	0	0	0
Blast Furnaces (Transformation)	25	0	**3,315**	0	0	0	0	0	0	0	0
Coal Liquefaction Plants (Transformation)	26	0	0	0	0	0	0	0	0	0	0
For Blended Natural Gas	27							0	0	0	0
Non-specified (Transformation)	28	0	0	0	0	0	0	0	0	0	0

RUSSIAN COKE OVEN DATA

Russian Federation		Anthracite	Coking Coal	Other Bituminous Coal	Coke Oven Coke	Gas Coke	Coal Tar	Gas Works Gas	Coke Oven Gas	Blast Furnace Gas	Oxygen Steel Furnace Gas
SUPPLY AND TRANSFORMATION SECTOR		10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	TJ (gross)	TJ (gross)	TJ (gross)	TJ (gross)
		A	B	C	H	I	J	L	M	N	O
ENERGY SECTOR AND FINAL CONSUMPTION											
Energy Sector	29	0	0	909	0	0	0	0	38,033	25,868	0
Own Use in Electricity, CHP and Heat Plants	30	0	0	410	0	0	0	0	0	12,654	0
Coal Mines	31	0	0	401	0	0	0	0	0	0	0
Patent Fuel Plants (Energy)	32	0	0	0	0	0	0	0	0	0	0
Coke Ovens (Energy)	33	0	0	**98**	0	0	0	0	**38,033**	**13,214**	0
BKB Plants (Energy)	34	0	0	0	0	0	0	0	0	0	0
Gas Works (Energy)	35	0	0	0	0	0	0	0	0	0	0
Blast Furnaces (Energy)	36	0	0	0	0	0	0	0	0	0	0
Petroleum Refineries	37	0	0	0	0	0	0	0	0	0	0
Coal Liquefaction Plants (Energy)	38	0	0	0	0	0	0	0	0	0	0
Non-specified (Energy)	39	0	0	0	0	0	0	0	0	0	0
Distribution Losses	40	0	0	0	0	0	0	0	0	0	0
Total Final Consumption	41	0	0	47,367	25,861	0	0	0	135,997	382,734	0
Total Non-Energy Use	42	0	0	280	0	0	0	0	0	0	0
Non-Energy Use Industry/Transformation/Energy	43	0	0	280	0	0	0	0	0	0	0
Of which: Non-Energy Use-Chemical/Petrochem	44	0	0	280	0	0	0	0	0	0	0
Non-Energy Use in Transport	45	0	0	0	0	0	0	0	0	0	0
Non-Energy Use in Other Sectors	46	0	0	0	0	0	0	0	0	0	0

RUSSIAN COKE OVEN DATA

Russian Federation		Anthracite	Coking Coal	Other Bituminous Coal	Coke Oven Coke	Gas Coke	Coal Tar	Gas Works Gas	Coke Oven Gas	Blast Furnace Gas	Oxygen Steel Furnace Gas
SUPPLY AND TRANSFORMATION SECTOR		10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	TJ (gross)	TJ (gross)	TJ (gross)	TJ (gross)
		A	B	C	H	I	J	L	M	N	O
ENERGY END USE SPECIFICATION											
Final Energy Consumption	47	0	0	47,087	25,861	0	0	0	135,997	382,734	0
[illegible]	48	0	0	[illegible]	[illegible]	0	0	0	135,997	382,734	0
Iron and Steel	49	0	0	30,5	20,55	0	0	0	133,302	366,484	0
Chemical (including Petrochemical)	50	0	0	145	161	0	0	0	0	16,114	0
Non-Ferrous Metals	51	0	0	0	0	0	0	0	0	0	0
Non-Metallic Minerals	52	0	0	1,055	194	0	0	0	1,643	0	0
Transport Equipment	53	0	0	18	36	0	0	0	0	0	0
Machinery	54	0	0	77	22	0	0	0	1,052	0	0
Mining and Quarrying	55	0	0	0	232	0	0	0	0	0	0
Food, Beverages and Tobacco	56	0	0	1,430	0	0	0	0	0	0	0
Paper, Pulp and Printing	57	0	0	0	0	0	0	0	0	136	0
Wood and Wood Products	58	0	0	23	0	0	0	0	0	0	0
Construction	59	0	0	46	1	0	0	0	0	0	0
Textiles and Leather	60	0	0	9	0	0	0	0	0	0	0
Non-specified (Industry)	61	0	0	9	0	0	0	0	0	0	0

RUSSIA COKE OVEN DATA

Coke oven plant efficiency is expected to be about 95%

D	E	F	G
	Outputs		
1	Coke Oven Coke.Indigenous Production - Thous. tonnes	27 389	Table 1, Row 1, Column H
2	Coke Oven Coke.NCV	29 015	Table 4, Row 7, Column H
3	Coke Oven Coke.Production_TJ	794 692	Row 1 x Row 2
4	Coke Oven Gas (TJ GROSS).Indigenous Production	240 914	Table 1, Row 1, Column M
5	Coke Oven Gas (TJ NET) Production	216 823	0.9 x Row 4
6			
7	**Inputs**		
8	Coking Coal.Coke Ovens (Transformation) - Thous. tonnes	46 807	Table 1, Row 22, Column B
9	Coking Coal.NCV	28 500	Table 4, Row 13, Column B
10	Coking Coal.TJ_Transformation - TJ	1 334 000	Row 8 x Row 9
11	Other Bituminous Coal.Coke Ovens (Energy) - Thous. Tonnes	98	Table 1, Row 32, Column G
12	Other Bituminous Coal.NCV	24 009	Table 4, Row 8, Column C
13	Other Bituminous Coal.TJ_Energy	2 353	Row 11 x Row 12
14	Coke Oven Gas (TJ NET).TJ_Energy	34 230	Table 1, Row 33, Column M
15	Blast Furnace Gas.TJ_Energy	13 214	Table 1, Row 33, Column N
16			
17	TRANSFORMATION EFFICIENCY %	75.8	Rows 3 + 5 / Row 10
18	Coke Oven Coke Production Efficiency %	60	Row 3 / Row 10
19	Coke Oven Gas Production Efficiency %	16	Row 4 / Row 10
20			
21	TRANSFORMATION + ENERGY TOTAL EFFICIENCY %	73	Rows 3 + 5 / Rows 10+13+14+15

RUSSIA BLAST FURNACE DATA

Blast furnace efficiency expected to be up to 40%

	BLAST FURNACES	Russian Federation	
		2009	Sources of Data
	Outputs		
1	Blast Furnace Gas Indigenous Production - Gross TJ	548 664	Table 1, Row 1, Column N
2			
3	**Inputs**		
4	Other Bituminous Coal Blast Furnaces (Transformation)	3 315	Table 1, Row 25, Column C
5	Other Bituminous Coal (NCV)	24 009	Table 4, Row 10, Column C
6	Other Bituminous Coal Net TJ Transformation	79 590	Row 4 x Row 5
7	Coke Oven Coke Blast Furnaces (Transformation)	25 155	Table 1, Row 25, Column H
8	Coke Oven Coke (NCV)	29 015	Table 4, Row 10, Column H
9	Coke Oven Coke Net TJ Transformation	729 872	Row 7 x Row 8
10			
11	Blast Furnace Gas Production Efficiency %	67.8	Row 1 / Row 6 + Row 9
12			
13	EFFICIENCY OF PRODUCTION + ENERGY TOTAL %	67.8	Row 1 / Row 6 + Row 9 + energy use

No energy reported to fuel the blast furnace process. Should be reported in Table 1, Line 35.

COAL PRODUCT TRANSFERS

Russian Federation		Gas Coke	Coal Tar	BKB/PB	Gas Works Gas	Coke Oven Gas	Blast Furnace Gas	Oxygen Steel Furnace Gas
SUPPLY AND TRANSFORMATION SECTOR		10^3 t	10^3 t	10^3 t	TJ (gross)	TJ (gross)	TJ (gross)	TJ (gross)
		I	J	K	L	M	N	O
Indigenous Production	1	0	0	53	0	240,914	548,664	0
Underground Production	2							
Surface Production	3							
From Other Sources	4	0	0	0	0	0	0	0
Total Imports (Balance)	5	0	0	0	0	0	0	0
Total Exports (Balance)	6	0	0	0	0	0	0	0
International Marine Bunkers	7	0	0	0	0	0	0	0
Stock Changes (National Territory)	8	0	0	-2	0	0	0	0
Inland Consumption (Calculated)	9	**0**	**0**	**51**	**0**	**240,914**	**548,664**	**0**
Statistical Differences	10	**0**	**0**	**0**	**0**	**0**	**0**	**0**
MEMO ITEM: From other sources								
From Other Sources - Oil	11	0	0	0	0	0	0	0
From Other Sources - Natural Gas	12	0	0	0	0	0	0	0
From Other Sources - Renewables	13	0	0	0	0	0	0	0
Transformation Sector	14	**0**	**0**	**14**	**0**	**66,884**	**140,062**	**0**
Main Activity Producer Electricity Plants	15	0	0	0	0	0	0	0
Main Activity Producer CHP Plants	16	0						0
Main Activity Producer Heat Plants	17	0						0
Autoproducer Electricity Plants	18	0						0
Autoproducer CHP Plants	19	0						0
Autoproducer Heat Plants	20	0						0
Patent Fuel Plants (Transformation)	21	0						0
Coke Ovens (Transformation)	22	0	0	0	0	0	0	0
BKB Plants (Transformation)	23	0	0	0	0	0	0	0
Gas Works (Transformation)	24	0	0	0	0	0	0	0
Blast Furnaces (Transformation)	25	0	0	0	0	0	0	0
[illegible]nation)	26	0	0	0	0	0	0	0
	27				0	0	0	0
Non-specified (Transformation)	28	0	0	0	0	0	0	0

Enter on Natural Gas Questionnaire as "From Other Sources"

For Blended Natural Gas

TABLES 2 & 3: ORIGIN/DESTINATION TRADE

Table 2 Imports

- **66 Countries of Origin**

Table 3 Exports

- **78 Countries of Destination**

TABLE 2. IMPORTS BY ORIGIN

2009

Menu

Table 2 IMPORTS BY SOURCE

Russian Federation

		Anthracite 10^3 t	Coking Coal 10^3 t	Other Bituminous Coal 10^3 t	Sub-bituminous Coal 10^3 t	Lignite/Brown Coal 10^3 t	Patent Fuel 10^3 t	Coke Oven Coke 10^3 t	Coal Tar 10^3 t	BKB/PB 10^3 t
		A	B	C	D	E	F	G	H	I
Portugal	48	0	0	0	0	0	0	0	0	0
Romania	49	0	0	0	0	0	0	0	0	0
Russian Federation	50	0	0	0	0	0	0	0	0	0
Serbia	51	0	0	0	0	0	0	0	0	0
Slovak Republic	52	0	0	0	0	0	0	0	0	0
Slovenia	53	0	0	0	0	0	0	0	0	0
South Africa	54	0	0	0	0	0	0	0	0	0
Spain	55	0	0	0	0	0	0	0	0	0
Sweden	56	0	0	0	0	0	0	0	0	0
Switzerland	57	0	0	0	0	0	0	0	0	0
Tajikistan	58	0	0	0	0	0	0	0	0	0
Turkey	59	0	0	0	0	0	0	0	0	0
Turkmenistan	60	0	0	0	0	0	0	0	0	0
Ukraine	61	0	0	0	0	0	0	0	0	0
United Kingdom	62	0	0	0	0	0	0	0	0	0
United States	63	0	0	0	0	0	0	0	0	0
Uzbekistan	64	0	0	0	0	0	0	0	0	0
Venezuela	65	0	0	0	0	0	0	0	0	0
Vietnam	66	0	0	0	0	0	0	0	0	0
Non-specified/Other	67	*244*	*225*	*23,339*	*0*	*338*	*0*	*219*	*0*	*0*
Total Imports (Trade)	68	**244**	**450**	**23,339**	**0**	**676**	**0**	**219**	**0**	**0**

TABLE 3. EXPORTS BY DESTINATION

2009 | Menu

Table 3 EXPORTS BY DESTINATION

Russian Federation

		Anthracite	Coking Coal	Other Bituminous Coal	Sub-bituminous Coal	Lignite/Brown Coal	Patent Fuel	Coke Oven Coke	Coal Tar	BKB/PB
		10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t	10^3 t
		A	B	C	D	E	F	G	H	I
New Zealand	52	0	0	0	0	0	0	0	0	0
Norway	53	0	0	0	0	0	0	0	0	0
Other Africa	54	0	0	0	0	0	0	0	0	0
Other Asia and Pacific	55	0	0	0	0	0	0	0	0	0
Other East Europe	56	0	0	0	0	0	0	0	0	0
Other Latin America	57	0	0	0	0	0	0	0	0	0
Other Near and Middle East	58	0	0	0	0	0	0	0	0	0
Pakistan	59	0	0	0	0	0	0	0	0	0
Philippines	60	0	0	0	0	0	0	0	0	0
Poland	61	0	0	0	0	0	0	0	0	0
Portugal	62	0	0	0	0	0	0	0	0	0
Romania	63	0	0	0	0	0	0	0	0	0
Russian Federation	64	0	0	0	0	0	0	0	0	0
Serbia	65	0	0	0	0	0	0	0	0	0
Slovak Republic	66	0	0	0	0	0	0	0	0	0
Slovenia	67	0	0	0	0	0	0	0	0	0
Spain	68	0	0	0	0	0	0	0	0	0
Sweden	69	0	0	0	0	0	0	0	0	0
Switzerland	70	0	0	0	0	0	0	0	0	0
Tajikistan	71	0	0	0	0	0	0	0	0	0
Thailand	72	0	0	0	0	0	0	0	0	0
Turkey	73	0	0	0	0	0	0	0	0	0
Turkmenistan	74	0	0	0	0	0	0	0	0	0
Ukraine	75	0	0	0	0	0	0	0	0	0
United Kingdom	76	0	0	0	0	0	0	0	0	0
United States	77	0	0	0	0	0	0	0	0	0
Uzbekistan	78	0	0	0	0	0	0	0	0	0
Non-specified/Other	79	*7,078*	*13,276*	*85,198*	*0*	*893*	*0*	*1,858*	*0*	*0*
Total Exports (Trade)	**80**	**7,078**	**13,276**	**85,198**	**0**	**893**	**0**	**1,858**	**0**	**0**

TABLE 4. CALORIFIC VALUES

Gross and net calorific values for:
11 primary and derived coal products

8 Uses of Coal

- **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

2009

Menu

Russian Federation

Table 4 CALORIFIC VALUES

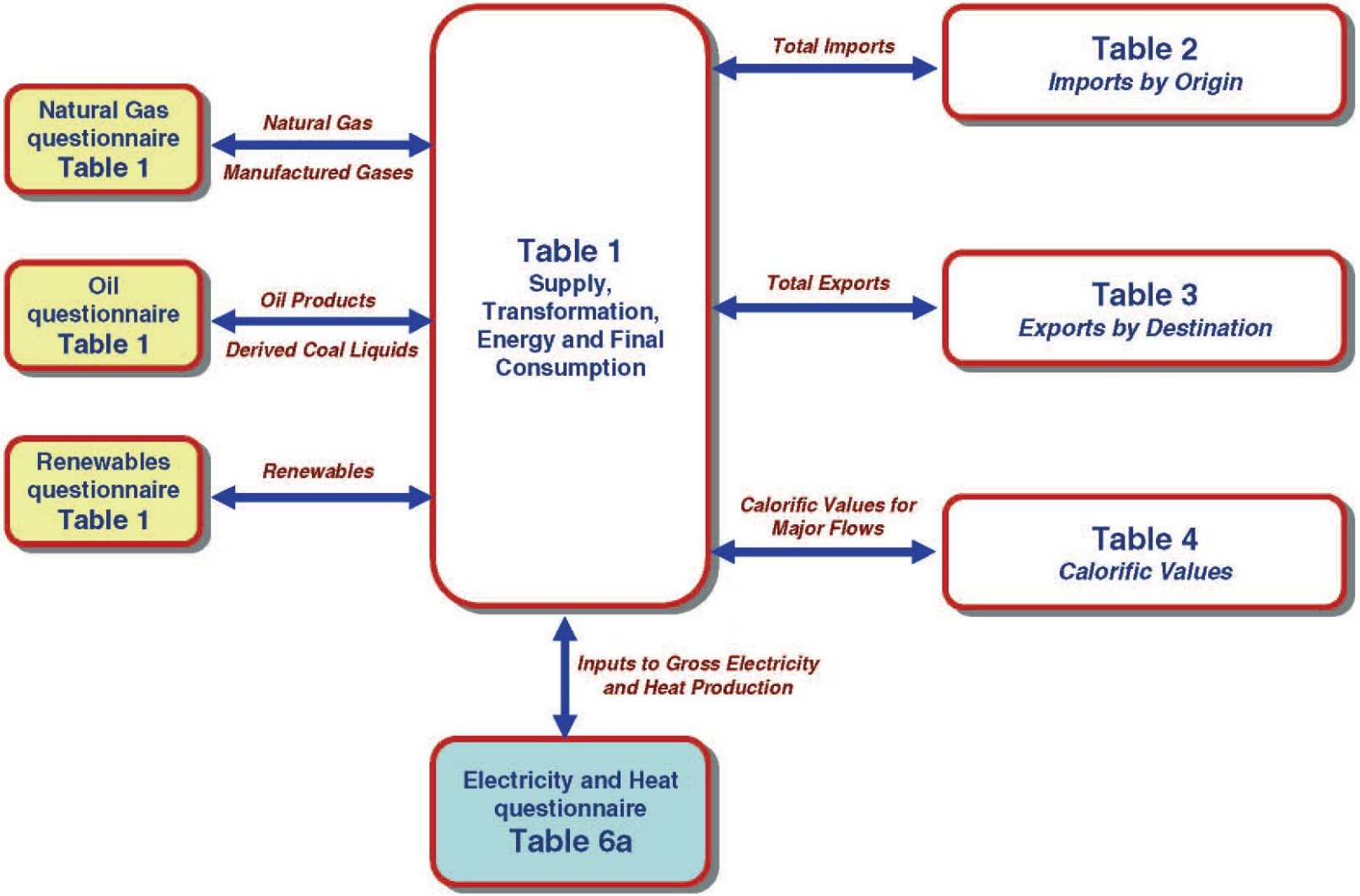
Note: The data in this table will be used by the Secretariats to obtain conversion factors for each type of coal and their different end-use

		Anthracite MJ/tonne	Coking Coal MJ/tonne	Other Bituminous Coal MJ/tonne	Sub-bituminous Coal MJ/tonne	Lignite/Brown Coal MJ/tonne	Peat MJ/tonne	Patent Fuel MJ/tonne	Coke Oven Coke MJ/tonne	Gas Coke MJ/tonne	Coal Tar MJ/tonne	BKB/PB* MJ/tonne
		A	B	C	D	E	F	G	H	I	J	K
Production	gross 1	0	0	0	0	0	0	0	0	0	0	0
	net 2	0	0	0	0	0	0	0	0	0	0	0
Imports	gross 3	0	0	0	0	0	0	0	0	0	0	0
	net 4	0	0	0	0	0	0	0	0	0	0	0
Exports	gross 5	0	0	0	0	0	0	0	0	0	0	0
	net 6	0	0	0	0	0	0	0	0	0	0	0
Used in coke ovens	gross 7	0	0	0	0	0	0	0	0	0	0	0
	net 8	0	0	0	0	0	0	0	0	0	0	0
Used in blast furnaces	gross 9	0	0	0	0	0	0	0	0	0	0	0
	net 10	0	0	0	0	0	0	0	0	0	0	0
Used in Main Activity Plants	gross 11	0	0	0	0	0	0	0	0	0	0	0
	net 12	0	0	0	0	0	0	0	0	0	0	0
Used in industry	gross 13	0	0	0	0	0	0	0	0	0	0	0
	net 14	0	0	0	0	0	0	0	0	0	0	0
For Other Uses	gross 15	0	0	0	0	0	0	0	0	0	0	0
	net 16	0	0	0	0	0	0	0	0	0	0	0

No calorific values reported at all

RELATIONSHIPS

Table Relations within the Coal Questionnaire



DATA QUALITY CHECKS

- 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
- Breaks in series
- Trade data coincides with trade partners

THE PAPER AGE IS OVER

- Internet is now the standard
- Electronic communication has replaced paper
- More user-friendly
- Time-series vs. annual tables
- Built-in checks (totals, efficiency,…)

INTERNET INTERFACE

- Easy to access and use (menu-driven)
- Enter data by hand or download file
- Records the history of changes
- Can add comments
- Can be accessed by several people
- In a secured mode
- Submit to various organisations (e.g. Eurostat for EU countries, OLADE for OLADE countries)

International Energy Agency

Energy Data Center

Home ▸ Questionnaires ▸ Checks ▸ Data transfers ▸ Status report Downloads Parameters ▸

- Notify quest. completed
- Coal ▸
  - Time series
  - Forms ▸
  - Remarks
- Electricity and heat ▸
- Natural Gas ▸
- Oil ▸
- Renewables ▸

TIME SERIES: COAL

Available Time Series

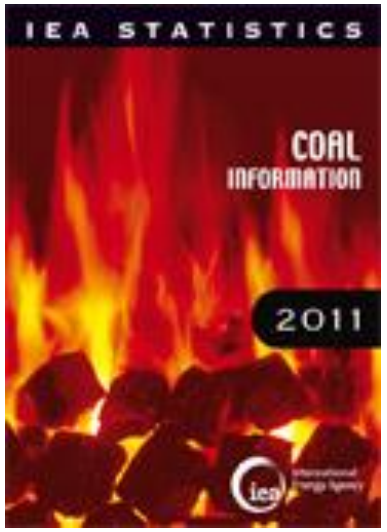
- Anthracite
- Coking Coal
- Bituminous Coal
- Sub-bituminous Coal
- Lignite/Brown Coal
- Peat
- Patent Fuel
- Coke - Oven Coke
- Gas Coke
- Coal Tar
- BKB-PB
- Gas Works Gas
- Coke Oven Gas
- Blast Furnace Gas
- Oxygen Steel Furnace Gas

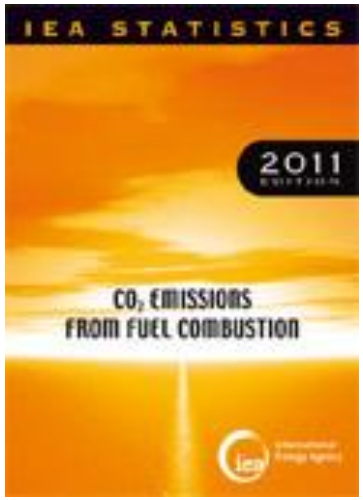
RUSSIAN DATA ISSUES

- Coal production not split between underground and surface – Table 1
- Electricity (Table 6) and coal questionnaires (Table 1) - fuel inputs for electricity and heat production differed
- Inputs and outputs of coke oven industry are not consistent – Table 1
- Inputs and outputs of blast furnace industry are not consistent – Table 1
- No detailed data for coal imports or coal exports – Tables 2 and 3
- No gross or net calorific values reported – Table 4

USES OF THE DATA

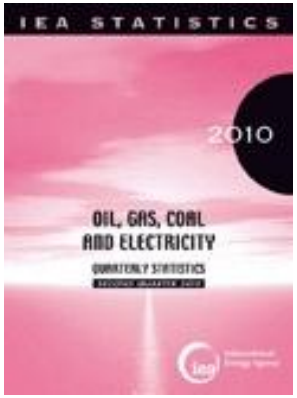
- Coal Information Book
- Electronic online files
- Energy balances
- Environmental issues
- Data support for other IEA divisions/other organizations
- IEA country reviews
- Assessing security of supply
- Making policy and business decisions





QUARTERLY COAL DATA

- **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**
  - **Taejin Park**
  - **ces@iea.org**

Thank you