



ENERGY STATISTICS IN INDONESIA

Jakarta, 18th July 2018

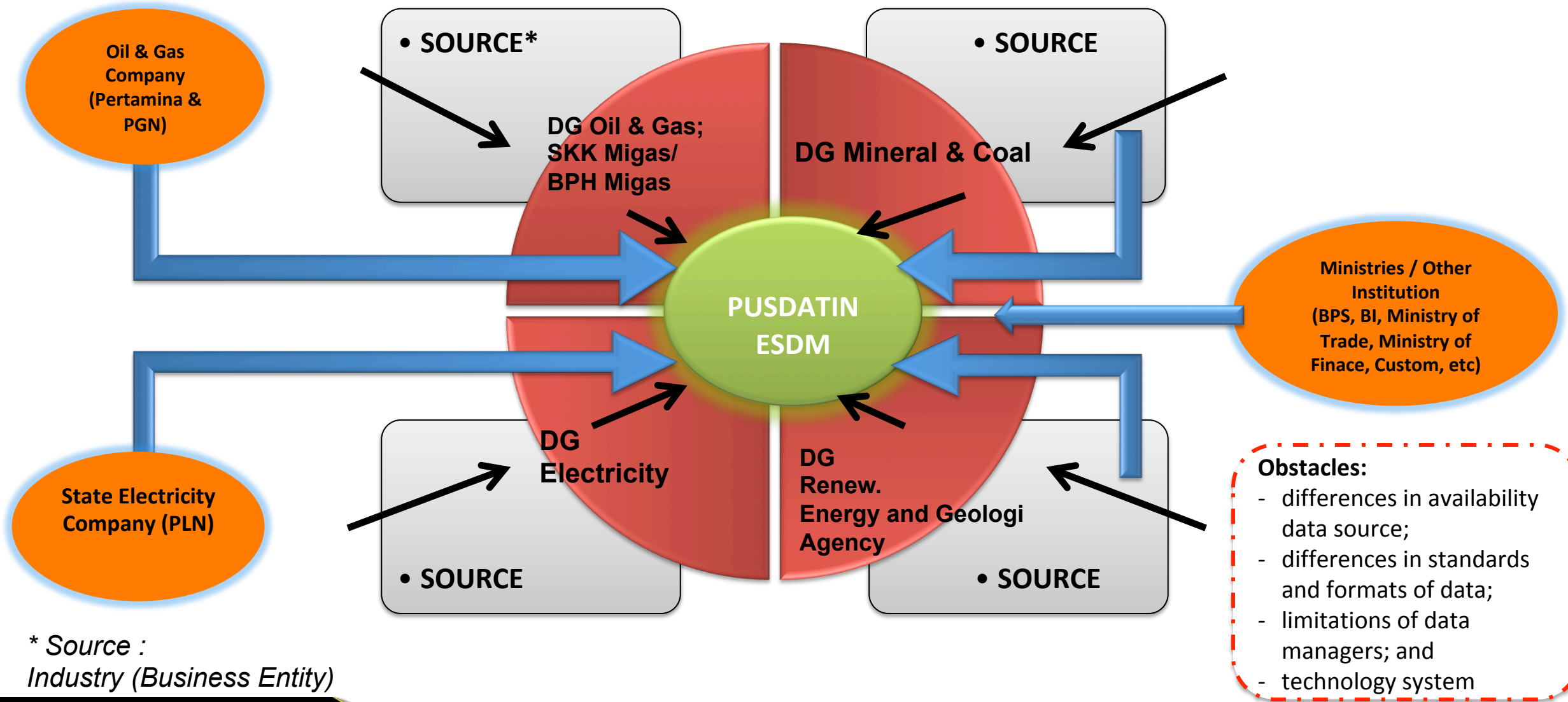
Center for Data & Information Technology on Energy & Mineral Resources
(PUSDATIN ESDM)



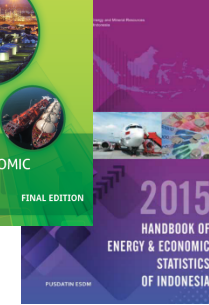
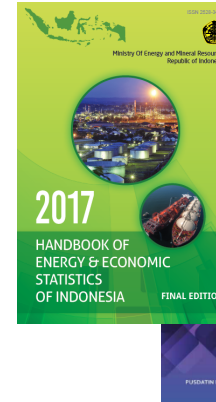
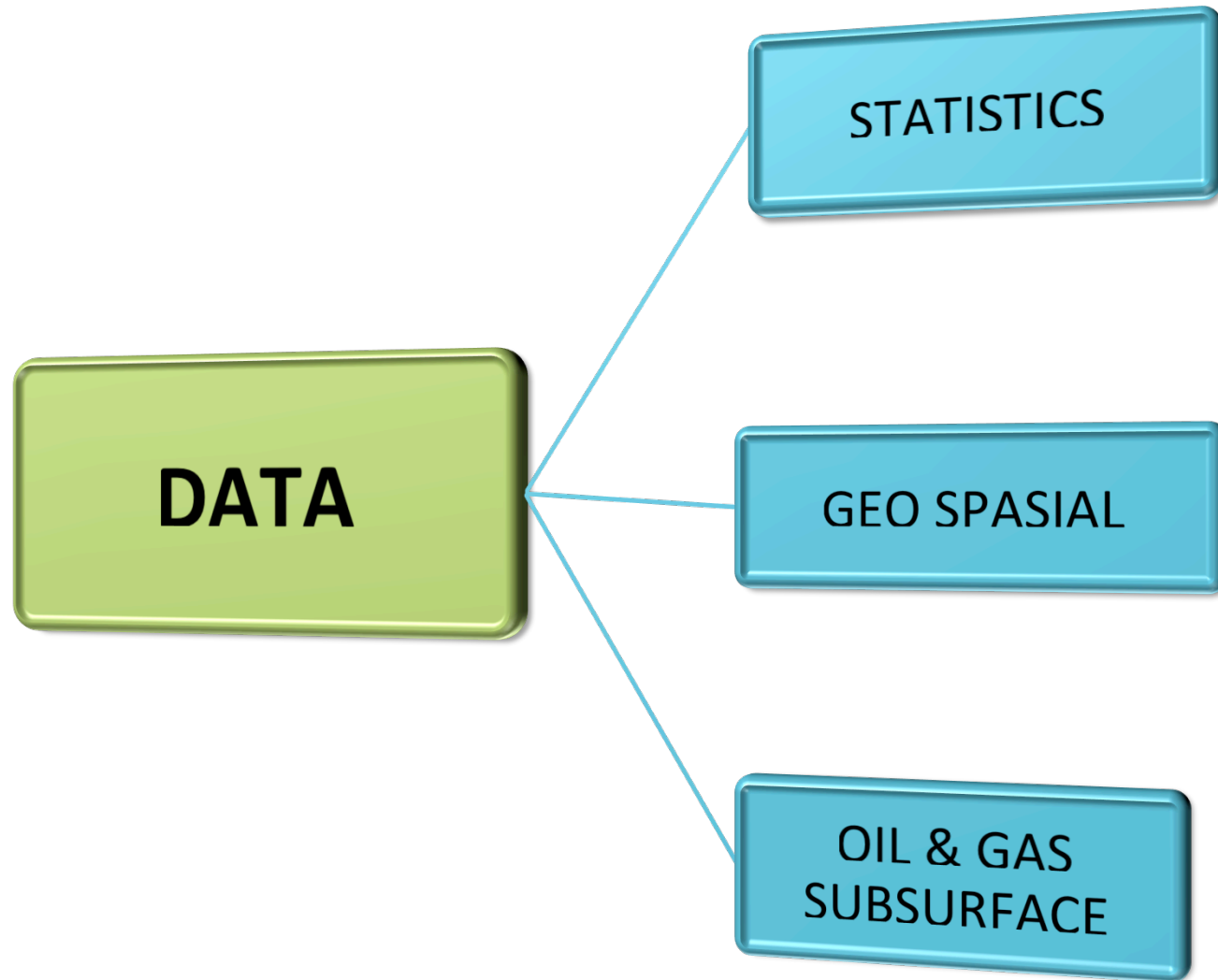
OUTLINE

- What Data We Collect? How Do We Collect?
- Statistic and Data Service
- Final Energy (useful) Data
- Challenges with data collection
- Improvement Plan in Data Collection

What Data We Collect? How Do We Collect?

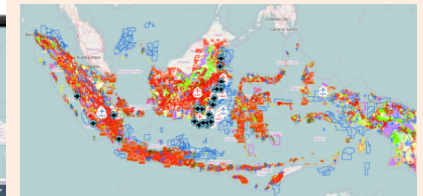
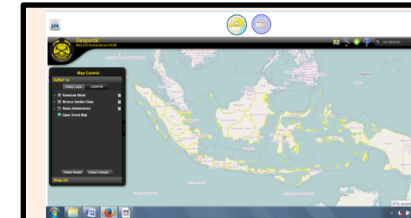
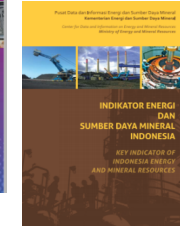


STATISTIC AND DATA SERVICES (1)



DAFTAR HARGA PERTAMAKA, PERTAMINA PLUS DAN PERTAMINA DEO Tahun 2012

Barang	Unit	Harga Pertamax	Harga Pertamina Plus	Harga Pertamina Deo
SPK 90	liter	2.300	2.300	2.300
SPK 95	liter	2.350	2.350	2.350
SPK 100	liter	2.400	2.400	2.400
SPK 105	liter	2.450	2.450	2.450
SPK 110	liter	2.500	2.500	2.500
SPK 115	liter	2.550	2.550	2.550
SPK 120	liter	2.600	2.600	2.600
SPK 125	liter	2.650	2.650	2.650
SPK 130	liter	2.700	2.700	2.700
SPK 135	liter	2.750	2.750	2.750
SPK 140	liter	2.800	2.800	2.800
SPK 145	liter	2.850	2.850	2.850
SPK 150	liter	2.900	2.900	2.900
SPK 155	liter	2.950	2.950	2.950
SPK 160	liter	3.000	3.000	3.000
SPK 165	liter	3.050	3.050	3.050
SPK 170	liter	3.100	3.100	3.100
SPK 175	liter	3.150	3.150	3.150
SPK 180	liter	3.200	3.200	3.200
SPK 185	liter	3.250	3.250	3.250
SPK 190	liter	3.300	3.300	3.300
SPK 195	liter	3.350	3.350	3.350
SPK 200	liter	3.400	3.400	3.400
SPK 205	liter	3.450	3.450	3.450
SPK 210	liter	3.500	3.500	3.500
SPK 215	liter	3.550	3.550	3.550
SPK 220	liter	3.600	3.600	3.600
SPK 225	liter	3.650	3.650	3.650
SPK 230	liter	3.700	3.700	3.700
SPK 235	liter	3.750	3.750	3.750
SPK 240	liter	3.800	3.800	3.800
SPK 245	liter	3.850	3.850	3.850
SPK 250	liter	3.900	3.900	3.900
SPK 255	liter	3.950	3.950	3.950
SPK 260	liter	4.000	4.000	4.000
SPK 265	liter	4.050	4.050	4.050
SPK 270	liter	4.100	4.100	4.100
SPK 275	liter	4.150	4.150	4.150
SPK 280	liter	4.200	4.200	4.200
SPK 285	liter	4.250	4.250	4.250
SPK 290	liter	4.300	4.300	4.300
SPK 295	liter	4.350	4.350	4.350
SPK 300	liter	4.400	4.400	4.400
SPK 305	liter	4.450	4.450	4.450
SPK 310	liter	4.500	4.500	4.500
SPK 315	liter	4.550	4.550	4.550
SPK 320	liter	4.600	4.600	4.600
SPK 325	liter	4.650	4.650	4.650
SPK 330	liter	4.700	4.700	4.700
SPK 335	liter	4.750	4.750	4.750
SPK 340	liter	4.800	4.800	4.800
SPK 345	liter	4.850	4.850	4.850
SPK 350	liter	4.900	4.900	4.900
SPK 355	liter	4.950	4.950	4.950
SPK 360	liter	5.000	5.000	5.000
SPK 365	liter	5.050	5.050	5.050
SPK 370	liter	5.100	5.100	5.100
SPK 375	liter	5.150	5.150	5.150
SPK 380	liter	5.200	5.200	5.200
SPK 385	liter	5.250	5.250	5.250
SPK 390	liter	5.300	5.300	5.300
SPK 395	liter	5.350	5.350	5.350
SPK 400	liter	5.400	5.400	5.400
SPK 405	liter	5.450	5.450	5.450
SPK 410	liter	5.500	5.500	5.500
SPK 415	liter	5.550	5.550	5.550
SPK 420	liter	5.600	5.600	5.600
SPK 425	liter	5.650	5.650	5.650
SPK 430	liter	5.700	5.700	5.700
SPK 435	liter	5.750	5.750	5.750
SPK 440	liter	5.800	5.800	5.800
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SPK 610	liter	7.500	7.500	7.500
SPK 615	liter	7.550	7.550	7.550
SPK 620	liter	7.600	7.600	7.600
SPK 625	liter	7.650	7.650	7.650
SPK 630	liter	7.700	7.700	7.700
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SPK 655	liter	7.950	7.950	7.950
SPK 660	liter	8.000	8.000	8.000
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SPK 695	liter	8.350	8.350	8.350
SPK 700	liter	8.400	8.400	8.400
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SPK 720	liter	8.600	8.600	8.600
SPK 725	liter	8.650	8.650	8.650
SPK 730	liter	8.700	8.700	8.700
SPK 735	liter	8.750	8.750	8.750
SPK 740	liter	8.800	8.800	8.800
SPK 745	liter	8.850	8.850	8.850
SPK 750	liter	8.900	8.900	8.900
SPK 755	liter	8.950	8.950	8.950
SPK 760	liter	9.000	9.000	9.000
SPK 765	liter	9.050	9.050	9.050
SPK 770	liter	9.100	9.100	9.100
SPK 775	liter	9.150	9.150	9.150
SPK 780	liter	9.200	9.200	9.200
SPK 785	liter	9.250	9.250	9.250
SPK 790	liter	9.300	9.300	9.300
SPK 795	liter	9.350	9.350	9.350
SPK 800	liter	9.400	9.400	9.400
SPK 805	liter	9.450	9.450	9.450
SPK 810	liter	9.500	9.500	9.500
SPK 815	liter	9.550	9.550	9.550
SPK 820	liter	9.600	9.600	9.600
SPK 825	liter	9.650	9.650	9.650
SPK 830	liter	9.700	9.700	9.700
SPK 835	liter	9.750	9.750	9.750
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SPK 845	liter	9.850	9.850	9.850
SPK 850	liter	9.900	9.900	9.900
SPK 855	liter	9.950	9.950	9.950
SPK 860	liter	10.000	10.000	10.000
SPK 865	liter	10.050	10.050	10.050
SPK 870	liter	10.100	10.100	10.100
SPK 875	liter	10.150	10.150	10.150
SPK 880	liter	10.200	10.200	10.200
SPK 885	liter	10.250	10.250	10.250
SPK 890	liter	10.300	10.300	10.300
SPK 895	liter	10.350	10.350	10.350
SPK 900	liter	10.400	10.400	10.400
SPK 905	liter	10.450	10.450	10.450
SPK 910	liter	10.500	10.500	10.500
SPK 915	liter	10.550	10.550	10.550
SPK 920	liter	10.600	10.600	10.600
SPK 925	liter	10.650	10.650	10.650
SPK 930	liter	10.700	10.700	10.700
SPK 935	liter	10.750	10.750	10.750
SPK 940	liter	10.800	10.800	10.800
SPK 945	liter	10.850	10.850	10.850
SPK 950	liter	10.900	10.900	10.900
SPK 955	liter	10.950	10.950	10.950
SPK 960	liter	11.000	11.000	11.000
SPK 965	liter	11.050	11.050	11.050
SPK 970	liter	11.100	11.100	11.100
SPK 975	liter	11.150	11.150	11.150
SPK 980	liter	11.200	11.200	11.200
SPK 985	liter	11.250	11.250	11.250
SPK 990	liter	11.300	11.300	11.300
SPK 995	liter	11.350	11.350	11.350
SPK 1000	liter	11.400	11.400	11.400

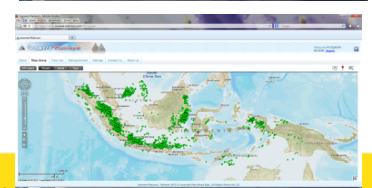
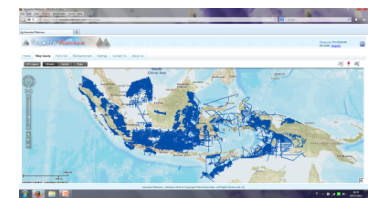
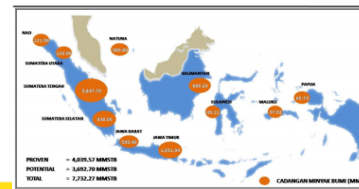


Geoportal
www.geoportal.esdm.go.id

PETA LOKASI PENYEBARAN SUMBER DAYA DAN CADANGAN BATUBARA STATUS DESEMBER (2011)



CADANGAN MINYAK BUMI

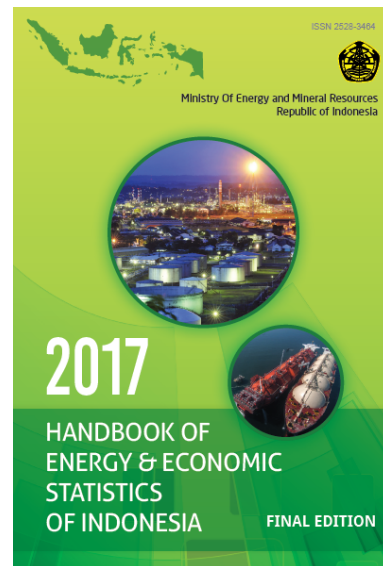


STATISTIC AND DATA SERVICES (2)

STATISTICS

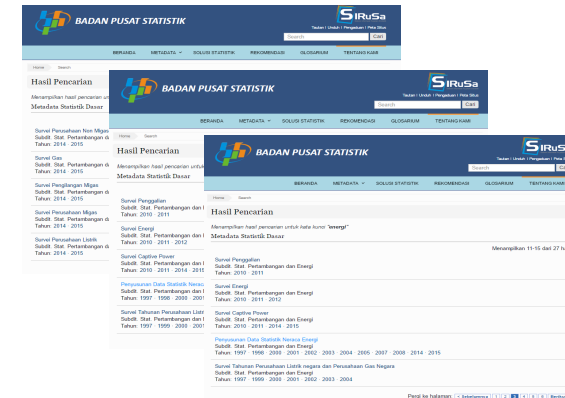
• Publications of MEMR

- Data of energy production → complete
- Data of energy consumption → based on sales



• Publications of Central Bureau of Statistics

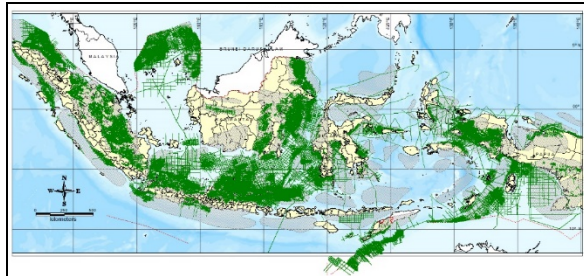
- Data of energy production → use secondary data
- Data of energy consumption → based on survey (survey of village potentials, national socio-economic survey, industry survey)



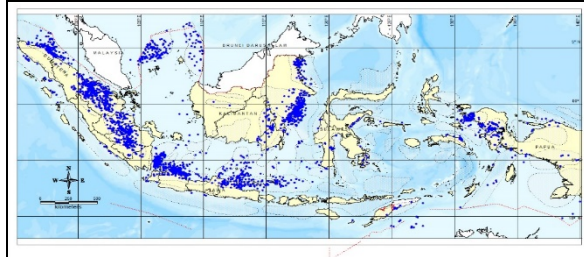
- Data of biomass consumption in household and industry is obtained from Indonesia Energy Balance

STATISTIC AND DATA SERVICES (3)

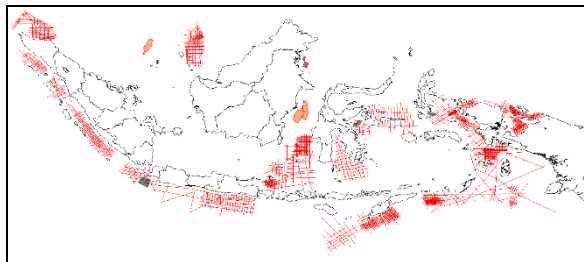
SUBSURFACE DATA for upstream industry (oil & gas)



Seismics Map from
Oil & Gas Companies



Oil & Gas Well Map



Seismics Map from
Survey Companies
(Speculative Survey)

STORAGE



Round Tape



Square Tape



Map & Seismik
Hardcopy



Document



Core & Cutting



Digital Storage

STATISTIC AND DATA SERVICES (4)

ENERGY CONSUMPTION / END USE

INDUSTRY	CURRENT - Total energy consumption for each subsector - Added value for each subsector - Total production	IDEAL - Total energy consumption for each process - Added value for each subsector - Production for main product (exclude side product)
COMERICAL	CURRENT - Total electricity consumption	IDEAL - Total energy consumption - Total surface area - Total buildings
HOUSEHOLD	CURRENT - Total electricity consumption - Total dwellers	IDEAL - Total energy consumption (include electricity) - Total surface area - Total dwellers
TRANSPORTATION	CURRENT - Total fuel sales for each type of transport (land, water, and air) - Total vehicles for each type of transport	IDEAL - Total fuel sales for each type of transport (land, water, and air) - Total vehicles for each type of transport - Total passengers/freights for each vehicle - Total miles for each vehicle

FINAL ENERGY (Useful) DATA

Current: Sales Data Approach



Fuel

- Sales data from Pertamina
- Proportion approach from survey data on fuel consumption per sector



Natural Gas and LPG

- Data of natural gas sales per sector from DG of Oil and Gas
- City gas sales data from PGN
- LPG sales data from Pertamina



Coal and Briquette

- Sales data taken from coal mining company report to DG of Mineral and Coal (for industrial sector)



Biofuel

- Sales data from Pertamina, but has been changed to use biofuel distribution data from BPH Migas since 2016



Biomass

- Based on survey → survey of village potentials, national socio-economic survey, industry survey



Electricity

- Sales data from PLN

Ideal: End Use Consumption Data (census or survey)

The Challenges in Data Collection

1. Procedure: Integrating Data Gathering to Formal Business Process

2. Data Management

- Standardized common data format and source
- Integrating Data Gathering to Industry
- Dedicated Person in Charge (PIC), at any level Ministry and Regional as well as Energy Manager in Industry/Building

3. System

- System and database
- Data Warehouse



Improvement Plan in Data Collection

1. Preparing the regulation that could enforce data submission from the units within the ministry and aligning data availability and quality with other government institutions.
2. Providing an online reporting platform and Electronic Data Interchange so that the units could submit their data to Pusdatin easily.
 - ✓ The platform is being integrated between working units within the ministry and Pusdatin as the implementation of IT Masterplan 2017.
3. Looking for the best practices from other countries or international organizations that could increase the quality of human resources and the methodology in data management.
 - ✓ Participating in workshops, training, or meetings held by international energy organizations.

*Thank
you*

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KEMENTERIAN ESDM
REPUBLIK INDONESIA

Ministry of Energy and Mineral Resources
Republic of Indonesia

Medan Merdeka Selatan Road No. 18, Jakarta, Indonesia



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Sumber Daya Mineral



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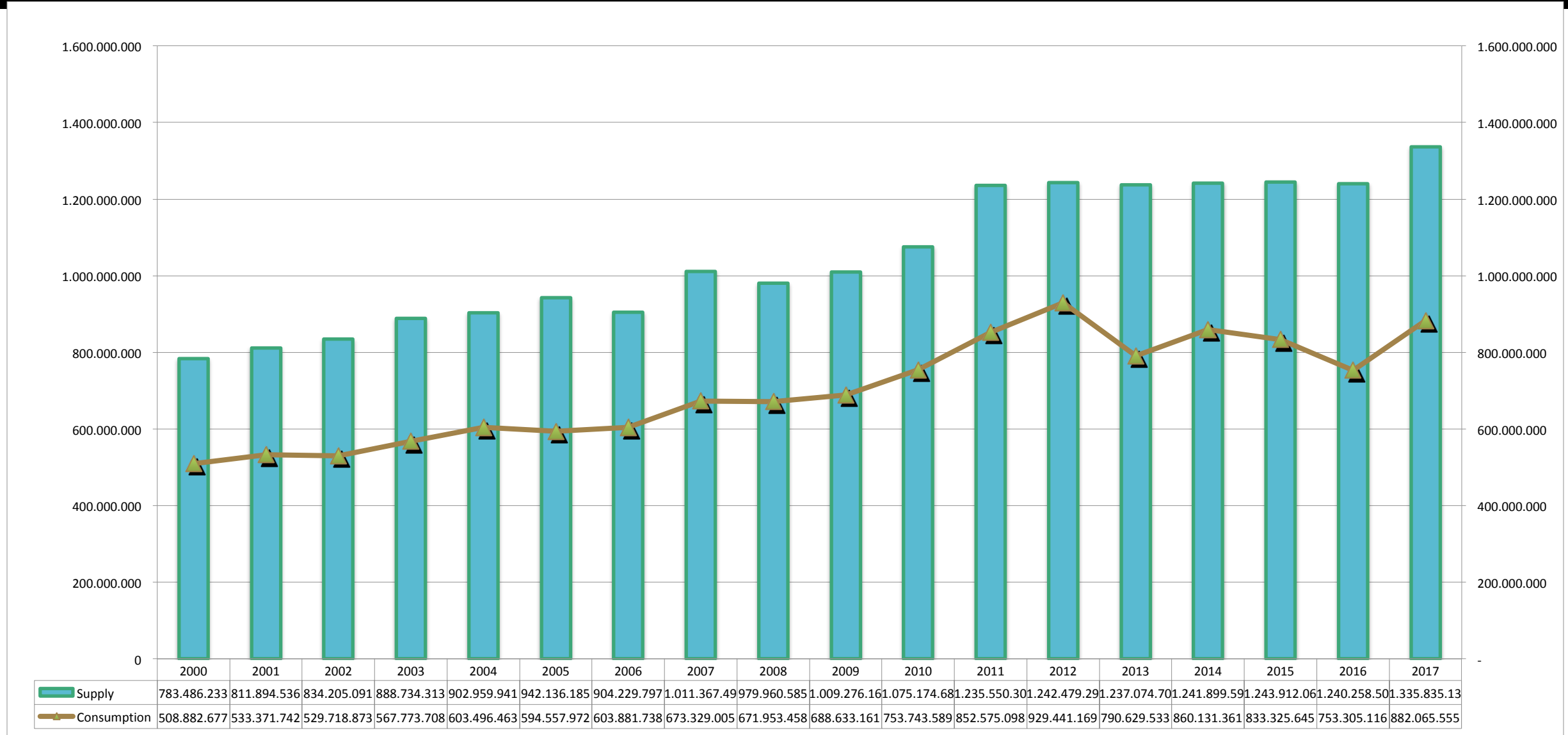


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Kementerian ESDM

SUPPLY-DEMAND ENERGY

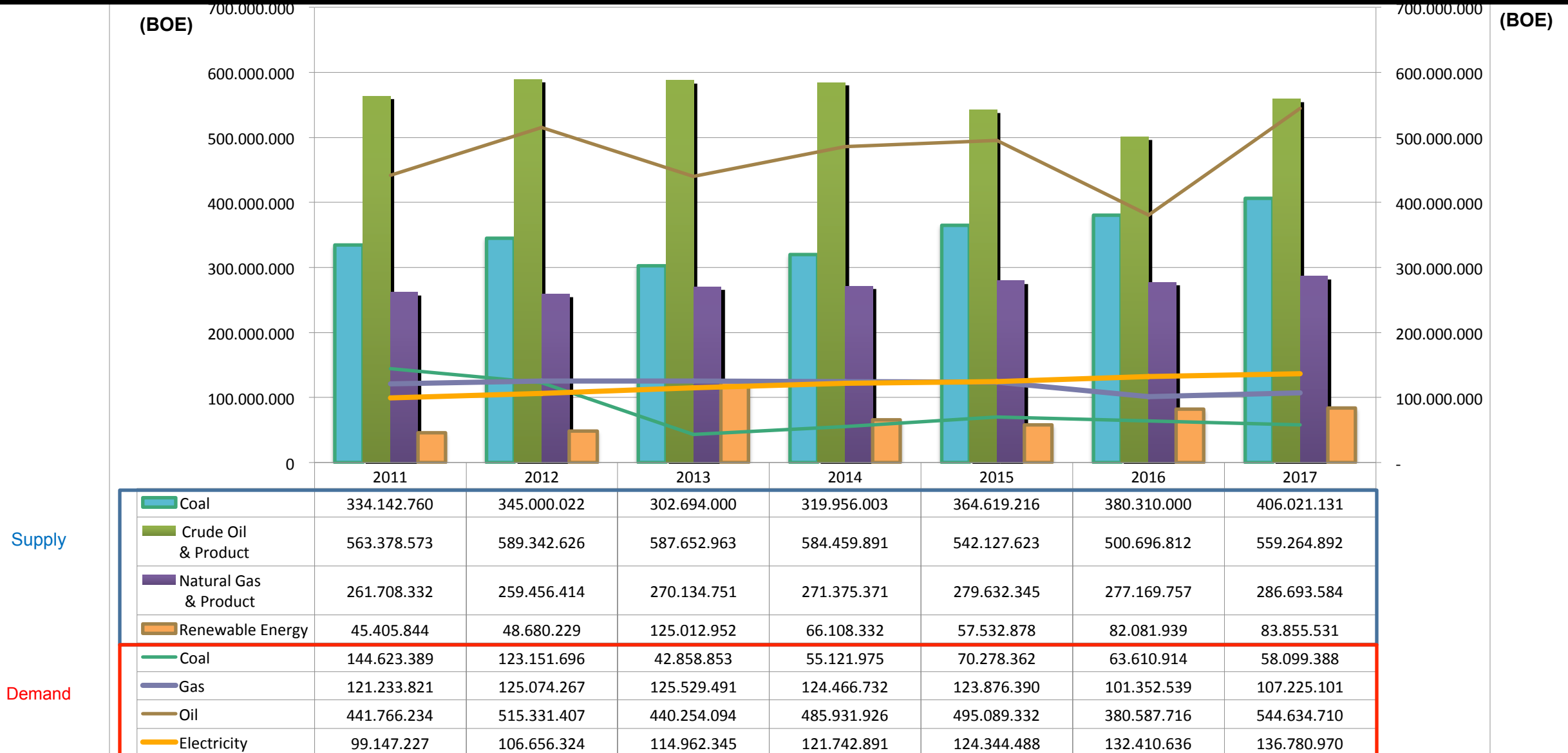


Status : Mei 2018

Source: Draft HEESI 2018



SUPPLY-DEMAND ENERGY BY COMODITIES

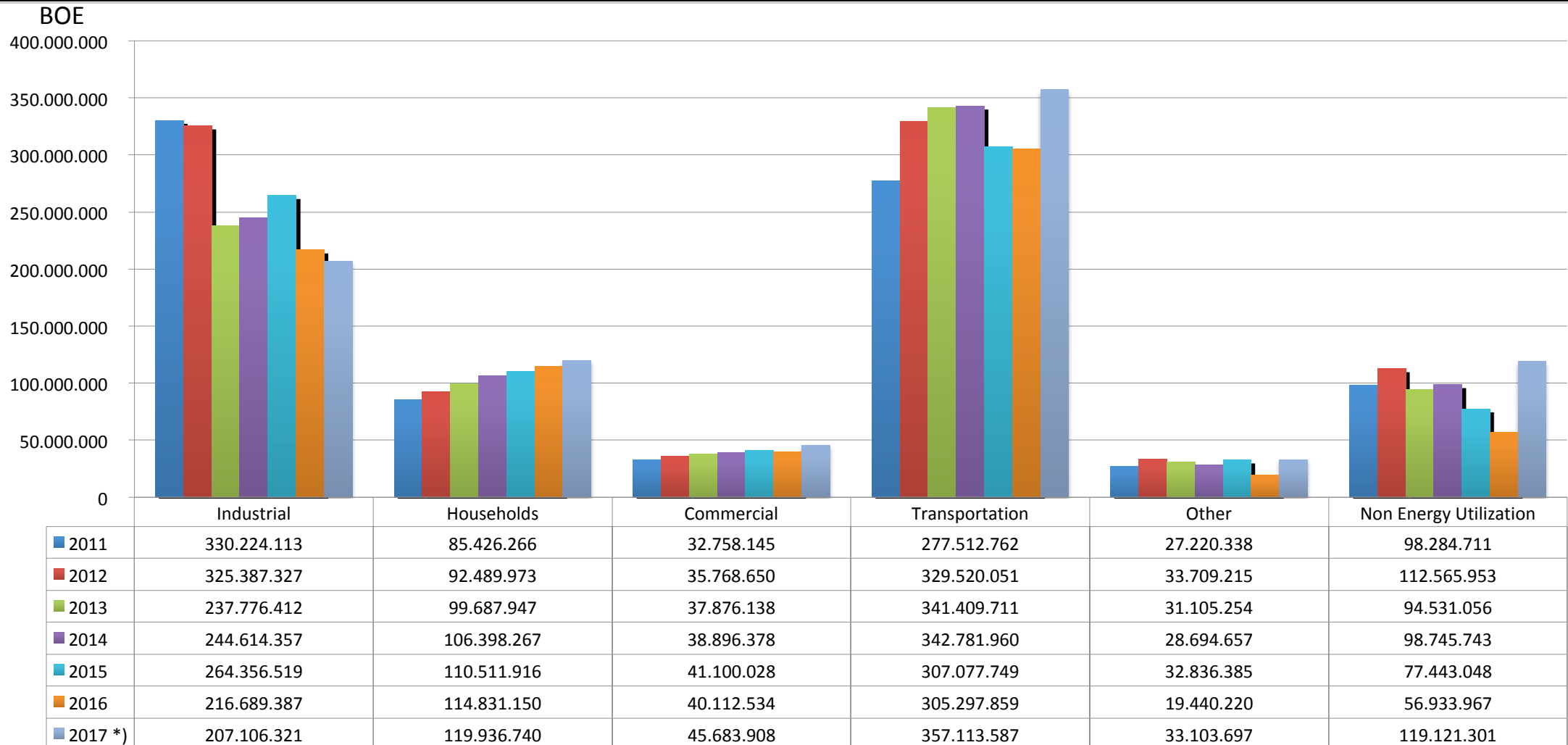


Status: Mei 2018

Source: Draft HEESI 2018



ENERGY CONSUMPTION BY SECTOR



Note: Final energy consumption excluded biomass
Status : Mei 2018

	2012	2013	2014	2015	2016	2017*
Final Energy Consumption	929.441.169	842.386.518	860.131.361	833.325.645	753.305.116	882.065.555

Source: Draft HEESI 2018



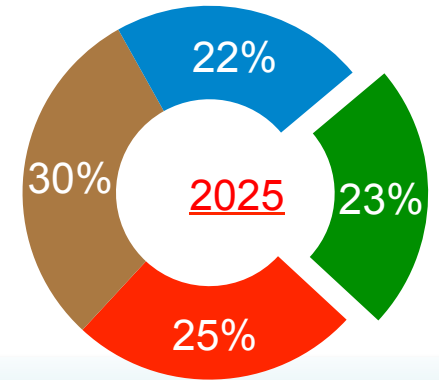
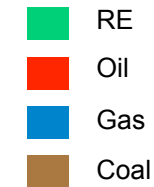
ENERGY MIX

By Type (excluded Biomass)

Type of Energy	2011	2012	2013	2014	2015	2016	2017
Oil	46,77	47,43	48,13	47,06	43,58	40,37	41,87
Coal	27,74	27,77	24,79	25,76	29,31	30,66	30,39
Gas	21,73	20,88	22,12	21,85	22,48	22,35	21,46
Hydropower	2,32	2,35	3,15	3,06	2,83	3,63	3,51
Geothermal	1,26	1,22	1,25	1,30	1,31	1,41	1,52
Biofuel	0,19	0,35	0,56	0,96	0,48	1,57	1,25

(%)

Bauran
EBT

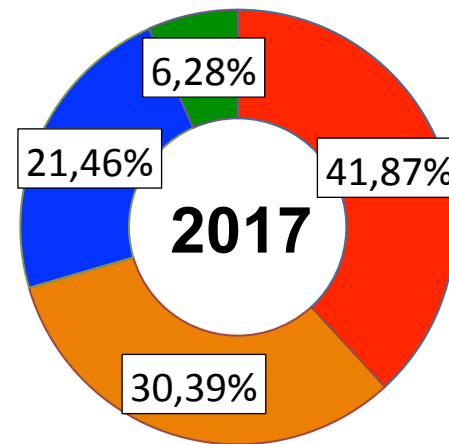
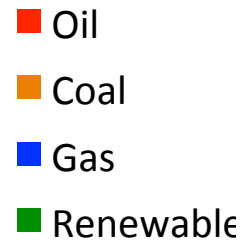
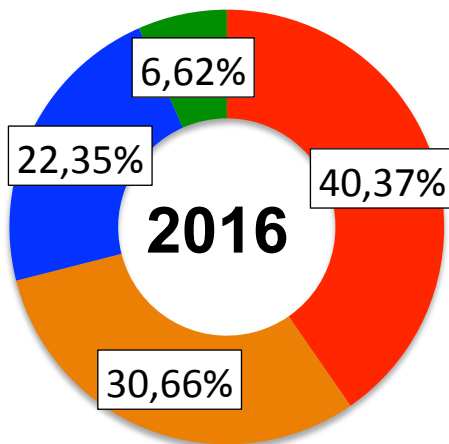


Target 2025

Oil < 25 % Coal > 30 %
Gas > 22% Renewable Energy > 23 %

Status : Mei 2018

Source: Draft HEESI 2018



ENERGY BALANCE

Thousand BOE

	Hydro Power	Geothermal	Biomass	Coal	Briquette	Natural Gas	Crude Oil	Petroleum Fuel	Biofuel	LPG	Other Petroleum Product	Electricity	LNG	Total
1Primary Energy Supply	46.914	20.260	306.608	406.021	0	410.517	330.138	185.115	16.682	44.012	-88.926	686	-123.824	1.554.203
a. Production	46.914	20.260	306.608	1.937.242	0	459.346	292.374	0	22.163	0	0	0	0	3.084.906
b. Import	0	0		19.036	0	0	135.027	163.144	0	46.561	5.981	686	0	370.434
c. Export	0	0		-1.250.513	0	-48.828	-102.678	-3.322	-1.215	-3	-94.908	0	-123.824	-1.625.291
d. Stock Change	0	0		-299.744	0	0	5.416	25.293	-4.265	-2.546	0	0	0	-275.847
2Energy Transformation	-46.914	-20.260	-358	-347.972	0	-286.607	-323.665	245.149	-16.682	17.287	178.119	156.082	181.685	-264.136
a. Refinery	0	0	0	0	0	-4.457	-323.665	262.588	0	7.377	178.119	0	0	119.962
b. Gas Processing	0	0	0	0	0	-188.803	0	0	0	9.910	0	0	181.685	2.792
c. Coal Processing Plant	0	0	0	0	0	0	0	0	0	0	0	0	0	0
d. Biofuel Blending								16.682	-16.682					0
e. Power Plant	-46.914	-20.260	-358	-347.972	0	-93.346	0	-34.121	0	0	0	156.082	0	-386.890
- State Own Utility (PLN)	-31.285	-7.435	0	-229.790	0	-80.294	0	-34.102	0	0	0	111.214	0	-271.693
- Independent Power Producer (Non-PLN)	-15.629	-12.824	-358	-118.183	0	-13.052	0	-19	0	0	0	44.868	0	-115.197
3Own Use and Losses	0	0	0	0	50	-42.408	-6.473	-796	0	0	0	-19.236	-57.861	-126.724
a. During Transformation	0	0	0	0	50	-4.457	-6.473	0	0	0	0	-6.066	0	-16.946
b. Energy Use/ Own Use	0	0	0	0	0	-37.951	0	0	0	0	0	0	0	-37.951
c. Transmission & Distribution	0	0	0	0	0	0	0	-796	0	0	0	-13.170	-57.861	-71.827
4Final Energy Supply	0	0	306.250	58.049	50	81.502	0	429.468	0	61.299	89.192	137.532	0	1.163.343
5Statistic Discrepancy	0	0	0	0	0	-25.723	0	0	0	0	0	751	0	-24.972
6Final Energy Consumption	0	0	306.250	58.049	50	107.225	0	429.468	0	61.299	89.192	136.781	0	1.188.315
a. Industry	0	0	41.946	58.049	50	75.785	0	28.052	0	888	0	44.282	0	249.053
b. Transportation	0	0	0	0	0	102	0	356.867	0	0	0	144	0	357.114
c. Household	0	0	262.970,280	0	0	137	0	3.114	0	58.783	0	57.902	0	382.907
d. Commercial	0	0	1.333	0	0	1.272	0	8.332	0	1.628	0	34.452	0	47.017
e. Other Sector	0	0	0	0	0	0	0	33.104	0	0	0	0	0	33.104
7Non Energy Use	0	0	0	0	0	29.929	0	0	0	0	89.192	0	0	119.121

Status : Mei 2018

Source: Draft HEESI 2018

