



# Statistical Summary 2013 - 2017

Studies and Planning Directorate  
Investment Management and Studies Division  
Statistical Studies Department



Administración Nacional  
de Electricidad



**GOBIERNO  
NACIONAL**

*Paraguay  
de la gente*

# 1. Generation

## 1.1) Origin of Electrical Energy (MWh)

	2013	2014	2015	2016	2017
<b>Gross Generated Energy</b>					
Acaray	894.108	1.108.735	1.060.236	1.290.149	957.530
Thermal	3.179	5.927	1.373	1.250	1.509
<b>Gross Total Energy</b>	<b>897.287</b>	<b>1.114.662</b>	<b>1.061.609</b>	<b>1.291.399</b>	<b>959.040</b>
<b>Purchased Energy</b>					
Itaipú	9.410.899	10.643.608	10.636.323	11.227.393	13.454.277
Yacyretá	2.356.514	1.812.951	2.607.479	2.458.889	1.236.502
<b>Total Purchased Energy</b>	<b>11.767.413</b>	<b>12.456.559</b>	<b>13.243.802</b>	<b>13.686.282</b>	<b>14.690.779</b>
<b>Total Origin</b>	<b>12.664.701</b>	<b>13.571.220</b>	<b>14.305.410</b>	<b>14.977.680</b>	<b>15.649.819</b>

## 1.2) Destination of Electrical Energy (MWh)

	2013	2014	2015	2016	2017
<b>National Consumption</b>					
Interconnected National System (SIN)	12.524.086	13.450.302	14.186.610	14.848.092	15.575.124
Bahía Negra	1.074	1.075	1.290	1.250	1.509
<b>Total National Consumption</b>	<b>12.525.160</b>	<b>13.451.377</b>	<b>14.187.900</b>	<b>14.849.342</b>	<b>15.576.633</b>
<b>Energy Export</b>					
Ebisa (Argentina)	139.541	119.843	117.510	128.339	73.186
<b>Total Energy Export</b>	<b>139.541</b>	<b>119.843</b>	<b>117.510</b>	<b>128.339</b>	<b>73.186</b>
<b>Destination</b>	<b>12.664.701</b>	<b>13.571.220</b>	<b>14.305.410</b>	<b>14.977.680</b>	<b>15.649.819</b>

# 1. Generation

## 1.3) Electrical Energy Balance - National Market (MWh)

	2013	2014	2015	2016	2017
Net Generation (a)	895.038	1.112.260	1.059.130	1.289.011	957.241
Purchased Energy (b)	11.767.413	12.456.559	13.243.802	13.686.282	14.690.779
Import Energy (c)	0	0	0	0	0
Export Energy (d)	139.183	119.549	117.231	128.101	73.025
<b>Net Energy Available (e=a+b+c-d)</b>	<b>12.523.269</b>	<b>13.449.270</b>	<b>14.185.701</b>	<b>14.847.192</b>	<b>15.574.996</b>
Own Energy Consumption (f)	22.622	18.415	23.167	21.963	6.620
Public Lighting Consumption(g)	117.076	238.128	239.782	246.118	332.738
Total Energy Billed (h)	9.018.546	9.794.563	10.336.604	10.767.398	11.237.933
Total Energy Loss (i =e-f-g- h)	3.365.024	3.398.164	3.586.147	3.811.713	3.997.705

## 1.4) Electrical Energy Losses - National Marker (%)

	2013	2014	2015	2016	2017
Transmission	6,71	6,10	6,21	6,18	5,76
Distribution	20,16	19,20	19,07	19,49	19,91
<b>Total</b>	<b>26,87</b>	<b>25,30</b>	<b>25,28</b>	<b>25,67</b>	<b>25,67</b>

# 1. Generation

## 1.5) National Interconncted System (NIS)

	2013	2014	2015	2016	2017
<b>Energy (MWh)</b>					
Metropolitan	6.551.184	7.091.167	7.460.946	7.793.673	8.221.343
Center	1.155.248	1.233.889	1.322.612	1.403.944	1.480.363
South	1.035.169	1.101.091	1.151.460	1.232.101	1.298.146
North	515.770	567.092	631.609	667.598	679.469
East	2.264.760	2.451.375	2.539.203	2.623.912	2.755.592
West	153.049	176.401	190.764	199.676	234.648
<b>Total Electrical System</b>	<b>11.675.181</b>	<b>12.621.015</b>	<b>13.296.594</b>	<b>13.920.905</b>	<b>14.669.561</b>
Own Consumption	8.633	8.739	8.557	9.041	8.212
Transmission Losses	840.272	820.548	881.459	918.145	897.351
<b>Total Energy NIS</b>	<b>12.524.086</b>	<b>13.450.302</b>	<b>14.186.610</b>	<b>14.848.092</b>	<b>15.575.124</b>
<b>Peak Power Demand (MW)</b>	<b>2.425</b>	<b>2.619</b>	<b>2.656</b>	<b>2.917</b>	<b>3.135</b>
<b>Load Factor (%)</b>	<b>58,9</b>	<b>58,6</b>	<b>61,0</b>	<b>57,9</b>	<b>56,7</b>

## 2. Transmission and Distribution

### 2.1) Transmission Infraestructure

	2013	2014	2015	2016	2017
<b>Transmission Lines (km)</b>					
500 kV	364	364	364	364	364
220 kV	4.085	4.085	4.235	4.611	4.628
66 kV	1.266	1.295	1.318	1.318	1.353
<b>Installed Capacity (MVA)</b>					
220 kV	4.045	4.375	4.750	4.750	4.750
66 kV	2.294	2.354	2.357	2.357	2.875
23 kV	3.806	4.120	4.500	4.743	5.339
<b>Substation (N°)</b>	77	78	82	82	89

Other facilities not included.

## 2. Transmission and Distribution

### 2.2) Distribution Infrastructure

	2013	2014	2015	2016	2017
Medium Voltage Lines (km)	34.419	65.141	65.696	66.339	67.354
Distribution Transformers (number)	42.564	71.312	74.480	76.972	79.920
Distribution Transformers (MVA)	2.700	5.300	5.573	5.791	6.000
Active Customers (Number)	1.399.098	1.438.421	1.472.911	1.512.725	1.577.655

As of 2014 includes the length of self-construction lines and transformers of exclusive use.

### 2.3) Service Interruption Index - Metropolitan

	2013	2014	2015	2016	2017
Equivalent Outage Frequency by Power - FEP (N°/kVA-year)	15,80	19,39	23,81	32,38	27,55
Equivalent Outage Duration by Power - DEP (hours/kVA-year)	15,87	17,04	28,91	41,00	30,80

## 3. Commercialization

### 3.1) Billed Energy (MWh)

	2013	2014	2015	2016 <sup>(1)</sup>	2017 <sup>(2)</sup>
Residential	3.918.516	4.323.380	4.542.495	4.793.863	4.920.271
Commercial	1.635.766	1.781.483	1.892.526	1.929.452	0
Industrial	1.931.209	2.019.926	2.116.997	1.818.777	988.716
General	740.461	835.587	911.180	1.336.237	0
Government	587.940	602.124	632.737	643.475	457.253
Public Lighting	204.655	232.063	240.669	245.595	164.004
Other	0	0	0	0	3.937.962
Differential	0	0	0	0	123.013
High Voltage	0	0	0		554.503
Very High Voltage	0	0	0	0	65.971
Electrointensive	0	0	0		26.240
<b>Total National</b>	<b>9.018.546</b>	<b>9.794.563</b>	<b>10.336.604</b>	<b>10.767.398</b>	<b>11.237.933</b>
Export	135.348	116.132	113.307	120.179	70.493
<b>Total National and Exportación</b>	<b>9.153.895</b>	<b>9.910.695</b>	<b>10.449.911</b>	<b>10.887.577</b>	<b>11.308.426</b>

<sup>(1)</sup> In September 2016, approximately 20,000/industrial customers were transferred to the group of general consumption. <sup>(2)</sup> Since 2017, the structure of consumption groups is considered according to the Statement of Tariffs N° 21.

## 3. Commercialization

### 3.2) Revenue from Energy (million \$)

	2013	2014	2015	2016 <sup>(1)</sup>	2017 <sup>(2)</sup>
Residential	1.408.581	1.566.099	1.646.262	1.751.261	1.931.272
Commercial	558.213	605.502	633.473	650.758	0
Industrial	478.484	508.256	533.723	446.706	302.354
General	189.375	198.021	208.234	341.175	0
Government	120.657	126.027	130.736	135.936	122.094
Public Lighting	69.684	73.676	76.408	77.972	61.542
Other	0	0	0	0	1.406.418
Differential	0	0	0	0	49.814
High Voltage	0	0	0	0	126.459
Very High Voltage	0	0	0	0	13.932
Electrointensive	0	0	0	0	5.098
<b>Total National</b>	<b>2.824.995</b>	<b>3.077.580</b>	<b>3.228.836</b>	<b>3.403.808</b>	<b>4.018.983</b>
Export	82.320	74.002	82.509	95.716	55.647
<b>Total National and Exportación</b>	<b>2.907.315</b>	<b>3.151.582</b>	<b>3.311.345</b>	<b>3.499.524</b>	<b>4.074.630</b>

<sup>(1)</sup> In September 2016, approximately 20,000/industrial customers were transferred to the group of general consumption. <sup>(2)</sup> Since 2017, the structure of consumption groups is considered according to the Statement of Tariffs N° 21.



## 3. Commercialization

### 3.3) Billed Customers (N°)

	2013	2014	2015	2016 <sup>(1)</sup>	2017 <sup>(2)</sup>
Residential	1.127.035	1.166.988	1.280.964	1.281.931	1.175.992
Commercial	121.279	123.450	128.831	129.562	0
Industrial	20.739	21.821	23.878	1.523	1.574
General	22.446	22.988	24.576	46.391	0
Government	12.275	12.945	14.407	14.073	7.568
Public Lighting	0	0	0	0	0
Other	0	0	0	0	169.949
Differential	0	0	0	0	121
High Voltage	0	0	0	0	11
Very High Voltage	0	0	0	0	1
Electrointensive	0	0	0	0	1
<b>Total National</b>	<b>1.303.774</b>	<b>1.348.192</b>	<b>1.472.656</b>	<b>1.473.480</b>	<b>1.355.217</b>
Export	1	1	1	1	1
<b>Total National and Exportación</b>	<b>1.303.775</b>	<b>1.348.193</b>	<b>1.472.657</b>	<b>1.473.481</b>	<b>1.355.218</b>

<sup>(1)</sup> In September 2016, approximately 20,000/industrial customers were transferred to the group of general consumption. <sup>(2)</sup> Since 2017, the structure of consumption groups is considered according to the Statement of Tariffs N° 21. The values of the 2017 correspond to the average for the period from January to December.

### 3. Commercialization

#### 3.4) Average Consumption per Customers (kWh/month)

	2013	2014	2015	2016	2017
Residential	290	309	296	312	349
Total Nacional Market	576	605	585	609	691

#### 3.5) Electricity Consumption per Capita

	2013	2014	2015	2016	2017
National Consumption (MWh/año)	9.018.546	9.794.563	10.336.604	10.767.398	11.237.933
Total Population (inhabitants)	6.559.027	6.657.232	6.755.756	6.854.536	6.953.646
<b>Electricity Consumption per Capita (kWh/year)</b>	<b>1.375</b>	<b>1.471</b>	<b>1.530</b>	<b>1.571</b>	<b>1.616</b>

Estimated population as of 30 st of june of each year.

#### 3.6) National Electricity Coverage

	2013	2014	2015	2016	2017
Served Population (inhabitants)	6.737.785	6.911.514	6.765.270	6.895.546	6.997.344
Total Population (inhabitants) (*)	6.838.328	6.948.349	6.804.967	6.903.913	7.003.138
<b>National Electricity Coverage (%)</b>	<b>98,53</b>	<b>99,47</b>	<b>99,42</b>	<b>99,88</b>	<b>99,92</b>

Estimated population as of 31 st of december of each year.

## 4. Electricity Rates

### 4.1) Average Rates of Electricity (¢/kWh)

	2013	2014	2015	2016	2017
Residential	359,5	362,2	362,4	365,3	392,5
Commercial	341,3	339,9	334,7	337,3	0,0
Industrial	247,8	251,6	252,1	245,6	305,8
General	255,8	237,0	228,5	255,3	0,0
Government	205,2	209,3	206,6	211,3	267,0
Public Lighting	340,5	317,5	317,5	317,5	375,2
Other	0,0	0,0	0,0	0,0	357,1
Differential	0,0	0,0	0,0	0,0	404,9
High Voltage	0,0	0,0	0,0	0,0	228,1
Very High Voltage	0,0	0,0	0,0	0,0	211,2
Electrointensive	0,0	0,0	0,0	0,0	194,3
<b>Total National</b>	<b>313,2</b>	<b>314,2</b>	<b>312,4</b>	<b>316,1</b>	<b>357,6</b>

### 4.2) Social Tariffs for Electricity

	2013	2014	2015	2016	2017
Subsidized Customers (N°)	308.422	301.624	298.823	295.022	273.023
Subsidized Amount (million ¢)	59.905	59.843	60.347	59.245	56.456

Com.: The quantity of customers benefit corresponds to the average of the period from January to December.

## 5. Human Resources

### 5.1) Employees by Occupational Level (N°)

	2013	2014	2015	2016	2017
Professional	705	687	667	636	609
Technical	617	598	571	575	532
Administrative	1.294	1.280	1.258	1.234	1.206
Operational	1.660	1.608	1.562	1.779	1.723
<b>Total Permanent</b>	<b>4.276</b>	<b>4.173</b>	<b>4.058</b>	<b>4.224</b>	<b>4.070</b>
Contracted	1.326	1.316	1.446	1.047	1.011
<b>Total Employees</b>	<b>5.602</b>	<b>5.489</b>	<b>5.504</b>	<b>5.271</b>	<b>5.081</b>

Values correspond to the 31 st of december of each year.

## 5. Human Resources

### 5.2) Employees by Sector (N°)

	2013	2014	2015	2016	2017
Generation	71	70	69	62	58
Transmission	679	646	630	606	570
Distribution	1.613	1.465	1.421	1.604	1555
Commercialization	943	952	929	993	968
Administrative	970	1.040	1.009	959	919
<b>Total Permanent</b>	<b>4.276</b>	<b>4.173</b>	<b>4.058</b>	<b>4.224</b>	<b>4.070</b>
Contracted	1.326	1.316	1.446	1.047	1011
<b>Total Employees</b>	<b>5.602</b>	<b>5.489</b>	<b>5.504</b>	<b>5.271</b>	<b>5.081</b>

Values correspond to the 31 st of december of each year.

### 5.3) Personnel Index

	2013	2014	2015	2016	2017
Connected Customers per Employee (N°/employee)	327	345	363	358	388
Billed Electricity per Employee (MWh/employee-year)	2.109	2.347	2.547	2.549	2.761

## 6. Financial Management

### 6.1) Balance Sheet (million ₺)

	2013	2014	2015	2016	2017
<b>Assets</b>					
Current	2.252.485	2.486.209	2.850.641	3.890.120	3.585.852
Non-current	9.093.031	10.699.672	12.793.740	11.773.543	13.126.289,83
<b>Total Assets</b>	<b>11.345.516</b>	<b>13.185.882</b>	<b>15.644.380</b>	<b>15.663.663</b>	<b>16.712.142</b>
<b>Liabilities</b>					
Current	791.622	735.507	1.217.473	1.106.404	1.176.404
Non-current	1.503.007	2.874.111	4.225.504	4.608.251	4.904.624
<b>Total Liabilities</b>	<b>2.294.629</b>	<b>3.609.618</b>	<b>5.442.977</b>	<b>5.714.655</b>	<b>6.081.028</b>
<b>Equity</b>	<b>9.050.887</b>	<b>9.576.264</b>	<b>10.201.403</b>	<b>9.949.007</b>	<b>10.631.114</b>
<b>Total Liabilities and Equity</b>	<b>11.345.516</b>	<b>13.185.882</b>	<b>15.644.380</b>	<b>15.663.663</b>	<b>16.712.142</b>

### 6.2) Income Statement (million ₺)

	2013	2014	2015	2016	2017
Operating Income (a)	3.000.930	3.282.653	3.445.065	3.673.215	4.216.980
Operating Expenses (b)	2.755.922	3.050.054	3.678.677	3.885.520	3.842.781
<b>Net Operating Income (c=a-b)</b>	<b>245.009</b>	<b>232.599</b>	<b>-233.611</b>	<b>-212.305</b>	<b>374.199</b>
Non-Operating Income (d)	619.393	548.310	937.081	702.727	566.455
Non-Operating Expense (e)	409.040	385.159	596.332	564.169	399.272
<b>Profit Before Tax (f=c+d-e)</b>	<b>455.362</b>	<b>395.750</b>	<b>107.138</b>	<b>-73.747</b>	<b>541.382</b>

## 6. Financial Management

### 6.3) Profitability Rate (Law 966/1964)

	2013	2014	2015	2016	2017
Net Revenue (million \$) [a]	245.009	232.599	-233.611	-212.304	374.199
Immobilized Investment (million \$) [b]	5.869.327	6.428.771	6.604.768	7.118.810	7.456.615
<b>Profitability Rate (%) [c=(a/b)x100]</b>	<b>4,17</b>	<b>3,62</b>	<b>-3,54</b>	<b>-2,98</b>	<b>5,02</b>

### 6.4) Commercial, Economic and Financial Indicators

	2013	2014	2015	2016	2017
Unpaid Bills - Consumers (%)	30,73	28,68	30,73	33,07	33,03
General Chargeability Margin (%)	77,99	78,69	78,98	81,16	80,46
Current Liquidity (times)	2,85	3,30	2,34	3,52	3,05
Solvency (%)	79,78	72,63	65,21	63,52	63,61
EBITDA Margin (%)	19,46	18,06	4,06	5,55	19,61
Equity Profitability (%)	5,03	4,13	1,05	-0,74	5,09

**ANDE's Mission Statement: To satisfy the country's electrical power needs and act in the regional electricity sector, with social and environmental responsibility, to excel in management and provision of services in order to contribute towards national development and to the welfare of its population.**