



National Energy Data Lao PDR

Khonetavanh DOUANGCHANH

Technical Officer

Department of Energy Policy and Planning,

Ministry of Energy and Mines, Lao PDR

21-23 November 2017, Kuala Lumpur, Malaysia

Contents

- I. Background
- II. Existing Energy Data
- III. Data Collection
- IV. Challenges

I. Background

- Lao Energy Data was collected and surveyed by the Institute of Energy Economics, Japan (IEEJ) in 2010 from 1990-2015.
- The data includes Electricity, Biomass (Fuel Wood & Charcoal), Coal (Anthracite & Lignite), Renewable Energy (Solar), Oil and LPG.
- In June 2017, the Economic Research Institute for ASEAN and East Asia (ERIA) supports Lao PDR to validate the existing data and conduct the survey on Energy Consumption and will public the Energy Statistic from 2000-2015 in 2018.

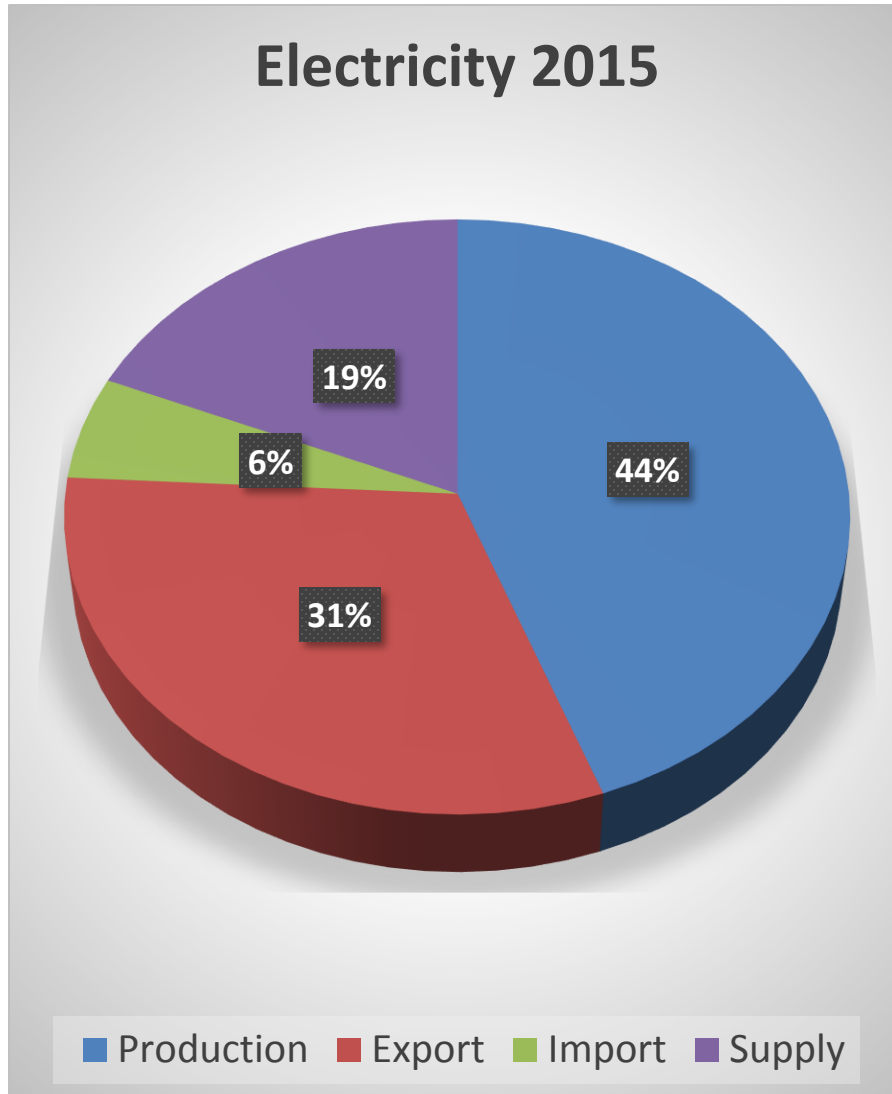
II. Existing Energy Data

1. Electricity Data
2. Biomass Data (Fuel Wood & Charcoal)
3. Coal Data (Anthracite & Lignite)
4. Renewable Energy Data (Small Hydro & Solar)
5. Oil and Gas

1. Electricity Data (KWh)

Year	Production	Export	Import	Supply	Consumption	Losses
2000	3,438.38	2,792.84	180.17	825.71	639.86	185.85
2001	3,653.66	2,871.41	183.80	966.05	710.33	255.72
2002	3,604.11	2,798.34	200.80	1,006.56	766.74	239.83
2003	3,178.20	2,284.64	229.34	1,122.91	883.74	239.17
2004	3,347.62	2,424.69	277.59	1,200.52	902.76	297.76
2005	3,509.41	2,505.99	329.48	1,332.90	1,011.06	321.83
2006	3,594.97	2,487.40	631.12	1,738.69	1,406.07	332.62
2007	3,373.60	2,230.40	793.45	1,936.65	1,615.79	320.86
2008	3,717.00	2,315.40	844.51	2,246.11	1,915.69	330.42
2009	3,365.74	1,920.82	1,175.14	2,620.06	2,257.65	362.41
2010	8,449.01	6,646.49	1,209.70	3,012.22	2,440.73	571.48
2011	12,968.90	10,668.40	904.30	3,204.80	2,555.72	649.08
2012	13,056.83	10,363.08	1,329.09	4,022.84	3,074.96	947.88
2013	15,510.40	12,494.02	1,271.65	4,288.04	3,380.96	907.08
2014	15,275.20	11,936.20	1,559.14	4,898.14	3,791.69	1,106.45
2015	16,302.14	11,548.70	2,049.83	6,803.27	4,238.60	2,564.67

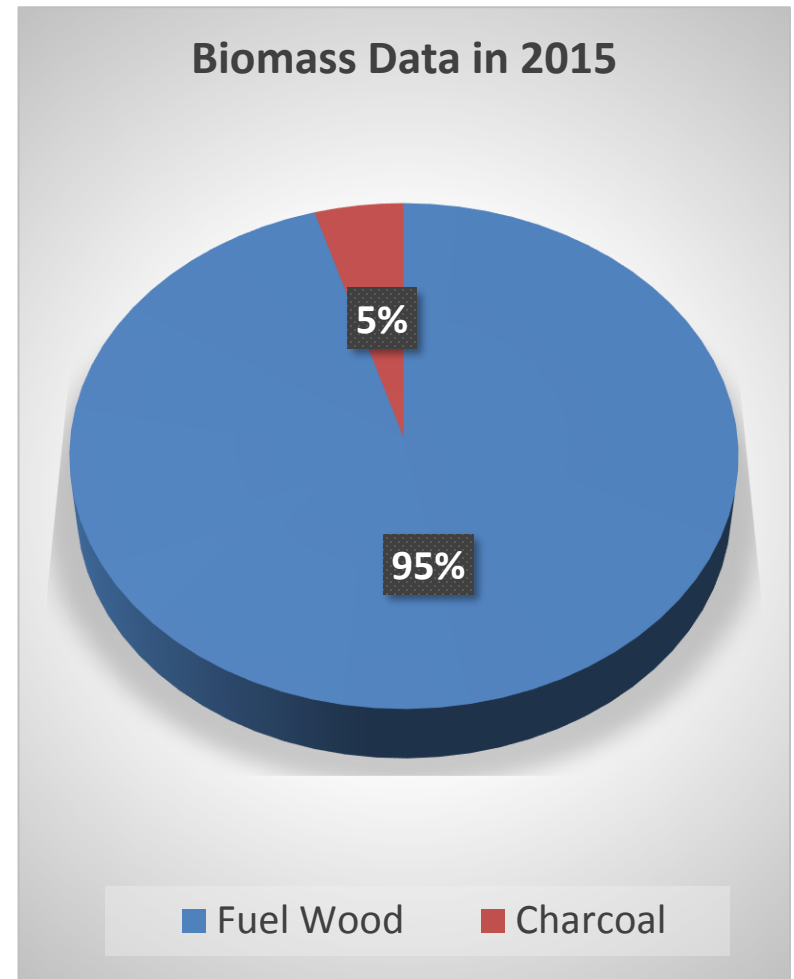
Electricity Data 2015



- **44% of Production are from:**
 - Hydro 37.89%,
 - Biomass 0.01%,
 - Power Plant 6.1%.
- **31% of Export is export to:**
 - Thailand 30.95%
 - Cambodia 0.05%
- **6% of Import is import from:**
 - Thailand 5.12%,
 - Vietnam 0.14%,
 - China 0.74%.
- **19% of Supply:** which 11.84% is used for consumption and 7.16% was loosed.
 - **11.84% of Consumption is used in:**
 - Industry 4.88%,
 - residential 4.45%,
 - commercial 2.42%
 - agriculture 0.09%.

2. Biomass Data (KTon)

Year	Fuel Wood	Charcoal
2000	3,298.48	102.45
2001	3,377.24	104.81
2002	3,457.87	107.22
2003	3,540.43	109.68
2004	3,624.96	112.20
2005	3,711.51	114.78
2006	3,800.13	117.42
2007	4,119.68	130.38
2008	4,475.96	153.88
2009	4,461.51	183.05
2010	4,371.40	185.83
2011	4,281.29	188.61
2012	4,148.57	191.30
2013	4,131.08	193.48
2014	4,181.17	199.28
2015	4,233.99	205.07



Fuel Wood (KTon)

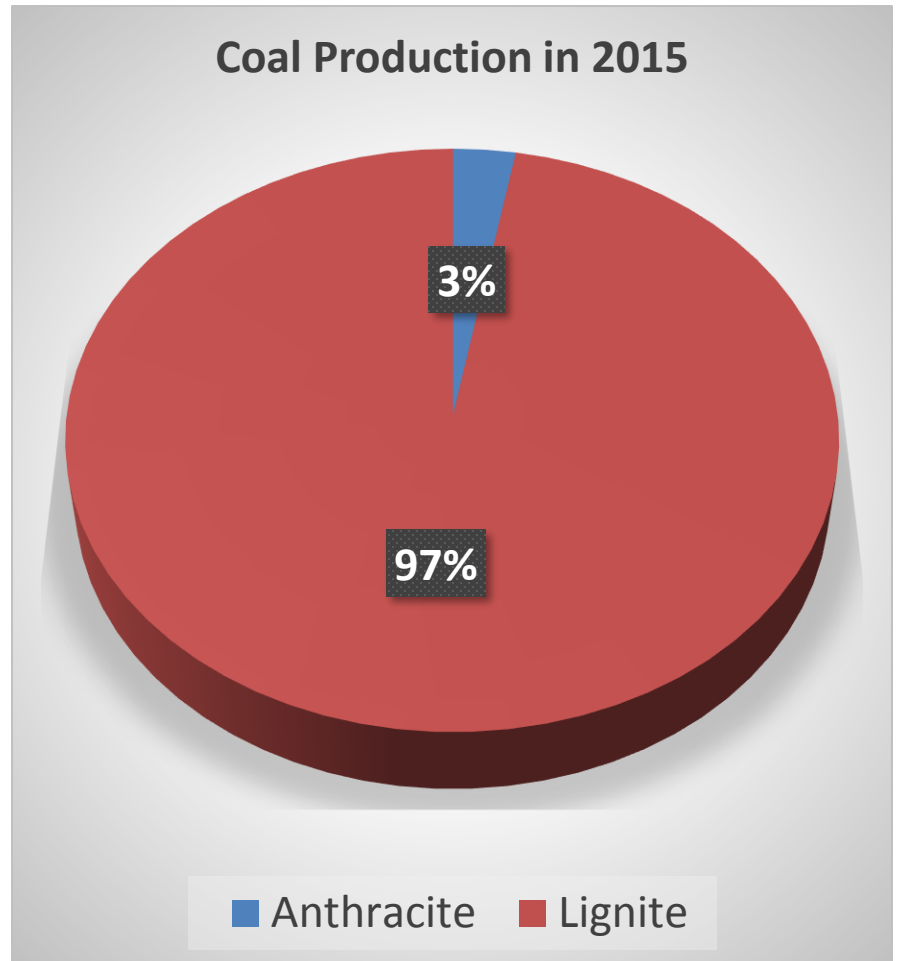
Year	Production	Consumption			
		Commercial	Residential	Industry	Charcoal Factory
2000	3,298.48	419.72	2,345.51	123.45	409.80
2001	3,377.24	429.80	2,401.81	126.41	419.22
2002	3,457.87	440.11	2,459.45	129.44	428.86
2003	3,540.43	450.67	2,518.48	132.55	438.73
2004	3,624.96	461.49	2,578.92	135.73	448.82
2005	3,711.51	472.57	2,640.81	138.99	459.14
2006	3,800.13	483.91	2,704.19	142.33	469.70
2007	4,119.68	522.81	2,921.58	153.77	521.52
2008	4,475.96	560.92	3,134.54	164.98	615.53
2009	4,461.51	541.87	3,028.08	159.37	732.19
2010	4,371.40	527.16	2,945.89	155.05	743.31
2011	4,281.29	512.45	2,863.69	150.72	754.43
2012	4,148.57	497.64	2,781.41	104.29	765.22
2013	4,131.08	502.09	2,699.48	155.60	773.91
2014	4,181.17	507.85	2,726.96	149.25	797.10
2015	4,233.99	513.61	2,754.19	145.90	820.29

Charcoal (KTon)

Year	Production	Consumption	
		Residential	Commercial
2000	102.45	49.91	52.54
2001	104.81	51.06	53.75
2002	107.22	52.23	54.98
2003	109.68	53.43	56.25
2004	112.20	54.66	57.54
2005	114.78	55.92	58.86
2006	117.42	57.21	60.22
2007	130.38	63.52	66.86
2008	153.88	74.97	78.91
2009	183.05	89.18	93.87
2010	185.83	90.53	95.30
2011	188.61	91.89	96.72
2012	191.30	93.19	98.12
2013	193.48	90.43	103.04
2014	199.28	91.45	107.83
2015	205.07	92.32	112.75

3. Coal Data (Ton)

Year	Anthracite	Lignite
2000	15.29	214.09
2001	19.85	227.11
2002	31.42	233.92
2003	38.31	252.82
2004	46.47	300
2005	50.5	320
2006	62	342.42
2007	75	381.718
2008	104.78	399.273
2009	111.947	456.08162
2010	211.721	521.622
2011	225	620.552
2012	232.75	708.593
2013	245	810
2014	257.25	911
2015	135.518	4657.67



Anthracite

Year	Production	Export	Total Supply	Consumption		Total Demand
				Industry	Not eleswhere specified	
2000	15.29	-	15.29	15.29	-	15.29
2001	19.85	-	19.85	19.85	-	19.85
2002	31.42	-	31.42	31.42	-	31.42
2003	38.31	-	38.31	38.31	-	38.31
2004	46.47	-	46.47	46.47	-	46.47
2005	50.50	-	50.50	50.50	-	50.50
2006	62.00	-	62.00	62.00	-	62.00
2007	75.00	-	75.00	71.07	3.93	75.00
2008	104.78	-	104.78	84.09	20.69	104.78
2009	111.95	-	111.95	93.34	18.60	111.95
2010	211.72	-	211.72	114.49	97.23	211.72
2011	225.00	-	225.00	125.21	99.79	225.00
2012	232.75	15.57	217.18	130.58	86.60	217.18
2013	245.00	45.00	200.00	135.02	64.98	200.00
2014	257.25	54.46	202.79	140.77	62.02	202.79
2015	135.52	-	135.52	107.87	27.65	135.52

Lignite

Year	Production	Export	Total Supply	Consumption			Total Demand
				Power Plant	Industry	Not eleswhere specified	
2000	214.09	214.09	-	-	-	-	-
2001	227.11	227.11	-	-	-	-	-
2002	233.92	233.92	-	-	-	-	-
2003	252.82	252.82	-	-	-	-	-
2004	300.00	300.00	-	-	-	-	-
2005	320.00	320.00	-	-	-	-	-
2006	342.42	319.24	23.18	-	-	23.18	23.18
2007	381.72	381.72	-	-	-	-	-
2008	399.27	379.27	20.00	-	-	20.00	20.00
2009	456.08	399.56	56.52	-	35.56	20.96	56.52
2010	521.62	445.04	76.59	-	46.59	30.00	76.59
2011	620.55	465.04	155.52	-	49.79	105.73	155.52
2012	708.59	497.67	210.93	-	50.45	160.48	210.93
2013	810.00	200.00	610.00	-	55.12	554.88	610.00
2014	911.00	254.30	656.70	-	67.78	588.92	656.70
2015	4,657.67	-	4,657.67	3,817.00	83.35	757.32	4,657.67

4. Renewable Energy Data

- Small Hydropowers (>15 MW) are considered to be renewable energy but they are included in Electricity Data mentioned above;
- Solar in rural areas (off-grid);
- Solar (on-grid) operated in February 2017 (3MW), July 2017 (7MW);

5. Oil and LPG

Gasoline

Year	Import	Consumption Transportation	Balance	
			KL	%
2000	101,675.93	100,475.93	1,200.00	1%
2001	102,439.00	100,439.00	2,000.00	2%
2002	108,002.00	107,002.00	1,000.00	1%
2003	112,200.00	110,200.00	2,000.00	2%
2004	119,879.07	117,879.07	2,000.00	2%
2005	129,355.53	124,300.53	5,055.00	4%
2006	143,473.26	134,653.56	8,819.70	6%
2007	152,502.03	152,502.03	-	0%
2008	159,454.81	159,454.81	-	0%
2009	178,296.40	155,117.87	23,178.53	13%
2010	178,296.40	152,885.10	25,411.30	14%
2011	166,441.71	144,804.29	21,637.42	13%
2012	159,626.82	139,559.36	20,067.45	13%
2013	219,250.60	215,649.61	3,600.99	2%
2014	212,949.58	210,415.81	2,533.77	1%
2015	234,198.67	223,318.45	10,880.22	5%

Fuel Oil

Year	Import	Consumption Industry	Balance	
			KL	%
2000	3,875.00	3,875.00	-	0%
2001	3,931.00	3,931.00	-	0%
2002	4,392.00	4,392.00	-	0%
2003	4,496.00	4,496.00	-	0%
2004	4,504.93	4,504.93	-	0%
2005	4,646.22	4,646.22	-	0%
2006	4,682.00	4,682.00	-	0%
2007	10,778.14	10,778.14	-	0%
2008	9,812.00	9,812.00	-	0%
2009	6,104.75	6,104.75	-	0%
2010	6,130.00	6,130.00	-	0%
2011	8,741.41	8,741.41	-	0%
2012	8,459.27	7,459.27	1,000.00	12%
2013	8,611.16	8,611.16	-	0%
2014	10,067.35	9,717.00	350.35	3%
2015	11,105.72	10,719.23	386.49	3%

Kerosene by Jet Fuel

Year	Import	Consumption	Balance	
		Transportation	KL	%
2000	45,730	45,730	-	0%
2001	48,017	48,017	-	0%
2002	50,417	50,417	-	0%
2003	52,938	52,938	-	0%
2004	55,585	55,585	-	0%
2005	58,364	58,364	-	0%
2006	61,283	61,283	-	0%
2007	64,347	64,347	-	0%
2008	67,564	67,564	-	0%
2009	18,359	18,359	-	0%
2010	13,359	13,359	-	0%
2011	17,712	17,712	-	0%
2012	29,256	29,256	-	0%
2013	37,968	37,968	-	0%
2014	47,866	42,603	5,263	11%
2015	46,262	46,262	-	0%

Lubricant

Year	Import	Consumption	Balance	
		Transportation	KL	%
2000	259.50	259.500	-	0
2001	273.00	273.000	-	0
2002	349.00	349.000	-	0
2003	383.00	383.000	-	0
2004	433.39	433.386	-	0
2005	496.51	496.514	-	0
2006	604.57	604.570	-	0
2007	736.14	736.142	-	0
2008	896.35	896.348	-	0
2009	1,091.42	1091.420	-	0
2010	1,521.36	1521.356	-	0
2011	1,731.35	1731.347	-	0
2012	1,970.32	1970.322	-	0
2013	2,242.28	2242.283	-	0
2014	2,551.78	2551.781	-	0
2015	2,904.00	2904.000	-	0

Diesel Oil

Year	Impor	Consumption			Balance	
		Transportation	Agriculture	Industry	KL	%
2000	214,461	201,569	323.31	12,569	-	-
2001	245,641	236,513	323.31	8,805	-	-
2002	247,574	238,059	323.31	9,191	-	-
2003	255,769	250,615	323.31	4,830	-	-
2004	262,904	257,323	323.31	5,257	-	-
2005	271,031	266,825	323.31	3,883	-	-
2006	375,295	282,850	323.31	92,122	-	-
2007	381,944	307,177	323.31	74,444	-	-
2008	457,327	365,013	323.31	91,991	-	-
2009	538,769	430,015	323.31	108,431	-	-
2010	538,769	436,034	323.31	102,411	-	-
2011	550,844	439,805	323.31	110,716	-	-
2012	601,588	510,293	323.31	90,971	-	-
2013	643,276	533,735	323.31	109,217	-	-
2014	688,907	654,122	323.31	34,462	-	-
2015	849,151	806,274	323.31	42,554	-	-

LPG

Year	Impor	Consumption		Balance	
		Commercial	Resedensial	Ton	%
2000	1,801.32	969.92	540.26	291.14	16%
2001	1,811.32	970.22	541.00	300.10	17%
2002	1,892.45	978.82	589.49	324.15	17%
2003	1,896.79	980.75	590.36	325.68	17%
2004	1,926.42	1,000.98	590.95	334.48	17%
2005	1,935.66	1,000.96	600.13	334.57	17%
2006	2,132.08	1,122.44	616.42	393.22	18%
2007	2,132.08	1,130.00	620.00	382.08	18%
2008	2,151.00	1,136.00	701.00	314.00	15%
2009	2,246.00	1,389.00	857.00	-	0%
2010	2,314.00	1,431.00	883.00	-	0%
2011	2,851.00	1,506.00	929.00	416.00	15%
2012	2,954.00	1,560.00	963.00	431.00	15%
2013	3,110.00	1,642.00	1,014.00	454.00	15%
2014	3,510.00	1,854.00	1,144.00	512.00	15%
2015	3,650.40	1,944.00	1,264.00	442.40	12%

III. Data collection

We use data that collected by IEEJ and are continuing to collect data from line agencies such as:

- **Electricity:** collect from the Utilities (EDL), IPPs and departments within the Ministry of Energy and Mines. The Electricity Statistic in 2015 has published.
- **Biomass, oil and LPG:** collect from Department of Import-Export, Department of Tax, Lao Fuel State Enterprise, oil companies and airline companies.
- **Coal:** collect from Department of Mines.
- **Renewable Energy (Solar):** Collect from Institute of Renewable Energy Promotion (IREP) and EDL-Gen.

IV. Challenges

- Lack of coordination between the Ministry of Energy and Mines and other line Ministries, utilities and IPPs,
- No committee to validate the data collected,
- No data center,
- No official website for energy data dissemination,
- There is a removal of a person who in charge for data collection,
- No budget for data collection.

Thank
you!

