



Tavanir Holding Company



Islamic Republic of Iran  
Ministry of Energy

# Statistical Report on 49 Years of Activities of Iran Electric Power Industry

## (1967-2015)



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**Cover Image:**

**1- Fars Combined-Cycle Power Plant**

**2- An old radio driven by oil – Museum Of Electricity Industry in IRAN**

In the Name of Allah

# Statistical Report on 49 Years of Activities of Iran Electric Power Industry (1967-2015)

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### **Please note**

The statistical data and information given in this publication correspond to the Iranian calendar year, beginning on 21 st. March. Therefore, in the present text, for example, by year 2015 is mean a one-year period of time starting from 21st. March 2015 through 19th March 2016.

## Foreword

Iran Electric Power Industry has experienced evolutionary trend during the last 49 years. This report is aimed to describe this developing trend through the use of historical statistics during the years 1967-2015. The statistics presented here in various tables, charts and diagrams, contain the following items:

- Evaluation the performance of the electric power industry in Iran during the last 49 years especially evolutionary trend after I.R. of Iran revolution.
- Great contribution to managers and experts
- A basic for electricity forecast and other related future development plans
- A comprehensive collection for using electric power researchers in this publication the statistics are divided into five periods, that is, the last 13 years before the I.R. of the Iran revolution and also first, second, third, fourth and the five years of the fifth socio-economic development plans.

It is worth mentioning that throughout the report all tables, charts and diagrams are revised annually to meet the needs of the organization and if required provide information on current movements in the Iranian Electric Power Industry.

Operation of the first power plant in Iran has been started since 1959. However due to not existing accurate and documented statistics, done activities in electric power industry in Iran has been assessed from 1967.

## 37 Years Evolutionary Trend of Iran Electric Power Industry

This brief report is aimed to represent a clear view of 37 years evolutionary trend of Iran Electric Power Industry with the help of facts and figures at the end of years 1978, 1988, 1994, 1999, 2004, 2010 and 2015 and great achievements during the last 37 years after Islamic revolution. To provide a clear record of the revolutionary trend of Iran Electric Power Industry, the major ups and downs which this industry has experienced during last years are indicated as follows.

Upon substantiation of the Islamic revolution of Iran, economic sanctions together with imposed war started. The imposed war lasted 8 years, destroying 2200 MW of power generation, transmission and substation capacities and extraordinary task and dedication was demanded to repair damages of Iran Electric Power system. Now at the year 2015 after 37 years after Islamic revolution of Iran, the installed power plant capacity has increased by 10.6 times, electric power generation by 16.1 times, the length of transmission and sub-transmission line by 9.0 times, the capacity of transmission and sub-transmission substations by 12.6 times, electricity consumption by 16.1 times, the number of customers by 9.7 times, the length of MV and LV networks by 11.0 times and the number of electrified villages by 12.9 times whereas the population of the country has just increased by 2.2 times. As it can be observed, all indices listed above indicate the public awareness and better service of this industry to public. Today, electricity industry in Iran is not a luxury commodity but an infrastructural necessity for economic development and further prosperity.

Today, Iran by being linked with its neighboring countries through electrical network is active in electric energy exchange beyond its boarder. Today, Iran is determined to manufacture electrical equipment needed by the electric power industry service to abroad. It is worth underlying that these are great achievements for the electric power industry has happened after of the Islamic revolution trend, while Iran was facing economical, political and international limitations and sanctions.

## Iran Electric Power Industry in Brief

| Description      | Unit   | End of Years                   |        |        |        |        |        |        | Average Annual Growth 2015 to 1978 |                |
|------------------|--|--------------------------------|--------|--------|--------|--------|--------|--------|------------------------------------|----------------|
|                  |  | 2015                           | 2010   | 2004   | 1999   | 1994   | 1988   | 1978   |                                    |                |
| Capacity         | Nominal Capacity   | Mw                             | 74103  | 61203  | 37300  | 25205  | 20413  | 13681  | 7024                               | 6.6            |
|                  | Average Operational Capacity                                     | Mw                             | 64707  | 54069  | 33801  | 23990  | 19326  | 11734  | 6362                               | 6.5            |
|                  | Peak Load (Coincident)   | Mw                             | 46696  | 38891  | 27600  | 19238  | 14344  | 7762   | 3486                               | 7.3            |
|                  | Max .supplied Load simultaneous with Max. Consumption Period     | Mw                             | 49351  | 39441  | 28076  | 19402  | 14344  | 7762   | 3486                               | 7.4            |
|                  | Max.Power Demand   | Mw                             | 50321  | 40239  | 29267  | 19805  | 14424  | 8112   | 3643                               | 7.4            |
| Generation       | Gross Generation   | GWH                            | 280689 | 232994 | 162870 | 107207 | 77086  | 43775  | 17386                              | 7.8            |
|                  | Internal Consumption of Power Plants                             | GWH                            | 7888   | 8083   | 7113   | 4959   | 3616   | 2120   | 835                                | 6.3            |
|                  | Net Generation   | GWH                            | 272801 | 224911 | 155757 | 102248 | 73470  | 41655  | 16551                              | 7.9            |
|                  | Electrical Energy Import   | GWH                            | 4148   | 3015   | 2170   | 340    |        |        |                                    |                |
|                  | Electrical Energy Export   | GWH                            | 9880   | 6707   | 1837   | 1125   | 197    |        |                                    |                |
|                  | Max.Daily Electrical Power Generation *                          | GWH                            | 1064   | 851    | 555    | 360    | 241    | 134    | 59                                 | 8.1            |
|                  | Max. Daily Electrical Power Demand *                             | GWH                            | 1073   | 876    | 565    | 362    | 239    | 158    | 60                                 | 8.1            |
|                  | Load Factor  | %                              | 65.2   | 68.4   | 67.2   | 63.6   | 61     | 64.4   | 56.9                               | 0.24           |
| Fuel Consumption | Natural Gas  | 10 <sup>6</sup> M <sup>3</sup> | 58424  | 44890  | 32681  | 21234  | 12541  | 5730   | 1380                               | 10.7           |
|                  | Diesel   | 10 <sup>6</sup> Lit            | 6083   | 5919   | 2188   | 1073   | 1151   | 1517   | 1472                               | 3.9            |
|                  | Fuel Oil   | 10 <sup>6</sup> Lit            | 6946   | 8859   | 5736   | 5946   | 5887   | 3839   | 1015                               | 5.3            |
|                  | Fuels Thermal Value  | 10 <sup>9</sup> Kcal           | 606045 | 525099 | 358724 | 248179 | 182866 | 102696 | 36200                              | 7.9            |
|                  | Average efficiency of thermal units                              | %                              | 37.4   | 36.6   | 36.5   | 35.1   | 32.0   | 30.5   | 26.5                               | 0.31           |
| Transmission     | Length of Transmission Lines                                     | Km Circuit                     | 51074  | 47878  | 35999  | 27184  | 17436  | 12402  | 4548                               | 6.8            |
|                  | Length of Sub-Transmission Lines                                 | Km Circuit                     | 70565  | 65118  | 51787  | 38895  | 30614  | 21522  | 9013                               | 5.7            |
|                  | Capacity of Transmission Substation(1)                           | MVA                            | 135805 | 109395 | 74282  | 54197  | 39862  | 28970  | 9150                               | 7.6            |
|                  | Capacity of Sub-Transmission Substation(1)                       | MVA                            | 96909  | 82332  | 53622  | 39547  | 30574  | 21829  | 9327                               | 6.5            |
| Distribution     | Electricity Sale   | GWH                            | 227311 | 184182 | 124466 | 84656  | 63625  | 36147  | 14145                              | 7.8            |
|                  | Number of Customers  | 10 <sup>3</sup> Cus.           | 32831  | 25693  | 18806  | 14875  | 11717  | 8826   | 3399                               | 6.3            |
|                  | Length of Medium Voltage Distribution Lines                      | Km                             | 406973 | 363701 | 290623 | 218432 | 157205 | 117090 | 32077                              | 7.1            |
|                  | Length of Low Voltage Distribution Lines                         | Km                             | 344810 | 297825 | 239797 | 200058 | 150006 | 117948 | 36137                              | 6.3            |
|                  | Capacity of Distribution Transformers                            | MVA                            | 110458 | 86817  | 58369  | 44432  | 36232  | 25431  | 8330                               | 7.2            |
|                  | Number of Distribution Transformers                              | Set                            | 628815 | 479098 | 313459 | 219548 | 168689 | 119385 | 26495                              | 8.9            |
|                  | Total Electrified Villages                                       | Village                        | 56170  | 53461  | 49399  | 42640  | 32068  | 22523  | 4367                               | 7.1            |
| Employee         | Number of Employees(2)   | Person                         | 45418  | 41711  | 50543  | 51943  | 58849  | 59011  | 32082                              | 0.9            |
| Indices          | Average Electricity Consumption per customers                    | KWH                            | 6924   | 7169   | 6618   | 5691   | 5430   | 4096   | 4162                               | 1.4            |
|                  | Average Rate of Electricity sale Based on Current Price          | Rial/Kwh                       | 614.7  | 208.7  | 151.1  | 80.3   | 32.4   | 5.4    | 2.3                                | 16.3           |
|                  | Average Rate of Electricity Sale based on Constant Price in 2011 | Rial/Kwh                       | 270    | 254    | 419    | 431    | 531    | 279    | 662                                | -2.4           |
|                  | Description  | Unit                           | 2015   | 2014   | 2013   | 2012   | 2011   | 2010   | 2009                               | Average Growth |
|                  | Total Loss   | %                              | 12.30  | 14.78  | 15.16  | 15.0   | 15.5   | 17.0   | 18.6                               | -0.90          |

Note: Difference up to one figure is just to round the figures

1-Power plant substations are not added up to the transmission and sub-transmission's capacity

\*Source: Iran Grid Management Co.(IGMC)

2- Man power engaged in hydro electric power plants are included in the list of power plant's employees.

## Nominal Capacity of Power Plants

(MW)

| Year                               | Steam |         | Gas Turbine |         | Combined Cycle |         | Diesel | Hydro | Nuclear & Renewable Energy |         | Total       |             | Whole Country | Growth Compared to Previous Year(%) |
|------------------------------------|-------|---------|-------------|---------|----------------|---------|--------|-------|----------------------------|---------|-------------|-------------|---------------|-------------------------------------|
|                                    | MOE   | non MOE | MOE         | non MOE | MOE            | non MOE |        |       | MOE                        | non MOE | MOE         | non MOE     |               |                                     |
| 1967                               | 343   |         | 84          |         |                |         | 198    | 309   |                            |         | 934         |             | 934           | -                                   |
| 1968                               | 351   |         | 98          |         |                |         | 250    | 309   |                            |         | 1008        |             | 1008          | 7.9                                 |
| 1969                               | 437   |         | 128         |         |                |         | 286    | 462   |                            |         | 1313        |             | 1313          | 30.3                                |
| 1970                               | 434   |         | 135         |         |                |         | 310    | 517   |                            |         | 1396        |             | 1396          | 6.3                                 |
| 1971                               | 746   |         | 135         |         |                |         | 316    | 800   |                            |         | 1997        |             | 1997          | 43.1                                |
| 1972                               | 746   |         | 172         |         |                |         | 372    | 804   |                            |         | 2094        |             | 2094          | 4.9                                 |
| 1973                               | 1359  |         | 241         |         |                |         | 390    | 804   |                            |         | 2794        |             | 2794          | 33.4                                |
| 1974                               | 1587  |         | 410         |         |                |         | 414    | 804   |                            |         | 3215        |             | 3215          | 15.1                                |
| 1975                               | 1576  |         | 610         |         |                |         | 459    | 804   |                            |         | 3449        |             | 3449          | 7.3                                 |
| 1976                               | 1722  |         | 658         |         |                |         | 505    | 804   |                            |         | 3689        |             | 3689          | 7.0                                 |
| 1977                               | 1719  |         | 1507        |         |                |         | 541    | 1804  |                            |         | 5571        |             | 5571          | 51.0                                |
| 1978                               | 1719  |         | 2887        |         |                |         | 614    | 1804  |                            |         | 7024        |             | 7024          | 26.1                                |
| <b>Average Annual Growth (%)</b>   |       |         |             |         |                |         |        |       |                            |         | <b>20.1</b> | <b>20.1</b> |               |                                     |
| 1979                               | 2476  |         | 2936        |         |                |         | 705    | 1804  |                            |         | 7921        |             | 7921          | 12.8                                |
| 1980                               | 3983  |         | 3058        |         |                |         | 783    | 1804  |                            |         | 9628        |             | 9628          | 21.6                                |
| 1981                               | 4423  |         | 3175        |         |                |         | 830    | 1804  |                            |         | 10232       |             | 10232         | 6.3                                 |
| 1982                               | 4423  |         | 3201        |         |                |         | 880    | 1804  |                            |         | 10308       |             | 10308         | 0.7                                 |
| 1983                               | 5045  |         | 3150        |         |                |         | 923    | 1804  |                            |         | 10922       |             | 10922         | 6.0                                 |
| 1984                               | 5445  |         | 3271        |         |                |         | 899    | 1804  |                            |         | 11419       |             | 11419         | 4.6                                 |
| 1985                               | 6285  |         | 3309        |         |                |         | 971    | 1804  |                            |         | 12369       |             | 12369         | 8.3                                 |
| 1986                               | 6855  |         | 3438        |         |                |         | 891    | 1827  |                            |         | 13011       |             | 13011         | 5.2                                 |
| 1987                               | 7155  |         | 3492        |         |                |         | 837    | 1827  |                            |         | 13311       |             | 13311         | 2.3                                 |
| 1988                               | 7475  |         | 3489        |         |                |         | 803    | 1914  |                            |         | 13681       |             | 13681         | 2.8                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>6.9</b>  | <b>6.9</b>  |               |                                     |
| 1989                               | 8086  |         | 3600        |         |                |         | 803    | 1953  |                            |         | 14442       |             | 14442         | 5.6                                 |
| 1990                               | 8086  |         | 3940        |         |                |         | 824    | 1953  |                            |         | 14803       |             | 14803         | 2.5                                 |
| 1991                               | 8086  |         | 3940        |         |                |         | 869    | 1953  |                            |         | 14848       |             | 14848         | 0.3                                 |
| 1992                               | 8710  |         | 4794        |         |                |         | 856    | 1953  |                            |         | 16313       |             | 16313         | 9.9                                 |
| 1993                               | 9513  |         | 5934        |         |                |         | 812    | 1953  |                            |         | 18212       |             | 18212         | 11.6                                |
| 1994                               | 10742 |         | 6960        |         |                |         | 758    | 1953  |                            |         | 20413       |             | 20413         | 12.1                                |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>6.9</b>  | <b>6.9</b>  |               |                                     |
| 1995                               | 11557 |         | 7746        |         |                |         | 658    | 1953  |                            |         | 21914       |             | 21914         | 7.4                                 |
| 1996                               | 11621 |         | 8168        |         |                |         | 662    | 1969  |                            |         | 22420       |             | 22420         | 2.3                                 |
| 1997                               | 11685 |         | 6969        |         | 1927           |         | 677    | 1999  |                            |         | 23257       |             | 23257         | 3.7                                 |
| 1998                               | 12400 |         | 7393        |         | 2029           |         | 616    | 1999  |                            |         | 24437       |             | 24437         | 5.1                                 |
| 1999                               | 13102 |         | 6698        |         | 2832           |         | 574    | 1999  |                            |         | 25205       |             | 25205         | 3.1                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>4.3</b>  | <b>4.3</b>  |               |                                     |
| 2000*                              | 13752 | 374     | 6243        | 527     | 3760           |         | 533    | 1999  |                            |         | 26287       | 901         | 27188         | 7.9                                 |
| 2001                               | 14402 | 374     | 7038        | 527     | 4060           |         | 533    | 1999  | 11                         |         | 28043       | 901         | 28944         | 6.5                                 |
| 2002                               | 14466 | 374     | 6330        | 527     | 6290           |         | 490    | 3028  | 12                         |         | 30617       | 901         | 31517         | 8.9                                 |
| 2003                               | 14530 | 374     | 7136        | 527     | 6832           |         | 493    | 4420  | 16                         |         | 33427       | 901         | 34328         | 8.9                                 |
| 2004                               | 14855 | 374     | 9075        | 635     | 6832           |         | 493    | 5012  | 25                         |         | 36292       | 1009        | 37300         | 8.7                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>7.6</b>  | <b>8.2</b>  |               |                                     |
| 2005                               | 14914 | 663     | 9907        | 2143    | 6832           |         | 493    | 6043  | 37                         |         | 38226       | 2806        | 41032         | 10                                  |
| 2006                               | 14914 | 663     | 11282       | 3579    | 7836           |         | 418    | 6572  | 47                         |         | 41045       | 4242        | 45288         | 10.4                                |
| 2007                               | 14935 | 663     | 10590       | 4843    | 10479          |         | 418    | 7422  | 63                         |         | 43907       | 5506        | 49413         | 9.1                                 |
| 2008                               | 14935 | 663     | 11798       | 6278    | 11117          |         | 418    | 7672  | 63                         |         | 46003       | 6941        | 52944         | 7.1                                 |
| 2009                               | 14935 | 769     | 10479       | 8188    | 13664          |         | 425    | 7714  | 92                         |         | 47311       | 8957        | 56268         | 6.3                                 |
| 2010                               | 14935 | 769     | 12410       | 10115   | 13984          |         | 409    | 8486  | 95                         |         | 50319       | 10884       | 61203         | 8.8                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>5.6</b>  | <b>8.6</b>  |               |                                     |
| 2011                               | 14943 | 879     | 12261       | 12081   | 14780          |         | 408    | 8745  | 1116                       |         | 52253       | 12959       | 65212         | 6.6                                 |
| 2012                               | 14951 | 879     | 12423       | 13580   | 15260          | 484     | 439    | 9745  | 1181                       |         | 53999       | 14943       | 68941         | 5.7                                 |
| 2013                               | 11841 | 3989    | 7925        | 16790   | 4275           | 13575   | 439    | 10265 | 1152                       | 29      | 35897       | 34383       | 70279         | 1.9                                 |
| 2014                               | 11241 | 4589    | 7195        | 19225   | 4275           | 14219   | 439    | 10785 | 1140                       | 53      | 35075       | 38085       | 73160         | 4.1                                 |
| 2015                               | 11241 | 4589    | 6572        | 20298   | 4275           | 14219   | 439    | 11278 | 1140                       | 53      | 34945       | 39158       | 74103         | 1.3                                 |

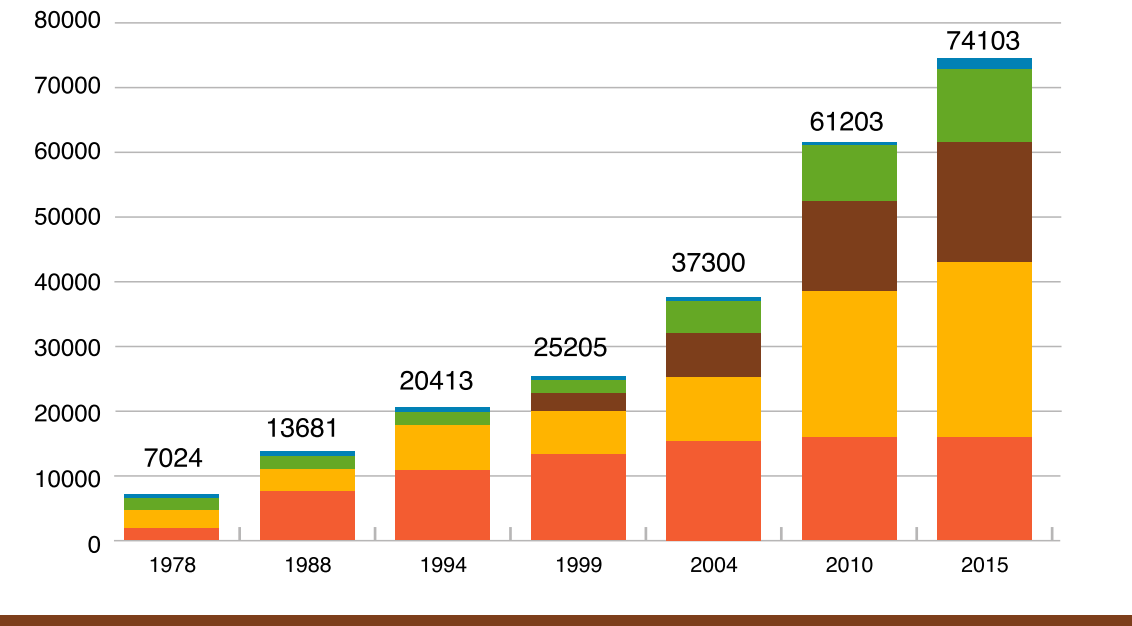
\* Data related to operating gas units in C.C power plants related to previous years is included in gas power plants

\*\* Respectively, beginning of 1st, 2nd, 3rd, 4th and 5th plans

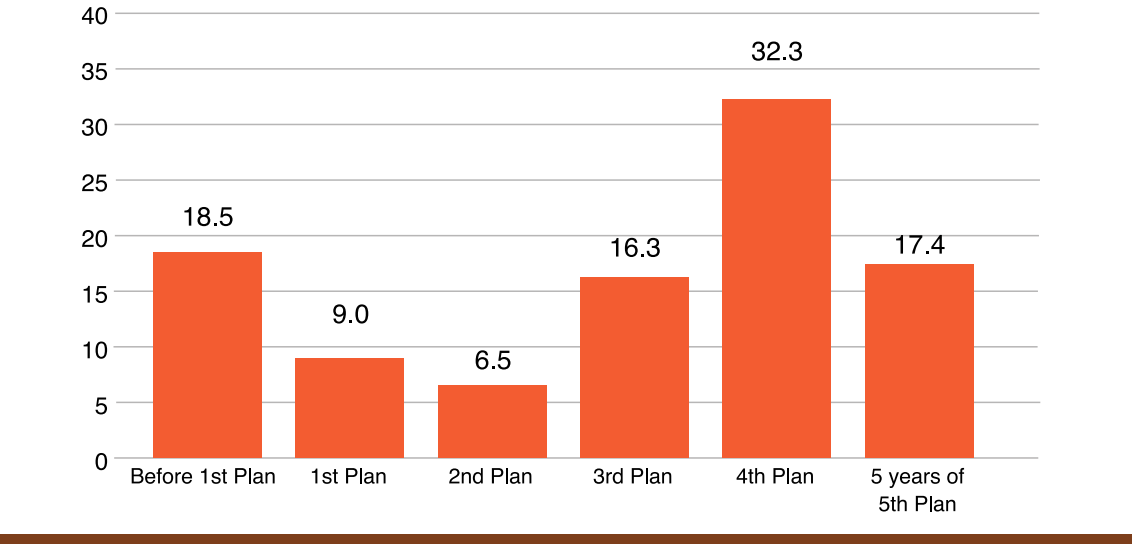
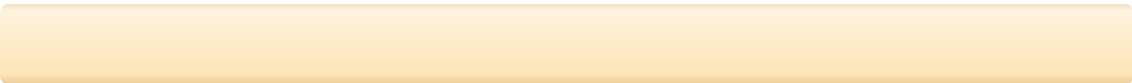
non-MOE: Large Industry and Private sector



(MW) **Nominal Capacity by Power Plants Types**



(%) **Contribution of Nominal Installed Capacity**



## Operational Capacity of Power Plants

(MW)

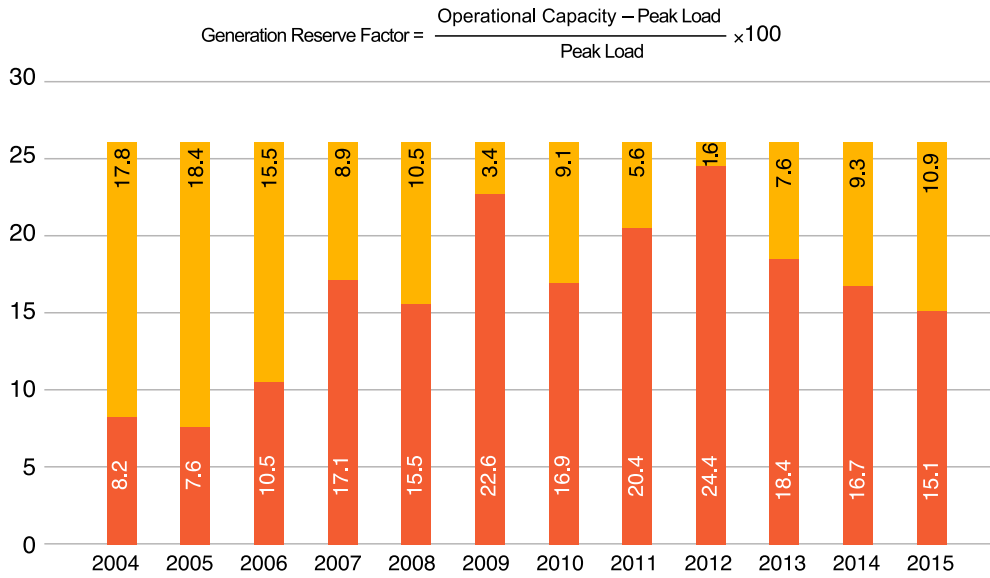
| Year                              | Steam |         | Gas Turbine |         | Combined Cycle |         | Diesel | Hydro | Nuclear & Renewable Energy |         | Total |         | Whole Country | Growth Compared to Previous Year(%) |
|-----------------------------------|-------|---------|-------------|---------|----------------|---------|--------|-------|----------------------------|---------|-------|---------|---------------|-------------------------------------|
|                                   | MOE   | non MOE | MOE         | non MOE | MOE            | non MOE | MOE    | MOE   | MOE                        | non MOE | MOE   | non MOE |               |                                     |
| 1967                              | 324   |         | 62          |         |                |         | 154    | 309   |                            |         | 849   |         | 849           | -                                   |
| 1968                              | 332   |         | 72          |         |                |         | 194    | 309   |                            |         | 907   |         | 907           | 6.8                                 |
| 1969                              | 425   |         | 114         |         |                |         | 242    | 462   |                            |         | 1243  |         | 1243          | 37.0                                |
| 1970                              | 425   |         | 129         |         |                |         | 248    | 517   |                            |         | 1319  |         | 1319          | 6.1                                 |
| 1971                              | 604   |         | 118         |         |                |         | 249    | 800   |                            |         | 1771  |         | 1771          | 34.3                                |
| 1972                              | 723   |         | 87          |         |                |         | 291    | 804   |                            |         | 1905  |         | 1905          | 7.6                                 |
| 1973                              | 1165  |         | 204         |         |                |         | 283    | 804   |                            |         | 2456  |         | 2456          | 28.9                                |
| 1974                              | 1350  |         | 347         |         |                |         | 300    | 804   |                            |         | 2801  |         | 2801          | 14.0                                |
| 1975                              | 1398  |         | 566         |         |                |         | 375    | 804   |                            |         | 3143  |         | 3143          | 12.2                                |
| 1976                              | 1528  |         | 610         |         |                |         | 420    | 804   |                            |         | 3362  |         | 3362          | 7.0                                 |
| 1977                              | 1621  |         | 1394        |         |                |         | 451    | 1804  |                            |         | 5270  |         | 5270          | 56.8                                |
| 1978                              | 1606  |         | 2505        |         |                |         | 447    | 1804  |                            |         | 6362  |         | 6362          | 20.7                                |
| <b>Average Annual Growth (%)</b>  |       |         |             |         |                |         |        |       |                            |         | 20.1  | 20.1    |               |                                     |
| 1979                              | 2274  |         | 2523        |         |                |         | 485    | 1804  |                            |         | 7086  |         | 7086          | 11.4                                |
| 1980                              | 3374  |         | 2533        |         |                |         | 556    | 1804  |                            |         | 8267  |         | 8267          | 16.7                                |
| 1981                              | 4063  |         | 2533        |         |                |         | 606    | 1804  |                            |         | 9006  |         | 9006          | 8.9                                 |
| 1982                              | 4063  |         | 2554        |         |                |         | 642    | 1804  |                            |         | 9063  |         | 9063          | 0.6                                 |
| 1983                              | 4615  |         | 2575        |         |                |         | 699    | 1804  |                            |         | 9693  |         | 9693          | 7.0                                 |
| 1984                              | 4994  |         | 2705        |         |                |         | 679    | 1804  |                            |         | 10182 |         | 10182         | 5.0                                 |
| 1985                              | 5794  |         | 2825        |         |                |         | 729    | 1804  |                            |         | 11152 |         | 11152         | 9.5                                 |
| 1986                              | 5794  |         | 2874        |         |                |         | 781    | 1827  |                            |         | 11276 |         | 11276         | 1.1                                 |
| 1987                              | 6181  |         | 2937        |         |                |         | 734    | 1827  |                            |         | 11679 |         | 11679         | 3.6                                 |
| 1988                              | 6181  |         | 2935        |         |                |         | 704    | 1914  |                            |         | 11734 |         | 11734         | 0.5                                 |
| <b>*Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 6.3   | 6.3     |               |                                     |
| 1989                              | 7823  |         | 3154        |         |                |         | 704    | 1953  |                            |         | 13634 |         | 13634         | 16.2                                |
| 1990                              | 7823  |         | 3258        |         |                |         | 728    | 1953  |                            |         | 13762 |         | 13762         | 0.9                                 |
| 1991                              | 7943  |         | 3258        |         |                |         | 681    | 1953  |                            |         | 13835 |         | 13835         | 0.5                                 |
| 1992                              | 8460  |         | 3949        |         |                |         | 667    | 1953  |                            |         | 15029 |         | 15029         | 8.6                                 |
| 1993                              | 9264  |         | 5078        |         |                |         | 626    | 1953  |                            |         | 16921 |         | 16921         | 12.6                                |
| 1994                              | 10654 |         | 6138        |         |                |         | 581    | 1953  |                            |         | 19326 |         | 19326         | 14.2                                |
| <b>*Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 8.7   | 8.7     |               |                                     |
| 1995                              | 11362 |         | 6935        |         |                |         | 508    | 1953  |                            |         | 20758 |         | 20758         | 7.4                                 |
| 1996                              | 11456 |         | 7379        |         |                |         | 412    | 1963  |                            |         | 21210 |         | 21210         | 2.2                                 |
| 1997                              | 11523 |         | 6311        |         | 1789           |         | 519    | 1999  |                            |         | 22141 |         | 22141         | 4.4                                 |
| 1998                              | 12157 |         | 6620        |         | 1892           |         | 382    | 1999  |                            |         | 23050 |         | 23050         | 4.1                                 |
| 1999                              | 12862 |         | 6080        |         | 2571           |         | 478    | 1999  |                            |         | 23990 |         | 23990         | 4.1                                 |
| <b>*Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 4.4   | 4.4     |               |                                     |
| 2000                              | 13372 | 374     | 4984        | 466     | 3335           |         | 457    | 1999  |                            |         | 24147 | 840     | 24987         | 4.2                                 |
| 2001                              | 14002 | 374     | 5609        | 466     | 3635           |         | 400    | 1999  | 11                         |         | 25656 | 840     | 26496         | 6.0                                 |
| 2002                              | 13993 | 374     | 5080        | 466     | 5549           |         | 359    | 3027  | 12                         |         | 28021 | 840     | 28861         | 8.9                                 |
| 2003                              | 14163 | 374     | 5800        | 466     | 6006           |         | 361    | 4108  | 16                         |         | 30454 | 840     | 31295         | 8.4                                 |
| 2004                              | 14488 | 374     | 7407        | 556     | 5996           |         | 347    | 4609  | 25                         |         | 32872 | 930     | 33802         | 8.0                                 |
| <b>*Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 6.5   | 7.1     |               |                                     |
| 2005                              | 14524 | 613     | 8167        | 1783    | 5996           |         | 347    | 5772  | 37                         |         | 34861 | 2396    | 37239         | 10.2                                |
| 2006                              | 14529 | 613     | 9422        | 2842    | 6976           |         | 286    | 6269  | 47                         |         | 37409 | 3455    | 40985         | 10                                  |
| 2007                              | 14566 | 619     | 8778        | 3897    | 9300           |         | 286    | 7074  | 62                         |         | 40066 | 4516    | 44582         | 9.1                                 |
| 2008                              | 14566 | 619     | 9807        | 5017    | 9909           |         | 286    | 7324  | 62                         |         | 41954 | 5636    | 47590         | 6.7                                 |
| 2009                              | 14560 | 661     | 8400        | 6645    | 11408          |         | 289    | 7714  | 92                         |         | 42464 | 7306    | 49770         | 4.6                                 |
| 2010                              | 14560 | 661     | 9959        | 8332    | 11698          |         | 279    | 8486  | 95                         |         | 45077 | 8993    | 54069         | 8.6                                 |
| <b>*Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 5.4   | 8.1     |               |                                     |
| 2011                              | 14568 | 755     | 9809        | 10102   | 12166          |         | 262    | 8745  | 1116                       |         | 46666 | 10856   | 57522         | 6.4                                 |
| 2012                              | 14567 | 745     | 9909        | 11295   | 12596          | 402     | 284    | 9745  | 1181                       |         | 48282 | 12442   | 60724         | 5.6                                 |
| 2013                              | 11619 | 3696    | 6201        | 13847   | 3463           | 11351   | 284    | 10265 | 1152                       | 29      | 32984 | 28923   | 61907         | 1.9                                 |
| 2014                              | 10984 | 4268    | 5656        | 15712   | 3389           | 11716   | 284    | 10785 | 1140                       | 53      | 32238 | 31749   | 63987         | 3.4                                 |
| 2015                              | 10942 | 4268    | 5086        | 16544   | 3389           | 11723   | 284    | 11278 | 1140                       | 53      | 32119 | 32589   | 64708         | 1.1                                 |

\* Respectively, beginning of 1st, 2nd, 3rd, 4th and 5th plans  
non -MOE: Large Industry and Private sector

(%)

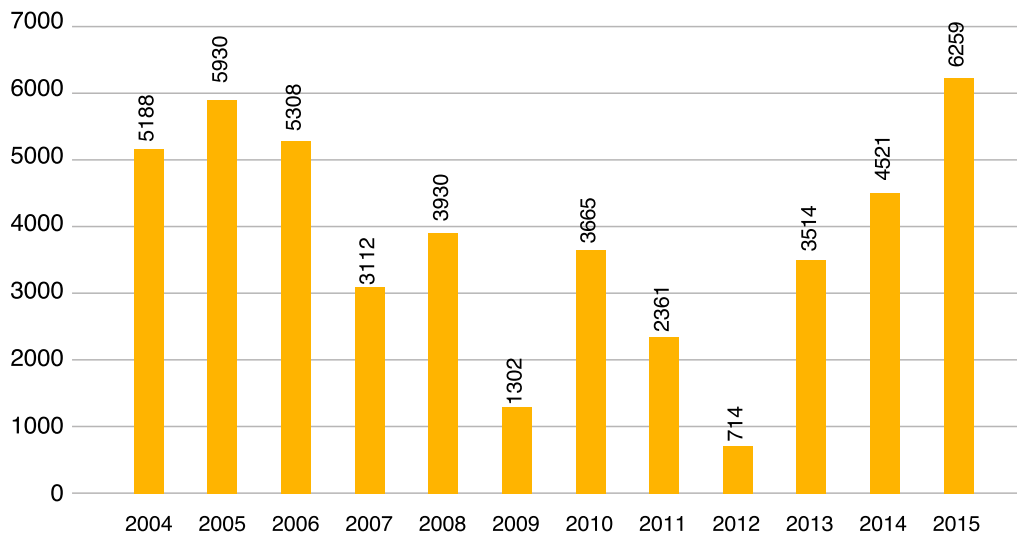
### Trend of Generation Reserve Factor

Available Generation Reserve Factor    Shortage of Generation Reserve Factor (to Preferred Level of 26%)



(MW)

### Trend of Operational Capacity Shortage for 26% of Reservation



## Gross Power Generation

(GWH)

| Year                               | Steam |         | Gas Turbine |         | Combined Cycle |         | Diesel | Hydro | Nuclear & Renewable Energy |         | Total  |         | Whole Country | Growth Compared to Previous Year(%) |
|------------------------------------|-------|---------|-------------|---------|----------------|---------|--------|-------|----------------------------|---------|--------|---------|---------------|-------------------------------------|
|                                    | MOE   | non MOE | MOE         | non MOE | MOE            | non MOE | MOE    | MOE   | MOE                        | non MOE | MOE    | non MOE |               |                                     |
| 1967                               | 732   |         | 56          |         |                |         | 396    | 658   |                            |         | 1842   |         | 1842          | -                                   |
| 1968                               | 1088  |         | 77          |         |                |         | 411    | 855   |                            |         | 2431   |         | 2431          | 32.0                                |
| 1969                               | 1336  |         | 85          |         |                |         | 440    | 1336  |                            |         | 3197   |         | 3197          | 31.5                                |
| 1970                               | 1978  |         | 155         |         |                |         | 452    | 1671  |                            |         | 4256   |         | 4256          | 33.1                                |
| 1971                               | 2097  |         | 194         |         |                |         | 520    | 2679  |                            |         | 5490   |         | 5490          | 29.0                                |
| 1972                               | 2513  |         | 265         |         |                |         | 564    | 3528  |                            |         | 6870   |         | 6870          | 25.1                                |
| 1973                               | 5374  |         | 541         |         |                |         | 567    | 2842  |                            |         | 9324   |         | 9324          | 35.7                                |
| 1974                               | 6545  |         | 688         |         |                |         | 511    | 3421  |                            |         | 11165  |         | 11165         | 19.7                                |
| 1975                               | 7785  |         | 955         |         |                |         | 593    | 3445  |                            |         | 12778  |         | 12778         | 14.4                                |
| 1976                               | 8455  |         | 1122        |         |                |         | 659    | 3975  |                            |         | 14211  |         | 14211         | 11.2                                |
| 1977                               | 8203  |         | 2558        |         |                |         | 781    | 4213  |                            |         | 15755  |         | 15755         | 10.9                                |
| 1978                               | 6316  |         | 3928        |         |                |         | 893    | 6249  |                            |         | 17386  |         | 17386         | 10.4                                |
| <b>Average Annual Growth (%)</b>   |       |         |             |         |                |         |        |       |                            |         | 22.6   | 22.6    |               |                                     |
| 1979                               | 7769  |         | 5327        |         |                |         | 926    | 5419  |                            |         | 19441  |         | 19441         | 11.8                                |
| 1980                               | 8197  |         | 5088        |         |                |         | 976    | 5620  |                            |         | 19881  |         | 19881         | 2.3                                 |
| 1981                               | 9174  |         | 5883        |         |                |         | 1120   | 6229  |                            |         | 22406  |         | 22406         | 12.7                                |
| 1982                               | 12562 |         | 6141        |         |                |         | 1173   | 6447  |                            |         | 26323  |         | 26323         | 17.5                                |
| 1983                               | 16296 |         | 6826        |         |                |         | 1184   | 6203  |                            |         | 30509  |         | 30509         | 15.9                                |
| 1984                               | 18309 |         | 8780        |         |                |         | 1255   | 5750  |                            |         | 34094  |         | 34094         | 11.8                                |
| 1985                               | 20200 |         | 9570        |         |                |         | 1400   | 5550  |                            |         | 36720  |         | 36720         | 7.7                                 |
| 1986                               | 22860 |         | 7160        |         |                |         | 1508   | 7517  |                            |         | 39045  |         | 39045         | 6.3                                 |
| 1987                               | 25360 |         | 7305        |         |                |         | 1499   | 8390  |                            |         | 42554  |         | 42554         | 9.0                                 |
| 1988                               | 26968 |         | 8146        |         |                |         | 1350   | 7311  |                            |         | 43775  |         | 43775         | 2.9                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 9.7    | 9.7     |               |                                     |
| 1989                               | 33056 |         | 6974        |         |                |         | 1173   | 7522  |                            |         | 48725  |         | 48725         | 11.3                                |
| 1990                               | 38836 |         | 8723        |         |                |         | 1254   | 6083  |                            |         | 54896  |         | 54896         | 12.7                                |
| 1991                               | 41947 |         | 9463        |         |                |         | 1244   | 7056  |                            |         | 59710  |         | 59710         | 8.8                                 |
| 1992                               | 42362 |         | 10866       |         |                |         | 1224   | 9530  |                            |         | 63982  |         | 63982         | 7.2                                 |
| 1993                               | 48166 |         | 12419       |         |                |         | 927    | 9823  |                            |         | 71335  |         | 71335         | 11.5                                |
| 1994                               | 53376 |         | 15402       |         |                |         | 863    | 7445  |                            |         | 77086  |         | 77086         | 8.1                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 9.9    | 9.9     |               |                                     |
| 1995                               | 55901 |         | 16145       |         |                |         | 723    | 7275  |                            |         | 80044  |         | 80044         | 3.8                                 |
| 1996                               | 62364 |         | 15475       |         |                |         | 610    | 7376  |                            |         | 85825  |         | 85825         | 7.2                                 |
| 1997                               | 65628 |         | 14953       |         | 4345           |         | 476    | 6908  |                            |         | 92310  |         | 92310         | 7.6                                 |
| 1998                               | 63988 |         | 17361       |         | 9125           |         | 373    | 7015  |                            |         | 97862  |         | 97862         | 6.0                                 |
| 1999                               | 70689 |         | 18830       |         | 12326          |         | 419    | 4943  |                            |         | 107207 |         | 107207        | 9.5                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 6.8    | 6.8     |               |                                     |
| 2000*                              | 78332 | 2378    | 20510       | 355     | 12855          |         | 361    | 3650  |                            |         | 115708 | 2733    | 118441        | 10.5                                |
| 2001                               | 81103 | 2407    | 19888       | 456     | 17899          |         | 328    | 5057  | 31                         |         | 124306 | 2863    | 127169        | 7.4                                 |
| 2002                               | 81983 | 2277    | 17171       | 360     | 27586          |         | 356    | 8050  | 31                         |         | 135177 | 2638    | 137814        | 8.4                                 |
| 2003                               | 85403 | 2267    | 17276       | 421     | 32895          |         | 290    | 11094 | 30                         |         | 146988 | 2688    | 149676        | 8.6                                 |
| 2004                               | 88644 | 2072    | 24210       | 769     | 36250          |         | 252    | 10627 | 47                         |         | 160030 | 2841    | 162871        | 8.8                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 8.3    | 8.7     |               |                                     |
| 2005                               | 89574 | 3809    | 29023       | 3106    | 36194          |         | 212    | 16085 | 69                         |         | 171157 | 6915    | 178072        | 9.3                                 |
| 2006                               | 88962 | 3519    | 33758       | 7477    | 40343          |         | 220    | 18169 | 86                         |         | 181538 | 10997   | 192535        | 8.1                                 |
| 2007                               | 90900 | 3328    | 26979       | 10625   | 53796          |         | 225    | 17987 | 141                        |         | 190028 | 13953   | 203983        | 5.9                                 |
| 2008                               | 94012 | 3189    | 36521       | 18390   | 57015          |         | 204    | 4753  | 196                        |         | 192701 | 21579   | 214280        | 5.2                                 |
| 2009                               | 92252 | 3519    | 31629       | 22217   | 64142          |         | 124    | 7207  | 224                        |         | 195578 | 25736   | 221314        | 3.2                                 |
| 2010                               | 90348 | 3725    | 33646       | 24754   | 70658          |         | 128    | 9523  | 212                        |         | 204515 | 28479   | 232994        | 5.3                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | 4.2    | 6.1     |               |                                     |
| 2011                               | 92554 | 3347    | 30413       | 28303   | 72749          |         | 62     | 12058 | 578                        |         | 208414 | 31650   | 240063        | 3.0                                 |
| 2012                               | 88475 | 3313    | 34249       | 33115   | 79685          | 849     | 66     | 12447 | 2067                       |         | 216988 | 37277   | 254265        | 5.9                                 |
| 2013                               | 65266 | 24398   | 23471       | 42568   | 21514          | 65621   | 71     | 14470 | 4747                       | 66      | 129539 | 132653  | 262192        | 3.1                                 |
| 2014                               | 60036 | 25587   | 21617       | 51723   | 22863          | 73960   | 83     | 13862 | 4689                       | 59      | 123150 | 151330  | 274480        | 4.7                                 |
| 2015                               | 61669 | 25299   | 21339       | 54084   | 22961          | 77975   | 65     | 14087 | 3094                       | 115     | 123215 | 15473   | 280689        | 2.3                                 |

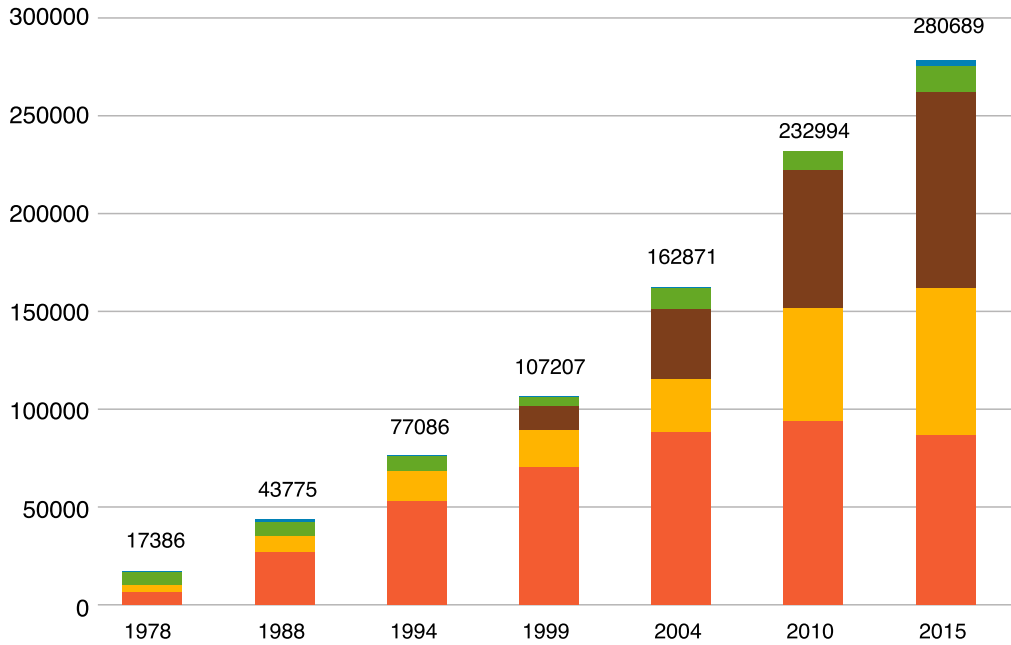
\* Data related to operating gas units in C.C power plants related to previous years is included in gas power plants

\*\* Respectively, beginning of 1st, 2nd, 3rd, 4th and 5th plans

(GWH)

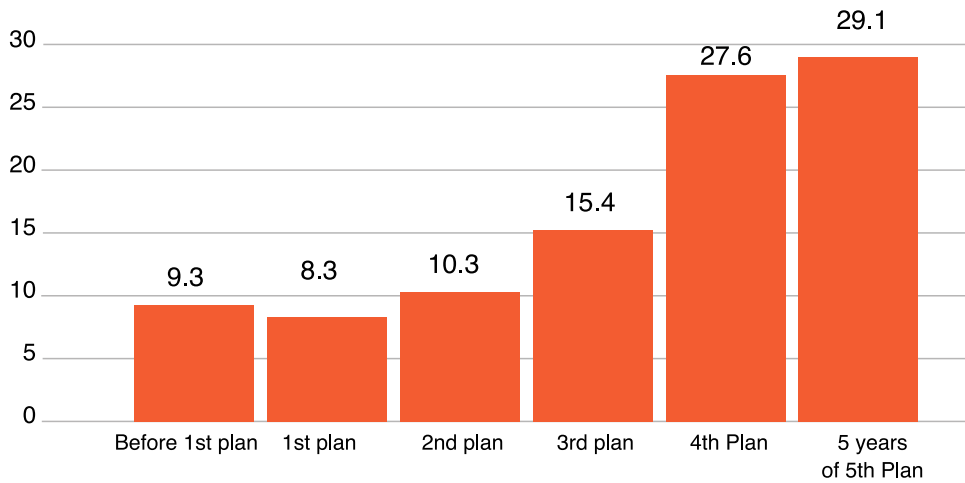
### Gross Power Generation by Power Plants Types

Steam ■ Gas ■ Combined Cycle ■ Hydro ■ Diesel, Nuclear & Renewable Energy ■



(%)

### Contribution of Gross Generation of Power Plants



## Net Power Generation

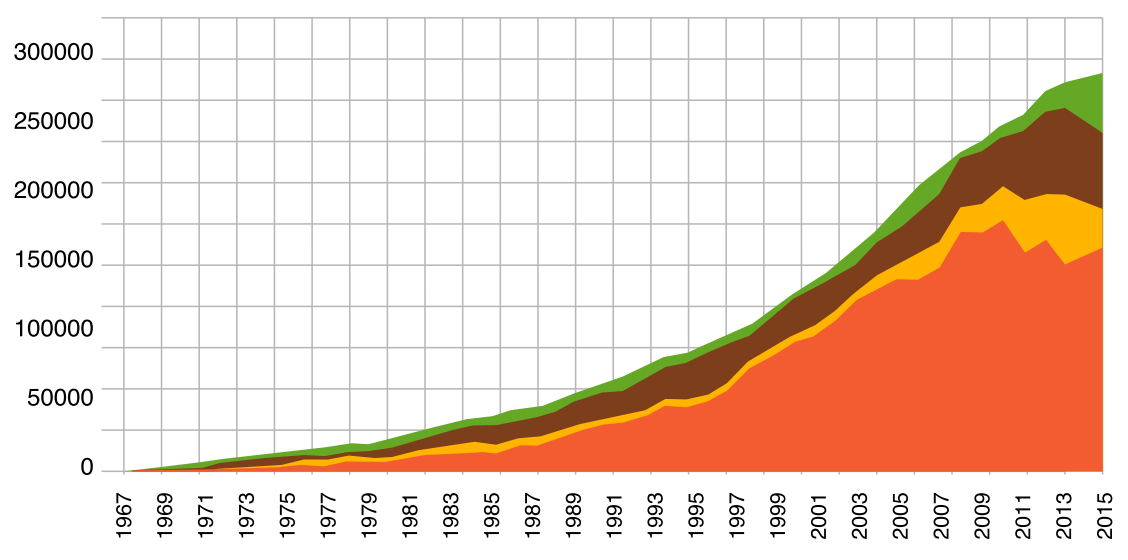
(GWH)

| Year                               | Steam |         | Gas Turbine |         | Combined Cycle |         | Diesel | Hydro | Nuclear & Renewable Energy |         | Total       |             | Whole Country | Growth Compared to Previous Year(%) |
|------------------------------------|-------|---------|-------------|---------|----------------|---------|--------|-------|----------------------------|---------|-------------|-------------|---------------|-------------------------------------|
|                                    | MOE   | non MOE | MOE         | non MOE | MOE            | non MOE |        |       | MOE                        | non MOE | MOE         | non MOE     |               |                                     |
| 1967                               | 691   |         | 54          |         |                |         | 364    | 631   |                            |         | 1740        |             | 1740          | -                                   |
| 1968                               | 991   |         | 75          |         |                |         | 369    | 844   |                            |         | 2279        |             | 2279          | 31.0                                |
| 1969                               | 1224  |         | 83          |         |                |         | 405    | 1305  |                            |         | 3017        |             | 3017          | 32.4                                |
| 1970                               | 1830  |         | 150         |         |                |         | 417    | 1638  |                            |         | 4035        |             | 4035          | 33.7                                |
| 1971                               | 1930  |         | 189         |         |                |         | 485    | 2639  |                            |         | 5243        |             | 5243          | 29.9                                |
| 1972                               | 2328  |         | 258         |         |                |         | 531    | 3477  |                            |         | 6594        |             | 6594          | 25.8                                |
| 1973                               | 4985  |         | 530         |         |                |         | 542    | 2784  |                            |         | 8841        |             | 8841          | 34.1                                |
| 1974                               | 6042  |         | 679         |         |                |         | 485    | 3367  |                            |         | 10573       |             | 10573         | 19.6                                |
| 1975                               | 7209  |         | 944         |         |                |         | 563    | 3392  |                            |         | 12108       |             | 12108         | 14.5                                |
| 1976                               | 7819  |         | 1100        |         |                |         | 624    | 3919  |                            |         | 13462       |             | 13462         | 11.2                                |
| 1977                               | 7585  |         | 2536        |         |                |         | 742    | 4152  |                            |         | 15015       |             | 15015         | 11.5                                |
| 1978                               | 5748  |         | 3858        |         |                |         | 838    | 6107  |                            |         | 16551       |             | 16551         | 10.2                                |
| <b>Average Annual Growth (%)</b>   |       |         |             |         |                |         |        |       |                            |         | <b>22.7</b> | <b>22.7</b> |               |                                     |
| 1979                               | 7106  |         | 5273        |         |                |         | 866    | 5356  |                            |         | 18601       |             | 18601         | 12.4                                |
| 1980                               | 7570  |         | 5042        |         |                |         | 913    | 5566  |                            |         | 19091       |             | 19091         | 2.6                                 |
| 1981                               | 8457  |         | 5853        |         |                |         | 1056   | 6175  |                            |         | 21541       |             | 21541         | 12.8                                |
| 1982                               | 11673 |         | 6111        |         |                |         | 1094   | 6396  |                            |         | 25274       |             | 25274         | 17.3                                |
| 1983                               | 15166 |         | 6781        |         |                |         | 1100   | 6154  |                            |         | 29201       |             | 29201         | 15.5                                |
| 1984                               | 17081 |         | 8723        |         |                |         | 1159   | 5689  |                            |         | 32652       |             | 32652         | 11.8                                |
| 1985                               | 18854 |         | 9523        |         |                |         | 1306   | 5509  |                            |         | 35192       |             | 35192         | 7.8                                 |
| 1986                               | 21296 |         | 7122        |         |                |         | 1407   | 7476  |                            |         | 37301       |             | 37301         | 6.0                                 |
| 1987                               | 23556 |         | 7086        |         |                |         | 1403   | 8352  |                            |         | 40397       |             | 40397         | 8.3                                 |
| 1988                               | 25058 |         | 8053        |         |                |         | 1274   | 7270  |                            |         | 41655       |             | 41655         | 3.1                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>9.7</b>  | <b>9.7</b>  |               |                                     |
| 1989                               | 30762 |         | 6915        |         |                |         | 1098   | 7375  |                            |         | 46150       |             | 46150         | 10.8                                |
| 1990                               | 36106 |         | 8650        |         |                |         | 1179   | 6047  |                            |         | 51982       |             | 51982         | 12.6                                |
| 1991                               | 39170 |         | 9392        |         |                |         | 1169   | 7011  |                            |         | 56742       |             | 56742         | 9.2                                 |
| 1992                               | 39371 |         | 10791       |         |                |         | 1150   | 9262  |                            |         | 60574       |             | 60574         | 6.8                                 |
| 1993                               | 44964 |         | 12323       |         |                |         | 869    | 9773  |                            |         | 67929       |             | 67929         | 12.1                                |
| 1994                               | 50004 |         | 15268       |         |                |         | 807    | 7391  |                            |         | 73470       |             | 73470         | 8.2                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>9.9</b>  | <b>9.9</b>  |               |                                     |
| 1995                               | 52253 |         | 15977       |         |                |         | 673    | 7231  |                            |         | 76134       |             | 76134         | 3.6                                 |
| 1996                               | 58085 |         | 15281       |         |                |         | 565    | 7326  |                            |         | 81257       |             | 81257         | 6.7                                 |
| 1997                               | 61298 |         | 14858       |         | 4263           |         | 442    | 6857  |                            |         | 87718       |             | 87718         | 8.0                                 |
| 1998                               | 59889 |         | 17256       |         | 8953           |         | 347    | 6961  |                            |         | 93406       |             | 93406         | 6.5                                 |
| 1999                               | 66127 |         | 18703       |         | 12122          |         | 390    | 4906  |                            |         | 102248      |             | 102248        | 9.5                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>6.8</b>  | <b>6.8</b>  |               |                                     |
| 2000*                              | 73288 | 2202    | 20286       | 353     | 12725          |         | 334    | 3615  |                            |         | 110248      | 2555        | 112803        | 10.3                                |
| 2001                               | 75671 | 2228    | 19759       | 454     | 17575          |         | 304    | 5024  | 31                         |         | 118364      | 2682        | 121046        | 7.3                                 |
| 2002                               | 76441 | 2099    | 17069       | 359     | 27121          |         | 330    | 7996  | 31                         |         | 128989      | 2458        | 131446        | 8.6                                 |
| 2003                               | 79622 | 2108    | 17163       | 420     | 32256          |         | 268    | 11022 | 30                         |         | 140361      | 2528        | 142888        | 8.7                                 |
| 2004                               | 82609 | 1913    | 24067       | 768     | 35564          |         | 234    | 10556 | 47                         |         | 153077      | 2680        | 155757        | 9.0                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>8.4</b>  | <b>8.8</b>  |               |                                     |
| 2005                               | 83423 | 3541    | 28845       | 3088    | 35544          |         | 197    | 15924 | 69                         |         | 164002      | 6629        | 170631        | 9.5                                 |
| 2006                               | 82930 | 3261    | 33551       | 7027    | 39652          |         | 204    | 18051 | 86                         |         | 174474      | 10288       | 184762        | 8.3                                 |
| 2007                               | 84850 | 3084    | 26788       | 10187   | 52941          |         | 210    | 17877 | 141                        |         | 182807      | 13271       | 196078        | 6.1                                 |
| 2008                               | 87678 | 2974    | 36289       | 17883   | 56023          |         | 190    | 4956  | 196                        |         | 185065      | 20857       | 206189        | 5.2                                 |
| 2009                               | 86000 | 3281    | 31416       | 21548   | 63114          |         | 116    | 7149  | 228                        |         | 188023      | 24829       | 212852        | 3.2                                 |
| 2010                               | 84181 | 3472    | 33425       | 24514   | 69542          |         | 119    | 9448  | 211                        |         | 196926      | 27986       | 224912        | 5.7                                 |
| <b>**Average Annual Growth (%)</b> |       |         |             |         |                |         |        |       |                            |         | <b>4.3</b>  | <b>6.3</b>  |               |                                     |
| 2011                               | 86243 | 3115    | 30180       | 28077   | 71389          |         | 58     | 11986 | 574                        |         | 200430      | 31191       | 231621        | 3.0                                 |
| 2012                               | 82426 | 3057    | 34000       | 32870   | 78207          | 846     | 62     | 12378 | 2067                       |         | 209140      | 36773       | 245913        | 6.2                                 |
| 2013                               | 60575 | 22544   | 23310       | 42238   | 21110          | 64463   | 66     | 14392 | 4701                       | 66      | 124154      | 129311      | 253465        | 3.1                                 |
| 2014                               | 56089 | 23608   | 21479       | 51201   | 22457          | 72620   | 76     | 13778 | 4689                       | 59      | 118568      | 147488      | 266056        | 5.0                                 |
| 2015                               | 57727 | 23762   | 21201       | 53738   | 22573          | 76517   | 60     | 14012 | 3094                       | 115     | 118667      | 154134      | 272801        | 2.5                                 |

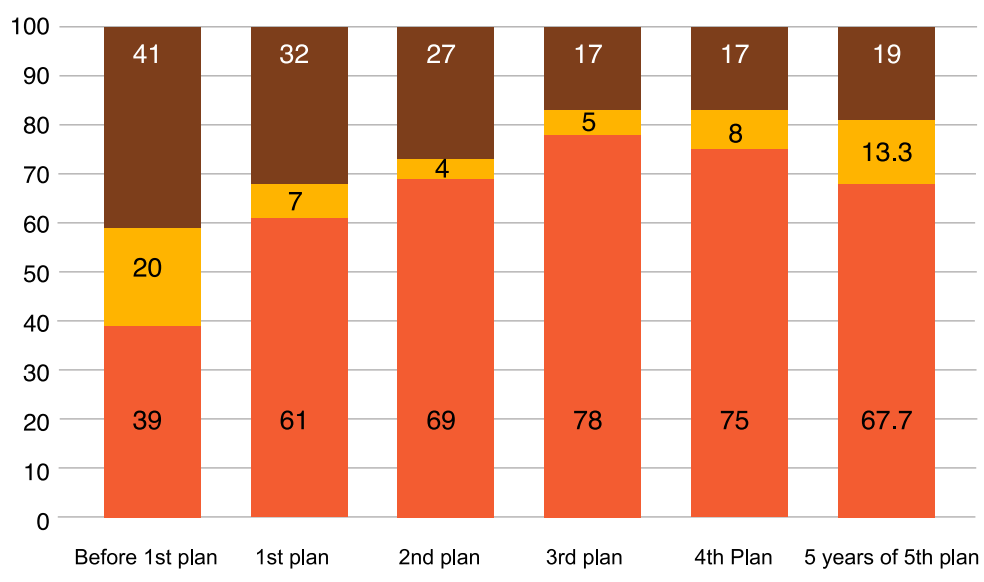
\* Data related to operating gas units in C.C power plants related to previous years is included in gas power plants

\*\* Respectively, beginning of 1st, 2nd, 3rd, 4th and 5th plans

(GWH) **Trend of Power Generation of Thermal and Non-Thermal Power Plants by Fuel Types**



(%) **Contribution of Fuel Consumption**



## Fuel Consumption of Power Plants

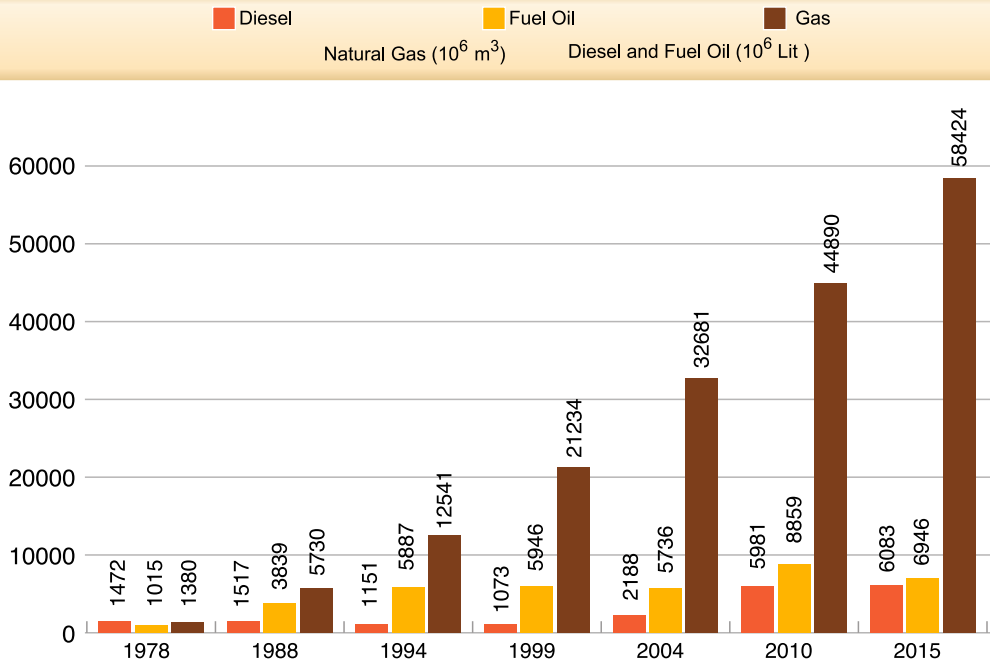
| Year                               | MOE                          |                                |   | non-MOE                      |                                |   | Fuel's Total Thermal Value (10 <sup>9</sup> Kcal) |
|------------------------------------|------------------------------|--------------------------------|---|------------------------------|--------------------------------|---|---|
|                                    | Diesel (10 <sup>6</sup> lit) | Fuel Oil (10 <sup>6</sup> lit) | Natural Gas (10 <sup>6</sup> M <sup>3</sup> ) | Diesel (10 <sup>6</sup> lit) | Fuel Oil (10 <sup>6</sup> lit) | Natural Gas (10 <sup>6</sup> M <sup>3</sup> ) |   |
| 1967                               | 136                          | 311                            | 13  |                              |                                |   | 4358  |
| 1968                               | 118                          | 420                            | 33  |                              |                                |   | 5431  |
| 1969                               | 128                          | 496                            | 21  |                              |                                |   | 6150  |
| 1970                               | 165                          | 672                            | 22  |                              |                                |   | 8192  |
| 1971                               | 166                          | 597                            | 163   |                              |                                |   | 8797  |
| 1972                               | 192                          | 514                            | 346   |                              |                                |   | 9942  |
| 1973                               | 317                          | 899                            | 723   |                              |                                |   | 18389   |
| 1974                               | 399                          | 846                            | 944   |                              |                                |   | 20705   |
| 1975                               | 405                          | 1283                           | 1077  |                              |                                |   | 26249   |
| 1976                               | 500                          | 1454                           | 1116  |                              |                                |   | 29131   |
| 1977                               | 990                          | 1145                           | 1533  |                              |                                |   | 34524   |
| 1978                               | 1472                         | 1015                           | 1380  |                              |                                |   | 36200   |
| <b>Average Annual Growth (%)</b>   |                              |                                |   |                              |                                |   | <b>21.2</b>                                       |
| 1979                               | 1398                         | 1064                           | 2335  |                              |                                |   | 43827   |
| 1980                               | 983                          | 1473                           | 2278  |                              |                                |   | 43494   |
| 1981                               | 948                          | 1900                           | 2360  |                              |                                |   | 47865   |
| 1982                               | 1010                         | 1947                           | 3177  |                              |                                |   | 56719   |
| 1983                               | 1280                         | 2618                           | 3621  |                              |                                |   | 69238   |
| 1984                               | 1622                         | 3183                           | 3885  |                              |                                |   | 79823   |
| 1985                               | 2191                         | 3568                           | 3993  |                              |                                |   | 89216   |
| 1986                               | 1642                         | 4150                           | 3856  |                              |                                |   | 88550   |
| 1987                               | 1480                         | 3559                           | 5451  |                              |                                |   | 96930   |
| 1988                               | 1517                         | 3839                           | 5730  |                              |                                |   | 102696  |
| <b>**Average Annual Growth (%)</b> |                              |                                |   |                              |                                |   | <b>11.0</b>                                       |
| 1989                               | 1259                         | 4101                           | 6863  |                              |                                |   | 113483  |
| 1990                               | 1143                         | 4810                           | 8316  |                              |                                |   | 135951  |
| 1991                               | 965                          | 5144                           | 9099  |                              |                                |   | 144964  |
| 1992                               | 1103                         | 4853                           | 9858  |                              |                                |   | 150718  |
| 1993                               | 1073                         | 5786                           | 10910   |                              |                                |   | 171398  |
| 1994                               | 1151                         | 5887                           | 12541   |                              |                                |   | 182866  |
| <b>**Average Annual Growth (%)</b> |                              |                                |   |                              |                                |   | <b>10.1</b>                                       |
| 1995                               | 1411                         | 6700                           | 12598   |                              |                                |   | 194577  |
| 1996                               | 1014                         | 7446                           | 13443   |                              |                                |   | 205737  |
| 1997                               | 1161                         | 7038                           | 15604   |                              |                                |   | 224128  |
| 1998                               | 796                          | 4870                           | 19403   |                              |                                |   | 232677  |
| 1999                               | 1073                         | 5946                           | 21234   |                              |                                |   | 248179  |
| <b>**Average Annual Growth (%)</b> |                              |                                |   |                              |                                |   | <b>6.3</b>  |
| 2000                               | 1260                         | 6492                           | 21923   | 23                           |                                | 960   | 278102  |
| 2001                               | 1618                         | 6799                           | 24012   | 49                           |                                | 989   | 295114  |
| 2002                               | 1608                         | 6275                           | 26693   | 44                           |                                | 905   | 304067  |
| 2003                               | 1432                         | 4938                           | 29429   | 7                            |                                | 839   | 320662  |
| 2004                               | 2179                         | 5736                           | 31796   | 9                            |                                | 885   | 358724*   |
| <b>**Average Annual Growth (%)</b> |                              |                                |   |                              |                                |   | <b>7.6</b>  |
| 2005                               | 2612                         | 6329                           | 32832   | 37                           |                                | 2221  | 390111  |
| 2006                               | 4362                         | 7587                           | 32168   | 340                          |                                | 3071  | 422992  |
| 2007                               | 4083                         | 8435                           | 33265   | 474                          |                                | 3712  | 446059  |
| 2008                               | 3427                         | 8911                           | 37865   | 971                          |                                | 5546  | 499902  |
| 2009                               | 3802                         | 9541                           | 36501   | 1132                         |                                | 6903  | 510242  |
| 2010                               | 4507                         | 8859                           | 37405   | 1411                         |                                | 7485  | 525099  |
| <b>**Average Annual Growth (%)</b> |                              |                                |   |                              |                                |   | <b>6.6</b>  |
| 2011                               | 7255                         | 12019                          | 31390   | 2151                         |                                | 7511  | 530623  |
| 2012                               | 6020                         | 14450                          | 31321   | 1748                         |                                | 9371  | 554963  |
| 2013                               | 3400                         | 10816                          | 15205   | 8786                         | 4447                           | 21443   | 565332  |
| 2014                               | 2103                         | 8228                           | 18287   | 6768                         | 2045                           | 31885   | 606708  |
| 2015                               | 1303                         | 6194                           | 21570   | 4780                         | 752                            | 36854   | 606045  |

\* Since 2004 thermal value of natural gas base on normal volume.

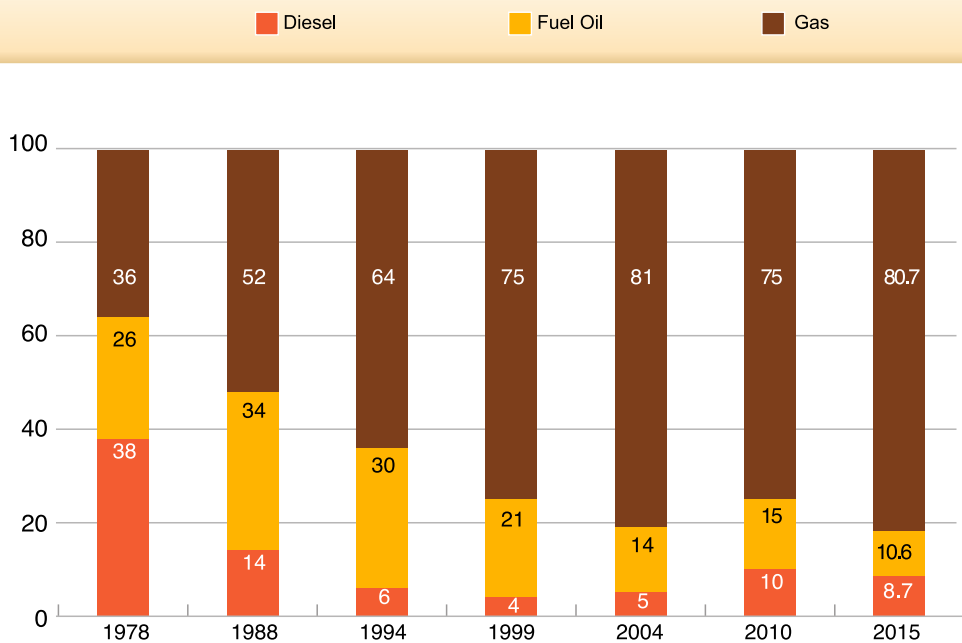
\*\* Respectively, beginning of 1st, 2nd, 3rd, 4th and 5th plans



## Fuel Consumption of Power Plants



## (%) Contribution of Fuel in Power Generation by Thermal Power Plants



The calorific value of various fuels in different years are assumed to be the same

## Max. Generated and Supplied Power and Power Demand

(MW)

| Year                             | Max Generated Power |                        |                  | Month       | Max Supplied Power | Month      | Max Demand (Peak Load) | Max Industrial Demand** | Generation Load Factor(%) |       |
|----------------------------------|---------------------|------------------------|------------------|-------------|--------------------|------------|------------------------|-------------------------|---------------------------|-------|
|                                  | Month               | Interconnected Network | Isolated Network |             |                    |            |                        |                         |                           | Total |
| 1967                             | July                | 285                    | 243              | 528         |                    | 528        |                        |                         | 39.8                      |       |
| 1968                             | August              | 340                    | 269              | 609         |                    | 609        |                        |                         | 45.6                      |       |
| 1969                             | July                | 390                    | 393              | 783         |                    | 783        |                        |                         | 46.6                      |       |
| 1970                             | August              | 604                    | 394              | 998         |                    | 998        |                        |                         | 48.7                      |       |
| 1971                             | October             | 912                    | 327              | 1239        |                    | 1239       |                        |                         | 50.6                      |       |
| 1972                             | February            | 1052                   | 409              | 1461        |                    | 1461       |                        |                         | 53.7                      |       |
| 1973                             | September           | 1391                   | 450              | 1841        |                    | 1841       |                        |                         | 57.8                      |       |
| 1974                             | September           | 1658                   | 528              | 2186        |                    | 2186       |                        |                         | 58.3                      |       |
| 1975                             | July                | 1946                   | 626              | 2572        |                    | 2572       |                        |                         | 56.6                      |       |
| 1976                             | July                | 2095                   | 642              | 2737        |                    | 2737       |                        |                         | 59.2                      |       |
| 1977                             | September           | 2195                   | 618              | 2813        |                    | 2813       |                        |                         | 62.5                      |       |
| 1978                             | July                | 2862                   | 624              | 3486        |                    | 3486       |                        |                         | 56.9                      |       |
| <b>Average Annual Growth (%)</b> |                     |                        |                  | <b>18.7</b> | <b>18.7</b>        |            |                        |                         |                           |       |
| 1979                             | August              | 3119                   | 502              | 3621        |                    | 3621       |                        |                         | 61.2                      |       |
| 1980                             | July                | 3526                   | 617              | 4143        |                    | 4143       |                        |                         | 54.7                      |       |
| 1981                             | February            | 3536                   | 693              | 4229        |                    | 4229       |                        |                         | 60.5                      |       |
| 1982                             | February            | 4186                   | 737              | 4923        |                    | 4923       |                        |                         | 61.0                      |       |
| 1983                             | August              | 4702                   | 880              | 5582        |                    | 5582       |                        |                         | 62.2                      |       |
| 1984                             | July                | 5353                   | 980              | 6333        |                    | 6333       |                        |                         | 61.5                      |       |
| 1985                             | August              | 5419                   | 1187             | 6606        |                    | 6606       |                        |                         | 63.5                      |       |
| 1986                             | July                | 6678                   | 786              | 7464        |                    | 7464       |                        |                         | 59.7                      |       |
| 1987                             | September           | 6849                   | 894              | 7743        |                    | 7743       |                        |                         | 62.4                      |       |
| 1988                             | September           | 6885                   | 877              | 7762        |                    | 7762       |                        |                         | 64.4                      |       |
| <b>Average Annual Growth (%)</b> |                     |                        |                  | <b>8.3</b>  | <b>8.3</b>         |            |                        |                         |                           |       |
| 1989                             | August              | 8003                   | 908              | 8911        |                    | 8911       |                        |                         | 62.4                      |       |
| 1990                             | September           | 8541                   | 996              | 9537        |                    | 9537       | July                   | 10392                   | 272                       | 66.1  |
| 1991                             | August              | 9823                   | 1116             | 10939       |                    | 10939      | August                 | 11209                   | 483                       | 62.1  |
| 1992                             | August              | 10702                  | 1248             | 11950       |                    | 11950      | July                   | 12065                   | 684                       | 60.9  |
| 1993                             | August              | 12004                  | 1304             | 13308       |                    | 13308      | August                 | 13384                   | 669                       | 62.9  |
| 1994                             | August              | 13043                  | 1301             | 14344       |                    | 14344      | August                 | 14369                   | 956                       | 61.0  |
| <b>Average Annual Growth (%)</b> |                     |                        |                  | <b>10.9</b> | <b>10.8</b>        |            |                        |                         |                           |       |
| 1995                             | August              | 13876                  | 1367             | 15243       |                    | 15243      | August                 | 15251                   | 1203                      | 59.8  |
| 1996                             | August              | 14562                  | 1465             | 16027       |                    | 16027      | August                 | 16109                   | 1247                      | 60.8  |
| 1997                             | July                | 15731                  | 1633             | 17364       |                    | 17364      | July                   | 17513                   | 1301                      | 60.9  |
| 1998                             | July                | 16372                  | 1716             | 18088       |                    | 18088      | Sep.                   | 18821                   | 807                       | 61.8  |
| 1999                             | August              | 18893                  | 345              | 19238       | August             | 19402      | Sep.                   | 19805                   | 923                       | 63.6  |
| <b>Average Annual Growth (%)</b> |                     |                        |                  | <b>5.9</b>  | <b>6.2</b>         | <b>6.6</b> |                        |                         |                           |       |
| 2000*                            | July                | 20548                  | 61               | 20609       | July               | 20716      | August                 | 21347                   | 1166                      | 64.0  |
| 2001                             | August              | 21790                  | 63               | 21853       | August             | 22169      | August                 | 23062                   | 1069                      | 64.9  |
| 2002                             | August              | 23414                  | 80               | 23494       | August             | 23765      | August                 | 24750                   | 942                       | 66.9  |
| 2003                             | August              | 26140                  | 76               | 26216       | August             | 26703      | August                 | 27107                   | 1325                      | 65.2  |
| 2004                             | August              | 27520                  | 80               | 27600       | August             | 28224      | Sep.                   | 29267                   | 1557                      | 67.2  |
| <b>Average Annual Growth (%)</b> |                     |                        |                  | <b>7.5</b>  | <b>7.8</b>         | <b>8.1</b> |                        |                         |                           |       |
| 2005                             | August              | 30669                  | 85               | 30754       | August             | 31306      | August                 | 32302                   | 1527                      | 66.1  |
| 2006                             | September           | 32908                  | 89               | 32997       | Sep.               | 34069      | Sep.                   | 34594                   | 1780                      | 65.9  |
| 2007                             | August              | 34478                  | 103              | 34581       | August             | 34850      | August                 | 34983                   | 1952                      | 67.3  |
| 2008                             | July                | 34167                  | 103              | 34270       | August             | 34333      | August                 | 37651                   | 1981                      | 71.3  |
| 2009                             | August              | 37472                  | 108              | 37580       | August             | 37878      | August                 | 37878                   | 2649                      | 67.0  |
| 2010                             | August              | 38778                  | 113              | 38891       | August             | 39441      | July                   | 40239                   | 1938                      | 68.4  |
| <b>Average Annual Growth (%)</b> |                     |                        |                  | <b>5.9</b>  | <b>5.7</b>         | <b>5.4</b> |                        |                         |                           |       |
| 2011                             | August              | 42126                  | 119              | 42245       | August             | 42367      | August                 | 42367                   | 2628                      | 64.9  |
| 2012                             | August              | 43121                  | 122              | 43243       | August             | 43459      | August                 | 43459                   | 2896                      | 66.9  |
| 2013                             | July                | 45529                  | 130              | 45659       | July               | 46474      | July                   | 46474                   | 2831                      | 65.6  |
| 2014                             | August              | 47268                  | 139              | 47407       | August             | 46828      | August                 | 48937                   | 2659                      | 67.1  |
| 2015                             | August              | 49075                  | 155              | 49230       | August             | 49351      | July                   | 50321                   | 3333                      | 65.2  |

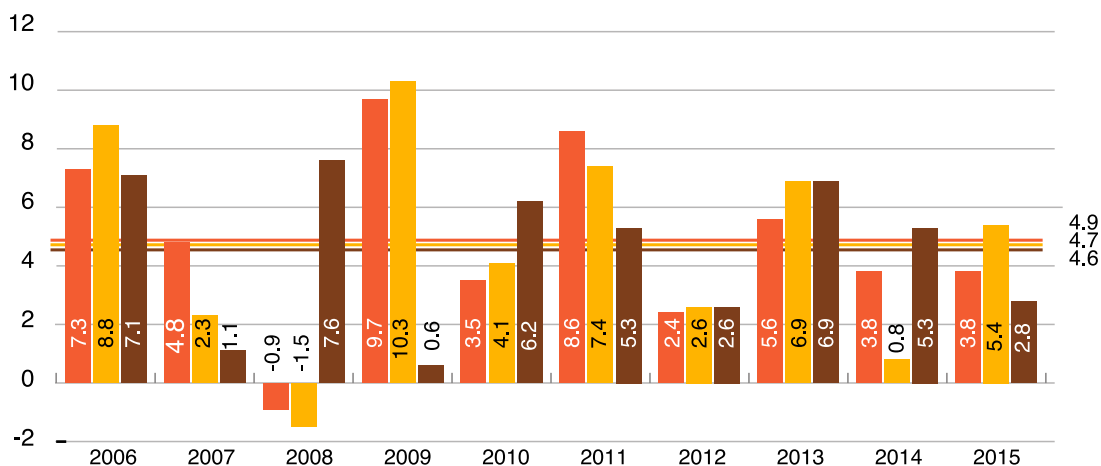
\*Significant increase, decrease of figure is due to connection of Sistan & Balouchestan network to NG in June 2000

\*\* Industrial demand in total peak load

Max. supplied power= Max generated power capacity + imported power

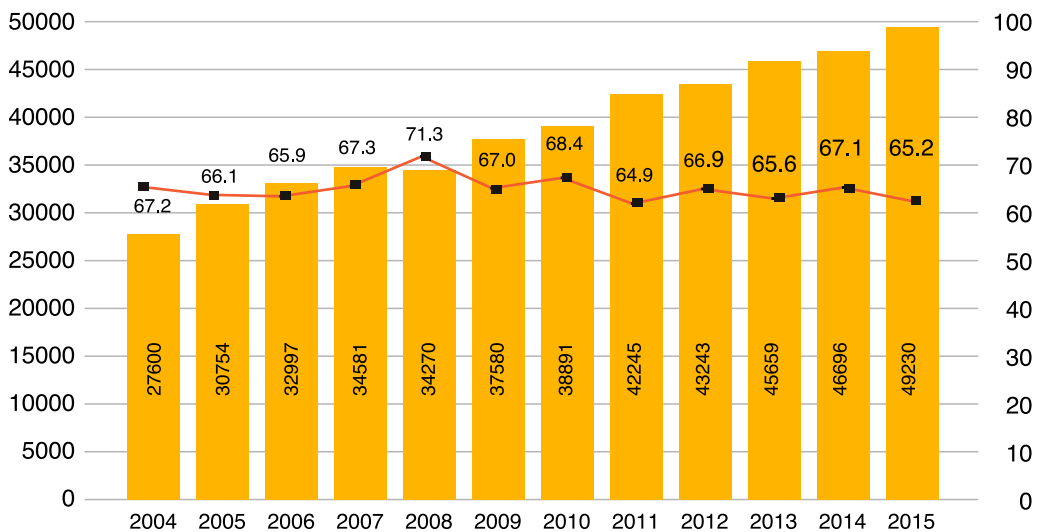
(%) **Annual Increasing Trend of Power Generation ,Supplied Power & Power Demand**

Max Generated Power ■ Max Supplied Power ■ Max Power Demand ■ Average Growth ▬



(MW) **Trend of Max Power Generation & Load Factor**

Max Power Generation ■ Load Factor (%) ▬



## Number & Capacity of Transmission Transformers

| Year                    | 400 kv      |      |         |      |           |      | 230 kv      |      |         |      |           |      |
|-------------------------|-------------|------|---------|------|-----------|------|-------------|------|---------|------|-----------|------|
|                         | Transformer |      | Reactor |      | Capacitor |      | Transformer |      | Reactor |      | Capacitor |      |
|                         | MVA         | No   | Mvar    | No   | Mvar      | No   | MVA         | No   | Mvar    | No   | Mvar      | No   |
| 1967                    |             |      |         |      |           |      | 690         | 5    |         |      |           |      |
| 1968                    |             |      |         |      |           |      | 1200        | 11   | 30      | 2    | 20        | 2    |
| 1969                    |             |      |         |      |           |      | 2010        | 19   | 30      | 2    | 60        | 4    |
| 1970                    |             |      |         |      |           |      | 2415        | 33   | 30      | 2    | 60        | 4    |
| 1971                    |             |      |         |      |           |      | 2415        | 33   | 30      | 2    | 60        | 4    |
| 1972                    |             |      |         |      |           |      | 4025        | 42   | 123     | 5    | 65        | 5    |
| 1973                    |             |      |         |      |           |      | 4915        | 49   | 123     | 5    | 125       | 9    |
| 1974                    |             |      |         |      |           |      | 5565        | 54   | 123     | 5    | 145       | 11   |
| 1975                    |             |      |         |      |           |      | 6265        | 58   | 123     | 5    | 165       | 13   |
| 1976                    |             |      |         |      |           |      | 6445        | 60   | 123     | 5    | 165       | 13   |
| 1977                    | 800         | 4    |         |      | 200       | 8    | 7155        | 69   | 123     | 5    | 165       | 13   |
| 1978                    | 1300        | 5    | 150     | 3    | 200       | 8    | 7850        | 74   | 123     | 5    | 165       | 13   |
| Average Annual Growth % | 62.5        | 25.0 |         | 0.0  | 0.0       | 0.0  | 24.7        | 27.8 | 15.2    | 9.6  | 23.5      | 20.6 |
| 1979                    | 2900        | 11   | 290     | 7    | 200       | 8    | 8860        | 86   | 150     | 7    | 180       | 14   |
| 1980                    | 3900        | 13   | 640     | 16   | 200       | 8    | 9270        | 90   | 150     | 7    | 180       | 14   |
| 1981                    | 5900        | 17   | 740     | 20   | 450       | 12   | 9513        | 94   | 150     | 7    | 195       | 15   |
| 1982                    | 6350        | 20   | 790     | 21   | 450       | 12   | 10948       | 108  | 246     | 15   | 195       | 15   |
| 1983                    | 6750        | 22   | 940     | 26   | 450       | 12   | 11408       | 112  | 266     | 16   | 195       | 15   |
| 1984                    | 6750        | 22   | 940     | 26   | 450       | 12   | 13039       | 124  | 326     | 19   | 195       | 15   |
| 1985                    | 8950        | 28   | 1600    | 32   | 514       | 13   | 14675       | 140  | 326     | 19   | 195       | 15   |
| 1986                    | 10950       | 32   | 1850    | 37   | 514       | 13   | 15640       | 148  | 359     | 21   | 195       | 15   |
| 1987                    | 11250       | 34   | 1850    | 37   | 514       | 13   | 16590       | 157  | 359     | 21   | 195       | 15   |
| 1988                    | 11250       | 34   | 1850    | 37   | 514       | 13   | 17720       | 168  | 359     | 21   | 195       | 15   |
| Average Annual Growth % | 24.1        | 21.1 | 28.6    | 28.6 | 9.9       | 5.0  | 8.5         | 8.5  | 11.3    | 15.4 | 1.7       | 1.4  |
| 1989                    | 11850       | 37   | 1850    | 37   | 514       | 13   | 18755       | 175  | 389     | 23   | 195       | 15   |
| 1990                    | 12730       | 41   | 1850    | 37   | 514       | 13   | 20640       | 193  | 419     | 25   | 195       | 15   |
| 1991                    | 12730       | 41   | 1850    | 37   | 514       | 13   | 21080       | 199  | 419     | 25   | 195       | 15   |
| 1992                    | 13430       | 45   | 2000    | 40   | 514       | 13   | 22115       | 208  | 545     | 33   | 195       | 15   |
| 1993                    | 13730       | 47   | 2050    | 41   | 514       | 13   | 24060       | 225  | 594     | 36   | 195       | 15   |
| 1994                    | 13730       | 47   | 2050    | 41   | 514       | 13   | 26132       | 243  | 594     | 36   | 195       | 15   |
| Average Annual Growth % | 3.4         | 5.5  | 1.7     | 1.7  | 0.0       | 0.0  | 6.7         | 6.3  | 8.8     | 9.4  | 0.0       | 0.0  |
| 1995                    | 14930       | 52   | 2125    | 43   | 514       | 13   | 28492       | 263  | 627     | 38   | 195       | 15   |
| 1996                    | 15330       | 54   | 2175    | 44   | 514       | 13   | 29447       | 274  | 760     | 44   | 202       | 16   |
| 1997                    | 15730       | 56   | 2175    | 44   | 514       | 13   | 30877       | 287  | 760     | 44   | 202       | 16   |
| 1998                    | 17230       | 62   | 2275    | 46   | 514       | 13   | 32627       | 305  | 760     | 44   | 207       | 17   |
| 1999                    | 19630       | 68   | 2425    | 50   | 514       | 13   | 34567       | 324  | 933     | 52   | 207       | 17   |
| Average Annual Growth % | 7.4         | 7.7  | 3.4     | 4.0  | 0.0       | 0.0  | 5.8         | 5.9  | 9.4     | 7.6  | 1.2       | 2.5  |
| 2000                    | 21658       | 76   | 2650    | 56   | 524       | 15   | 35537       | 335  | 953     | 53   | 207       | 17   |
| 2001                    | 22458       | 80   | 2800    | 60   | 524       | 15   | 37287       | 348  | 953     | 53   | 207       | 17   |
| 2002                    | 24558       | 86   | 2875    | 63   | 524       | 15   | 41402       | 385  | 1004    | 56   | 207       | 17   |
| 2003                    | 26158       | 94   | 2875    | 63   | 524       | 15   | 43577       | 402  | 1024    | 57   | 207       | 17   |
| 2004                    | 27070       | 103  | 3225    | 72   | 524       | 15   | 47212       | 427  | 1049    | 58   | 289       | 19   |
| Average Annual Growth % | 6.6         | 8.7  | 5.9     | 7.6  | 0.4       | 2.9  | 6.4         | 5.7  | 2.4     | 2.2  | 6.9       | 2.2  |
| 2005                    | 28038       | 102  | 3225    | 72   | 524       | 15   | 51601       | 465  | 1049    | 58   | 289       | 19   |
| 2006                    | 29633       | 109  | 3575    | 80   | 524       | 15   | 53816       | 481  | 1079    | 59   | 377       | 33   |
| 2007                    | 31693       | 116  | 3675    | 83   | 524       | 15   | 56116       | 501  | 1079    | 59   | 437       | 35   |
| 2008                    | 34538       | 127  | 4152    | 94   | 524       | 15   | 59940       | 524  | 1054    | 58   | 438       | 36   |
| 2009                    | 37833       | 141  | 4557    | 97   | 460       | 14   | 62337       | 547  | 1134    | 60   | 478       | 38   |
| 2010                    | 44893       | 167  | 5137    | 106  | 450       | 12   | 64502       | 558  | 1134    | 60   | 493       | 44   |
| Average Annual Growth % | 8.7         | 8.3  | 8.1     | 6.7  | -2.5      | -3.7 | 5.4         | 4.6  | 1.3     | 0.6  | 9.3       | 15.0 |
| 2011                    | 46708       | 174  | 5282    | 111  | 460       | 14   | 67412       | 580  | 1056    | 56   | 522       | 56   |
| 2012                    | 50968       | 187  | 5757    | 116  | 460       | 14   | 69843       | 597  | 1056    | 56   | 529       | 57   |
| 2013                    | 54303       | 203  | 5897    | 120  | 474       | 20   | 71605       | 607  | 1031    | 55   | 579       | 63   |
| 2014                    | 57143       | 215  | 5647    | 120  | 474       | 20   | 75024       | 633  | 1031    | 55   | 579       | 63   |
| 2015                    | 59273       | 224  | 5664    | 122  | 474       | 20   | 76532       | 641  | 1015    | 53   | 599       | 64   |

## Number & Capacity of Sub-Transmission Transformers

| Year                            | 132 kv      |            |            |            |             |            | 66 & 63 kv  |             |             |    |             |             |
|---------------------------------|-------------|------------|------------|------------|-------------|------------|-------------|-------------|-------------|----|-------------|-------------|
|                                 | Transformer |            | Reactor    |            | Capacitor   |            | Transformer |             | Reactor     |    | Capacitor   |             |
|                                 | MVA         | No         | Mvar       | No         | Mvar        | No         | MVA         | No          | Mvar        | No | Mvar        | No          |
| 1967                            | 186         | 8          | 20         | 2          | 20          | 6          | 375         | 12          |             |    | 26          | 6           |
| 1968                            | 324         | 13         | 20         | 2          | 32          | 10         | 1140        | 42          |             |    | 91          | 28          |
| 1969                            | 506         | 18         | 20         | 2          | 32          | 10         | 1771        | 82          |             |    | 290         | 57          |
| 1970                            | 592         | 23         | 20         | 2          | 32          | 10         | 2123        | 100         |             |    | 388         | 70          |
| 1971                            | 747         | 31         | 20         | 2          | 35          | 11         | 2608        | 123         |             |    | 415         | 83          |
| 1972                            | 797         | 33         | 20         | 2          | 35          | 11         | 3191        | 145         |             |    | 524         | 92          |
| 1973                            | 1309        | 57         | 40         | 4          | 164         | 19         | 3581        | 160         |             |    | 564         | 99          |
| 1974                            | 1444        | 62         | 40         | 4          | 164         | 19         | 3986        | 177         |             |    | 627         | 109         |
| 1975                            | 1514        | 65         | 40         | 4          | 164         | 19         | 4572        | 200         |             |    | 654         | 118         |
| 1976                            | 1611        | 69         | 40         | 4          | 170         | 21         | 5205        | 225         |             |    | 772         | 126         |
| 1977                            | 1984        | 85         | 40         | 4          | 188         | 27         | 6180        | 274         |             |    | 809         | 143         |
| 1978                            | 2092        | 89         | 40         | 4          | 188         | 27         | 7235        | 318         |             |    | 1173        | 191         |
| <b>Average Annual Growth %</b>  | <b>5.4</b>  | <b>4.7</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b>  | <b>0.0</b> | <b>30.9</b> | <b>34.7</b> |             |    | <b>41.5</b> | <b>37.0</b> |
| 1979                            | 2135        | 91         | 40         | 4          | 188         | 27         | 7547        | 337         |             |    | 1197        | 194         |
| 1980                            | 2297        | 94         | 40         | 4          | 191         | 28         | 7988        | 352         |             |    | 1207        | 198         |
| 1981                            | 2469        | 101        | 40         | 4          | 197         | 30         | 8371        | 371         |             |    | 1252        | 208         |
| 1982                            | 2566        | 105        | 40         | 4          | 197         | 30         | 9101        | 411         |             |    | 1490        | 244         |
| 1983                            | 2961        | 119        | 40         | 4          | 197         | 30         | 10515       | 472         | 7           | 2  | 1896        | 321         |
| 1984                            | 3256        | 126        | 40         | 4          | 197         | 30         | 11595       | 517         | 7           | 2  | 2008        | 347         |
| 1985                            | 3764        | 141        | 40         | 4          | 208         | 33         | 12834       | 566         | 7           | 2  | 2093        | 369         |
| 1986                            | 4264        | 151        | 40         | 4          | 229         | 40         | 14104       | 617         | 7           | 2  | 2181        | 391         |
| 1987                            | 4909        | 171        | 40         | 4          | 229         | 40         | 15010       | 656         | 7           | 2  | 2261        | 417         |
| 1988                            | 5672        | 197        | 40         | 4          | 318         | 63         | 16157       | 702         | 7           | 2  | 2902        | 472         |
| <b>*Average Annual Growth %</b> | <b>8.0</b>  | <b>8.3</b> | <b>0.0</b> | <b>0.0</b> | <b>5.4</b>  | <b>8.8</b> | <b>8.4</b>  | <b>8.2</b>  |             |    | <b>9.5</b>  | <b>9.5</b>  |
| 1989                            | 6502        | 226        | 40         | 4          | 337         | 68         | 17131       | 748         | 7           | 2  | 3251        | 514         |
| 1990                            | 6891        | 242        | 40         | 4          | 368         | 75         | 17999       | 784         | 7           | 2  | 3450        | 544         |
| 1991                            | 7365        | 256        | 40         | 4          | 387         | 77         | 18836       | 822         | 7           | 2  | 3665        | 562         |
| 1992                            | 7716        | 269        | 40         | 4          | 407         | 82         | 19630       | 859         | 7           | 2  | 3803        | 587         |
| 1993                            | 8363        | 292        | 40         | 4          | 416         | 84         | 21246       | 929         | 7           | 2  | 4017        | 630         |
| 1994                            | 8656        | 305        | 40         | 4          | 430         | 88         | 21918       | 963         | 7           | 2  | 4081        | 645         |
| <b>*Average Annual Growth %</b> | <b>7.3</b>  | <b>7.6</b> | <b>0.0</b> | <b>0.0</b> | <b>5.2</b>  | <b>5.7</b> | <b>5.2</b>  | <b>5.4</b>  |             |    | <b>5.8</b>  | <b>5.3</b>  |
| 1995                            | 9298        | 328        | 40         | 4          | 451         | 93         | 22982       | 1019        | 7           | 2  | 4255        | 675         |
| 1996                            | 9544        | 338        | 40         | 4          | 548         | 99         | 23947       | 1068        | 7           | 2  | 4400        | 699         |
| 1997                            | 10113       | 360        | 40         | 4          | 559         | 102        | 25226       | 1119        | 7           | 2  | 4482        | 727         |
| 1998                            | 10611       | 380        | 40         | 4          | 583         | 107        | 26913       | 1193        | 7           | 2  | 4535        | 747         |
| 1999                            | 11045       | 399        | 40         | 4          | 588         | 108        | 28502       | 1264        | 7           | 2  | 4613        | 773         |
| <b>*Average Annual Growth %</b> | <b>5.0</b>  | <b>5.5</b> | <b>0.0</b> | <b>0.0</b> | <b>6.4</b>  | <b>4.2</b> | <b>5.4</b>  | <b>5.6</b>  |             |    | <b>2.5</b>  | <b>3.7</b>  |
| 2000                            | 11923       | 433        | 40         | 4          | 624         | 118        | 29672       | 1318        | 7           | 2  | 4654        | 786         |
| 2001                            | 12762       | 463        | 40         | 4          | 633         | 120        | 31265       | 1371        | 7           | 2  | 4675        | 794         |
| 2002                            | 13587       | 501        | 40         | 4          | 643         | 122        | 34036       | 1510        | 26          | 3  | 4730        | 813         |
| 2003                            | 14322       | 525        | 40         | 4          | 643         | 122        | 35952       | 1590        | 27          | 3  | 4742        | 820         |
| 2004                            | 15655       | 566        | 40         | 4          | 664         | 128        | 37968       | 1653        | 20          | 1  | 5148        | 1076        |
| <b>*Average Annual Growth %</b> | <b>7.2</b>  | <b>7.2</b> | <b>0.0</b> | <b>0.0</b> | <b>2.5</b>  | <b>3.5</b> | <b>5.9</b>  | <b>5.5</b>  | <b>23.4</b> |    | <b>2.2</b>  | <b>6.8</b>  |
| 2005                            | 17159       | 617        | 40         | 4          | 669         | 129        | 40620       | 1733        | 20          | 1  | 5155        | 1080        |
| 2006                            | 18489       | 657        | 20         | 2          | 626         | 139        | 43987       | 1834        | 34/4        | 7  | 5567        | 1224        |
| 2007                            | 19554       | 693        | 20         | 2          | 612         | 134        | 47424       | 1930        | 34/4        | 7  | 6494        | 1389        |
| 2008                            | 21567       | 758        |            |            | 683         | 145        | 51458       | 2048        | 20          | 1  | 5995        | 1369        |
| 2009                            | 22923       | 796        | 20         | 2          | 634         | 141        | 53961       | 2106        | 40          | 2  | 3875        | 1473        |
| 2010                            | 24403       | 839        | 20         | 2          | 660         | 151        | 57929       | 2216        | 40          | 2  | 4129        | 1571        |
| <b>*Average Annual Growth %</b> | <b>7.8</b>  | <b>6.9</b> |            |            | <b>-0.9</b> | <b>2.0</b> | <b>7.2</b>  | <b>4.9</b>  |             |    | <b>-5.5</b> | <b>6.5</b>  |
| 2011                            | 25352       | 866        | 20         | 2          | 813         | 222        | 59759       | 2272        | 40          | 2  | 4323        | 1639        |
| 2012                            | 26844       | 909        | 20         | 2          | 805         | 221        | 61334       | 2317        | 20          | 1  | 4335        | 1640        |
| 2013                            | 27838       | 940        | 20         | 2          | 791         | 215        | 63270       | 2373        | 20          | 1  | 4824        | 1827        |
| 2014                            | 29269       | 981        | 20         | 2          | 791         | 215        | 65061       | 2422        | 20          | 1  | 4833        | 1831        |
| 2015                            | 29829       | 997        | 20         | 2          | 918         | 262        | 67080       | 2467        | 20          | 1  | 4946        | 1877        |

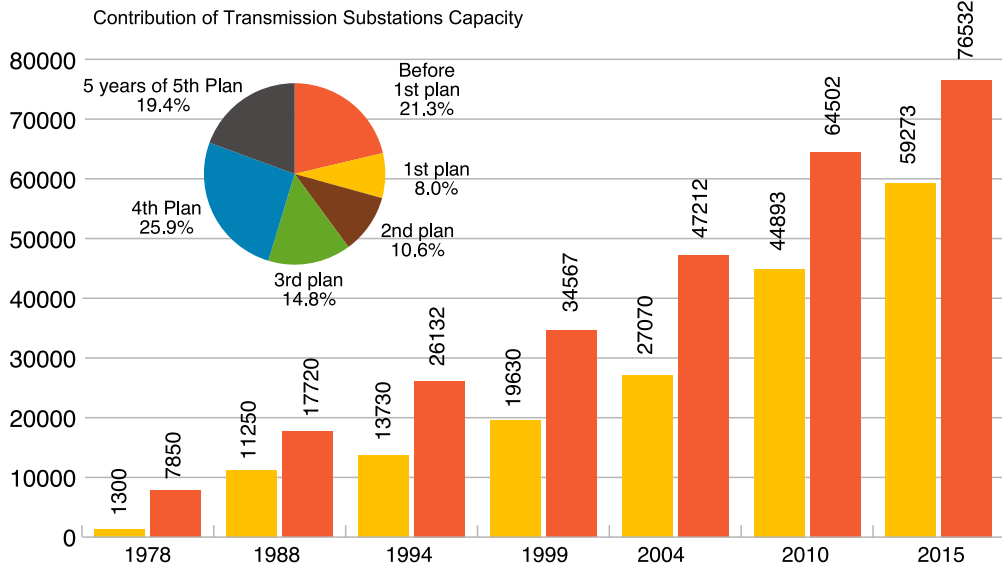
\* Beginning of the 1st,2nd,3rd, 4th and 5th development plans, respectively

(MVA)

### Increasing Trend of Transmission Substations Capacity

400 kv

230 kv

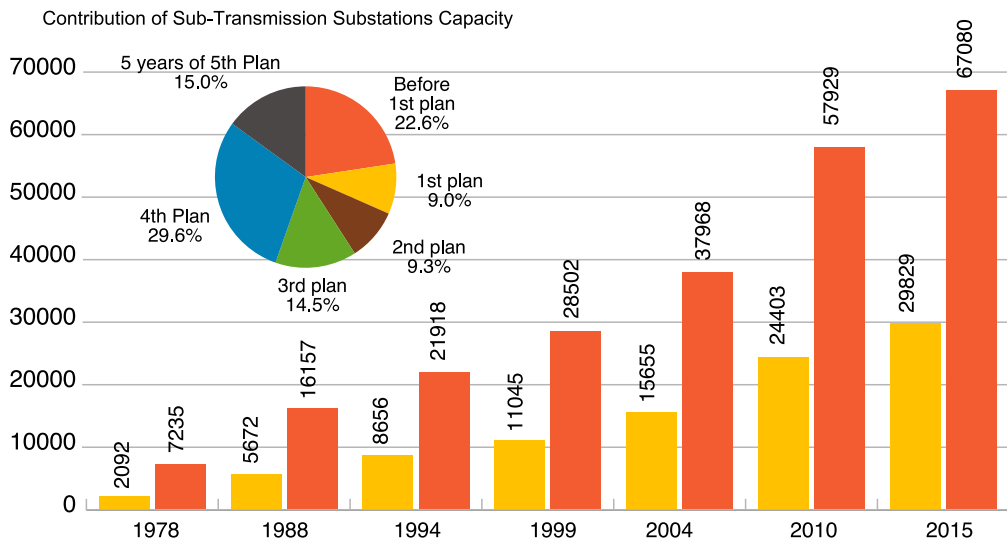


(MVA)

### Increasing Trend of Sub-Transmission Substations Capacity

132 kv

63&66 kv



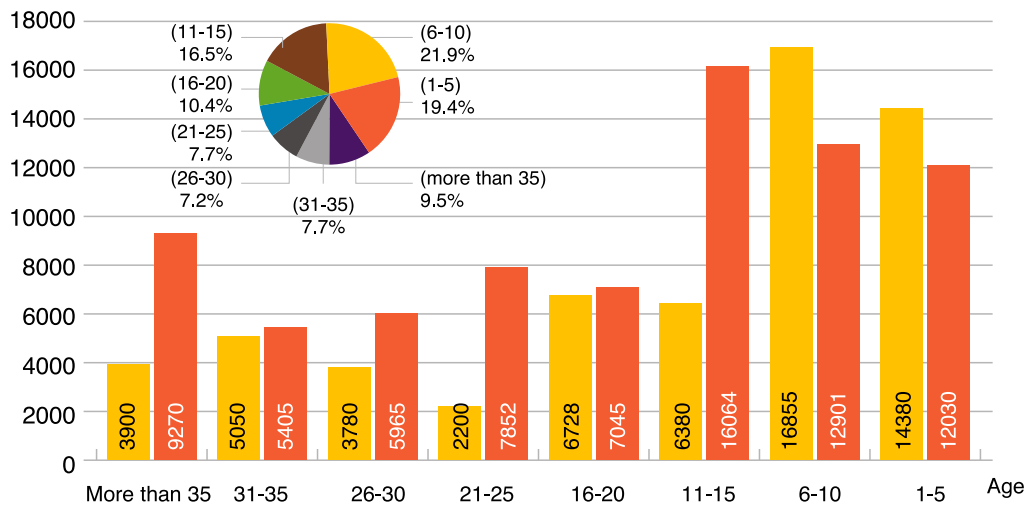
(MVA)

### Transmission Substations Capacity by Age

400 kv

230 kv

Contribution of Transmission Substations' Capacity by Age



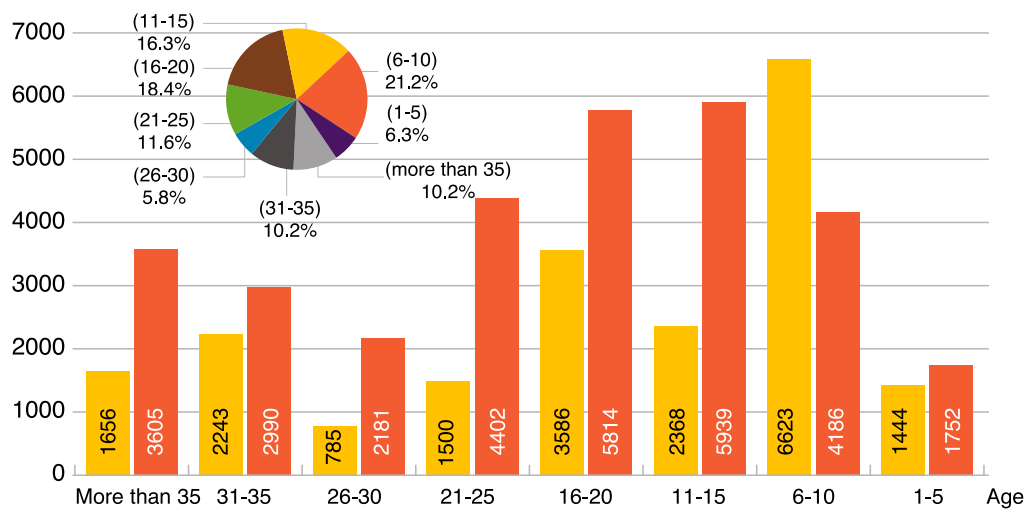
(Km Circuit)

### Transmission Lines Length by Age

400 kv

230 kv

Contribution of Transmission Lines Length by Age



## Length of Transmission & Sub-Transmission Lines

(KM Circuit)

| Year                            | Transmission |             |             | Sub-Transmission |             |             |
|---------------------------------|--------------|-------------|-------------|------------------|-------------|-------------|
|                                 | 400 kv       | 230 kv      | Total       | 132 kv           | 66 & 63 kv  | Total       |
| 1967                            |              | 457         | 457         | 437              | 104         | 542         |
| 1968                            |              | 729         | 729         | 437              | 762         | 1199        |
| 1969                            |              | 981         | 981         | 525              | 1460        | 1985        |
| 1970                            |              | 1473        | 1473        | 837              | 2184        | 3022        |
| 1971                            |              | 1614        | 1614        | 1077             | 2752        | 3829        |
| 1972                            |              | 1634        | 1634        | 1124             | 2832        | 3956        |
| 1973                            |              | 1890        | 1890        | 1739             | 3325        | 5064        |
| 1974                            |              | 1929        | 1929        | 2643             | 3421        | 6064        |
| 1975                            |              | 2190        | 2190        | 2728             | 3686        | 6414        |
| 1976                            | 162          | 2190        | 2351        | 2973             | 4081        | 7054        |
| 1977                            | 695          | 2900        | 3595        | 3028             | 5328        | 8356        |
| 1978                            | 1081         | 3467        | 4548        | 3547             | 5466        | 9013        |
| <b>Average Annual Growth %</b>  | <b>158.6</b> | <b>20.2</b> | <b>23.2</b> | <b>21.0</b>      | <b>43.3</b> | <b>29.1</b> |
| 1979                            | 1251         | 3565        | 4816        | 4110             | 5674        | 9784        |
| 1980                            | 1656         | 3605        | 5261        | 4422             | 5932        | 10354       |
| 1981                            | 2274         | 3992        | 6266        | 5057             | 6193        | 11250       |
| 1982                            | 2314         | 4819        | 7133        | 5112             | 6867        | 11979       |
| 1983                            | 2856         | 5578        | 8434        | 5175             | 8609        | 13784       |
| 1984                            | 3170         | 5767        | 8937        | 5175             | 10193       | 15368       |
| 1985                            | 3899         | 6595        | 10494       | 5510             | 11364       | 16874       |
| 1986                            | 4506         | 7274        | 11780       | 5958             | 12002       | 17960       |
| 1987                            | 4506         | 7418        | 11924       | 6285             | 12814       | 19099       |
| 1988                            | 4506         | 7896        | 12402       | 7123             | 14399       | 21521       |
| <b>*Average Annual Growth %</b> | <b>15.3</b>  | <b>8.6</b>  | <b>10.6</b> | <b>7.2</b>       | <b>10.2</b> | <b>9.1</b>  |
| 1989                            | 4684         | 8504        | 13188       | 7427             | 15604       | 23031       |
| 1990                            | 4684         | 8776        | 13460       | 7895             | 16966       | 24861       |
| 1991                            | 4770         | 9574        | 14344       | 8315             | 17568       | 25884       |
| 1992                            | 4770         | 10717       | 15487       | 8927             | 18591       | 27518       |
| 1993                            | 5090         | 11581       | 16671       | 9354             | 19728       | 29082       |
| 1994                            | 5165         | 12271       | 17436       | 9660             | 20954       | 30614       |
| <b>*Average Annual Growth %</b> | <b>2.3</b>   | <b>7.6</b>  | <b>5.8</b>  | <b>5.2</b>       | <b>6.5</b>  | <b>6.0</b>  |
| 1995                            | 6184         | 13178       | 19362       | 10348            | 21984       | 32332       |
| 1996                            | 6730         | 14115       | 20845       | 10647            | 23336       | 33983       |
| 1997                            | 6965         | 15251       | 22216       | 11271            | 24210       | 35481       |
| 1998                            | 8313         | 16315       | 24628       | 11685            | 25251       | 36936       |
| 1999                            | 9156         | 18028       | 27184       | 12107            | 26788       | 38895       |
| <b>*Average Annual Growth %</b> | <b>12.1</b>  | <b>8.0</b>  | <b>9.3</b>  | <b>4.6</b>       | <b>5.0</b>  | <b>4.9</b>  |
| 2000                            | 9770         | 18992       | 28762       | 13079            | 28251       | 41330       |
| 2001                            | 9924         | 20731       | 30655       | 13857            | 29400       | 43257       |
| 2002                            | 10317        | 21381       | 31698       | 14200            | 31335       | 45535       |
| 2003                            | 11832        | 23007       | 34839       | 15619            | 33651       | 49270       |
| 2004                            | 11848        | 24151       | 35999       | 16513            | 35274       | 51787       |
| <b>*Average Annual Growth %</b> | <b>5.3</b>   | <b>6.0</b>  | <b>5.8</b>  | <b>6.4</b>       | <b>5.7</b>  | <b>5.9</b>  |
| 2005                            | 12138        | 24931       | 37069       | 17047            | 36720       | 53767       |
| 2006                            | 12440        | 25634       | 38074       | 18528            | 37973       | 56501       |
| 2007                            | 14191        | 26455       | 40646       | 19185            | 39232       | 58417       |
| 2008                            | 14823        | 27082       | 41905       | 19986            | 39732       | 59718       |
| 2009                            | 17438        | 28487       | 45925       | 20703            | 42341       | 63044       |
| 2010                            | 18761        | 29117       | 47878       | 21111            | 44007       | 65118       |
| <b>*Average Annual Growth %</b> | <b>8.0</b>   | <b>3.2</b>  | <b>4.9</b>  | <b>4.2</b>       | <b>3.8</b>  | <b>3.9</b>  |
| 2011                            | 18625        | 29158       | 47783       | 22092            | 44956       | 67048       |
| 2012                            | 19745        | 29722       | 49467       | 22602            | 45754       | 68356       |
| 2013                            | 19915        | 30300       | 50215       | 22665            | 46240       | 68906       |
| 2014                            | 19995        | 30732       | 50726       | 22919            | 47105       | 70024       |
| 2015                            | 20205        | 30869       | 51074       | 23045            | 47506       | 70552       |

\* Beginning of the 1st,2nd,3rd, 4th and 5th development plans, respectively

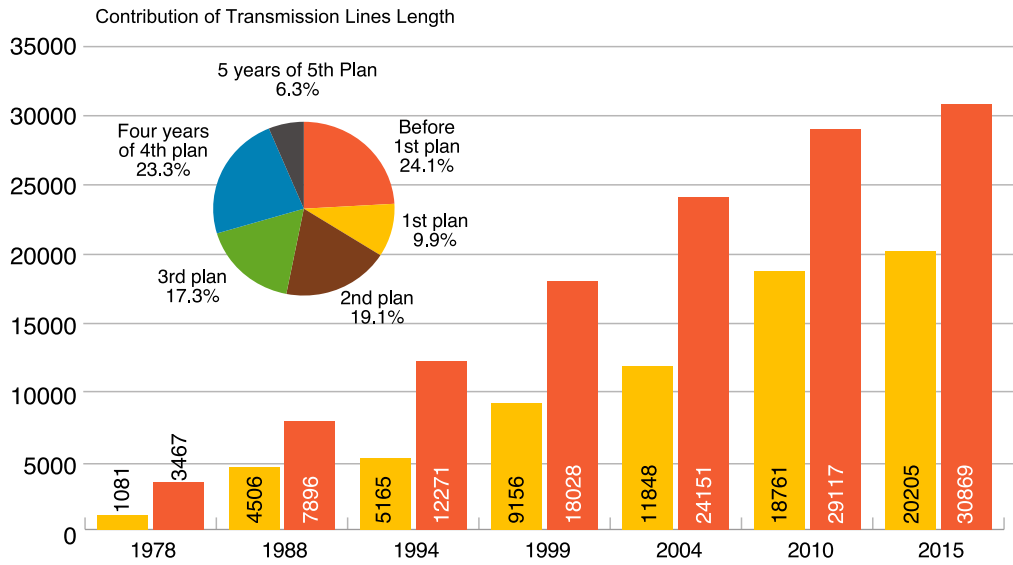


(Km Circuit )

### Increasing Trend of Transmission Lines Length

400 kv

230 kv

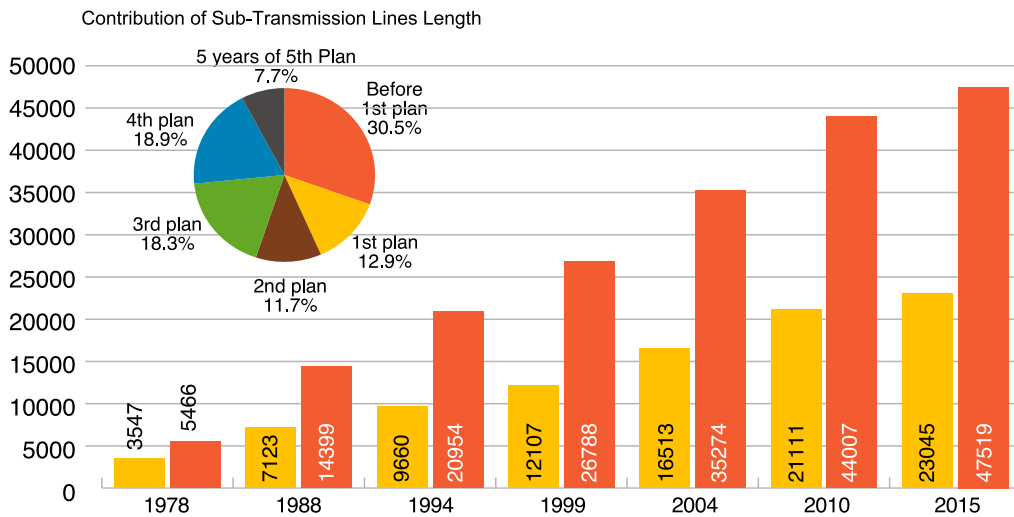


(Km Circuit )

### Increasing Trend of Sub-Transmission Lines Length

132 kv

63&66 kv

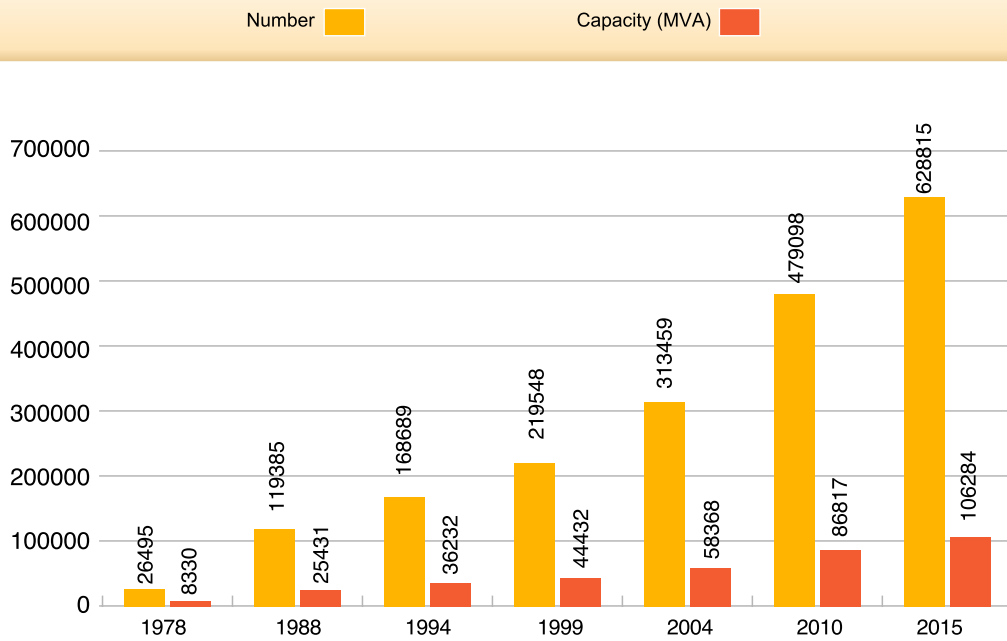


## Number & Capacity of Distribution Transformers

| Year                            | Number      |             |             | Capacity (MVA) |             |             |
|---------------------------------|-------------|-------------|-------------|----------------|-------------|-------------|
|                                 | Overhead    | Underground | Total       | Overhead       | Underground | Total       |
| 1978                            | 19238       | 7257        | 26495       | 3881           | 4449        | 8330        |
| 1979                            | 26384       | 7787        | 34171       | 4629           | 4843        | 9472        |
| 1980                            | 33382       | 8359        | 41741       | 5352           | 5254        | 10606       |
| 1981                            | 39410       | 9202        | 48612       | 6426           | 5829        | 12255       |
| 1982                            | 46857       | 9883        | 56740       | 7375           | 6226        | 13601       |
| 1983                            | 56348       | 10397       | 66745       | 8835           | 6636        | 15471       |
| 1984                            | 65595       | 10887       | 76482       | 10165          | 7034        | 17199       |
| 1985                            | 78617       | 11725       | 90342       | 12086          | 7780        | 19866       |
| 1986                            | 87917       | 12620       | 100537      | 13536          | 8329        | 21865       |
| 1987                            | 98720       | 13379       | 112099      | 14813          | 8842        | 23655       |
| 1988                            | 105330      | 14055       | 119385      | 16050          | 9381        | 25431       |
| <b>*Average Annual Growth %</b> | <b>18.5</b> | <b>6.8</b>  | <b>16.3</b> | <b>15.3</b>    | <b>7.8</b>  | <b>11.8</b> |
| 1989                            | 111390      | 14571       | 125961      | 17057          | 9789        | 26846       |
| 1990                            | 118622      | 15164       | 133786      | 18063          | 9871        | 27934       |
| 1991                            | 126701      | 15725       | 142426      | 19328          | 10802       | 30130       |
| 1992                            | 133735      | 16404       | 150139      | 20503          | 11345       | 31848       |
| 1993                            | 140379      | 16968       | 157347      | 21508          | 11793       | 33301       |
| 1994                            | 151390      | 17299       | 168689      | 23994          | 12238       | 36232       |
| <b>*Average Annual Growth %</b> | <b>6.2</b>  | <b>3.5</b>  | <b>5.9</b>  | <b>6.9</b>     | <b>4.5</b>  | <b>6.1</b>  |
| 1995                            | 156765      | 18174       | 174939      | 24710          | 12941       | 37651       |
| 1996                            | 164183      | 18925       | 183108      | 24437          | 13766       | 38203       |
| 1997                            | 176430      | 19808       | 196238      | 26609          | 14227       | 40836       |
| 1998                            | 185495      | 20192       | 205687      | 28049          | 14155       | 42204       |
| 1999                            | 198822      | 20726       | 219548      | 29767          | 14665       | 44432       |
| <b>*Average Annual Growth %</b> | <b>5.6</b>  | <b>3.7</b>  | <b>5.4</b>  | <b>4.4</b>     | <b>3.6</b>  | <b>4.2</b>  |
| 2000                            | 212710      | 21376       | 234086      | 31726          | 15211       | 46937       |
| 2001                            | 228191      | 21821       | 250012      | 33934          | 15493       | 49427       |
| 2002                            | 252130      | 22211       | 274341      | 36889          | 15782       | 52670       |
| 2003                            | 270133      | 21191       | 291324      | 39425          | 15532       | 54957       |
| 2004                            | 291635      | 21824       | 313459      | 42420          | 15948       | 58368       |
| <b>*Average Annual Growth %</b> | <b>8.0</b>  | <b>1.0</b>  | <b>7.4</b>  | <b>7.3</b>     | <b>1.7</b>  | <b>5.6</b>  |
| 2005                            | 316940      | 22897       | 339837      | 46268          | 16686       | 62954       |
| 2006                            | 338749      | 25400       | 364149      | 49272          | 18939       | 68211       |
| 2007                            | 362283      | 25728       | 388011      | 52355          | 18954       | 71309       |
| 2008                            | 390762      | 27127       | 417889      | 56639          | 20378       | 77017       |
| 2009                            | 420101      | 28433       | 448534      | 60508          | 21140       | 81648       |
| 2010                            | 449481      | 29617       | 479098      | 64824          | 21993       | 86817       |
| <b>*Average Annual Growth %</b> | <b>7.4</b>  | <b>5.1</b>  | <b>7.3</b>  | <b>7.3</b>     | <b>5.6</b>  | <b>6.8</b>  |
| 2011                            | 482333      | 30637       | 512970      | 69050          | 22824       | 91874       |
| 2012                            | 508108      | 31797       | 539905      | 72041          | 23488       | 95529       |
| 2013                            | 537500      | 32989       | 570489      | 76459          | 24419       | 100878      |
| 2014                            | 565839      | 35043       | 600882      | 80414          | 25871       | 106284      |
| 2015                            | 592525      | 36290       | 628815      | 83871          | 26587       | 110458      |

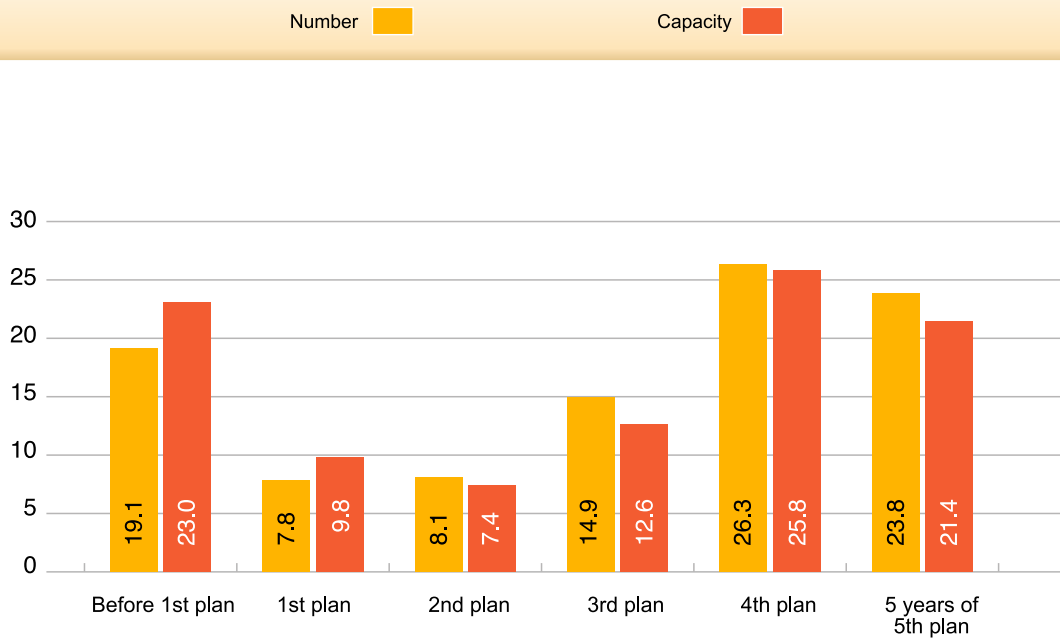
\* Beginning of the 1st,2nd,3rd, 4th and 5th development plans, respectively

### Number and Capacity of Distribution Transformers



(%)

### Contribution of Number and Capacity of Distribution Transformers



## Length of LV/MV Distribution Lines

(KM)

| Year                            | Medium -Voltage |             |             | Low -Voltage |             |             |
|---------------------------------|-----------------|-------------|-------------|--------------|-------------|-------------|
|                                 | Overhead        | Underground | Total       | Overhead     | Underground | Total       |
| 1978                            | 28209           | 3868        | 32077       | 31083        | 5054        | 36137       |
| 1979                            | 32434           | 4083        | 36517       | 37097        | 5492        | 42589       |
| 1980                            | 42228           | 4186        | 46414       | 45991        | 5943        | 51934       |
| 1981                            | 49112           | 4347        | 53459       | 54036        | 6460        | 60696       |
| 1982                            | 57819           | 4605        | 62424       | 61448        | 6963        | 68411       |
| 1983                            | 65363           | 4884        | 70247       | 68126        | 7393        | 75519       |
| 1984                            | 74700           | 4965        | 79665       | 74599        | 8091        | 82690       |
| 1985                            | 87815           | 5153        | 92968       | 83910        | 8826        | 92736       |
| 1986                            | 94439           | 5416        | 99855       | 92229        | 9594        | 101823      |
| 1987                            | 103109          | 5620        | 108729      | 100813       | 10264       | 111077      |
| 1988                            | 111193          | 5897        | 117090      | 107092       | 10856       | 117948      |
| <b>*Average Annual Growth %</b> | <b>14.7</b>     | <b>4.3</b>  | <b>13.8</b> | <b>13.2</b>  | <b>8.0</b>  | <b>12.6</b> |
| 1989                            | 116886          | 6180        | 123066      | 111562       | 11292       | 122854      |
| 1990                            | 122631          | 6402        | 129033      | 116490       | 11676       | 128166      |
| 1991                            | 127851          | 6614        | 134465      | 120540       | 12173       | 132713      |
| 1992                            | 131619          | 6880        | 138499      | 124193       | 12674       | 136867      |
| 1993                            | 139390          | 6941        | 146331      | 128966       | 13290       | 142256      |
| 1994                            | 150162          | 7043        | 157205      | 136476       | 13530       | 150006      |
| <b>*Average Annual Growth %</b> | <b>5.1</b>      | <b>3.0</b>  | <b>5.0</b>  | <b>4.1</b>   | <b>3.7</b>  | <b>4.1</b>  |
| 1995                            | 159481          | 7242        | 166723      | 147376       | 14705       | 162081      |
| 1996                            | 169930          | 7383        | 177313      | 153273       | 15469       | 168742      |
| 1997                            | 184009          | 7712        | 191721      | 164943       | 16307       | 181250      |
| 1998                            | 199045          | 7702        | 206747      | 172856       | 16973       | 189829      |
| 1999                            | 210120          | 8312        | 218432      | 181841       | 18217       | 200058      |
| <b>*Average Annual Growth %</b> | <b>6.9</b>      | <b>3.4</b>  | <b>6.8</b>  | <b>5.9</b>   | <b>6.1</b>  | <b>5.9</b>  |
| 2000                            | 222694          | 8646        | 231340      | 188452       | 19500       | 207952      |
| 2001                            | 236129          | 9010        | 245139      | 193078       | 21166       | 214244      |
| 2002                            | 253244          | 9576        | 262820      | 199071       | 23675       | 222745      |
| 2003                            | 268000          | 10257       | 278257      | 205510       | 25532       | 231042      |
| 2004                            | 279800          | 10823       | 290623      | 212693       | 27103       | 239796      |
| <b>*Average Annual Growth %</b> | <b>5.9</b>      | <b>5.4</b>  | <b>5.9</b>  | <b>3.2</b>   | <b>8.3</b>  | <b>3.7</b>  |
| 2005                            | 293724          | 11474       | 305198      | 220145       | 29451       | 249596      |
| 2006                            | 305478          | 12154       | 317632      | 226750       | 31411       | 258161      |
| 2007                            | 315148          | 12850       | 327997      | 232825       | 33001       | 265826      |
| 2008                            | 326267          | 13876       | 340143      | 241592       | 35115       | 276707      |
| 2009                            | 336985          | 14928       | 351913      | 250162       | 37374       | 287536      |
| 2010                            | 348039          | 15662       | 363701      | 258635       | 39190       | 297825      |
| <b>*Average Annual Growth %</b> | <b>3.6</b>      | <b>6.4</b>  | <b>3.7</b>  | <b>3.3</b>   | <b>6.3</b>  | <b>3.6</b>  |
| 2011                            | 356495          | 16524       | 373019      | 264900       | 40791       | 305691      |
| 2012                            | 363651          | 17277       | 380928      | 271052       | 42762       | 313814      |
| 2013                            | 371667          | 17898       | 389565      | 282554       | 43314       | 325868      |
| 2014                            | 379707          | 18751       | 398457      | 291401       | 43948       | 335349      |
| 2015                            | 387638          | 19335       | 406973      | 299036       | 45774       | 344810      |

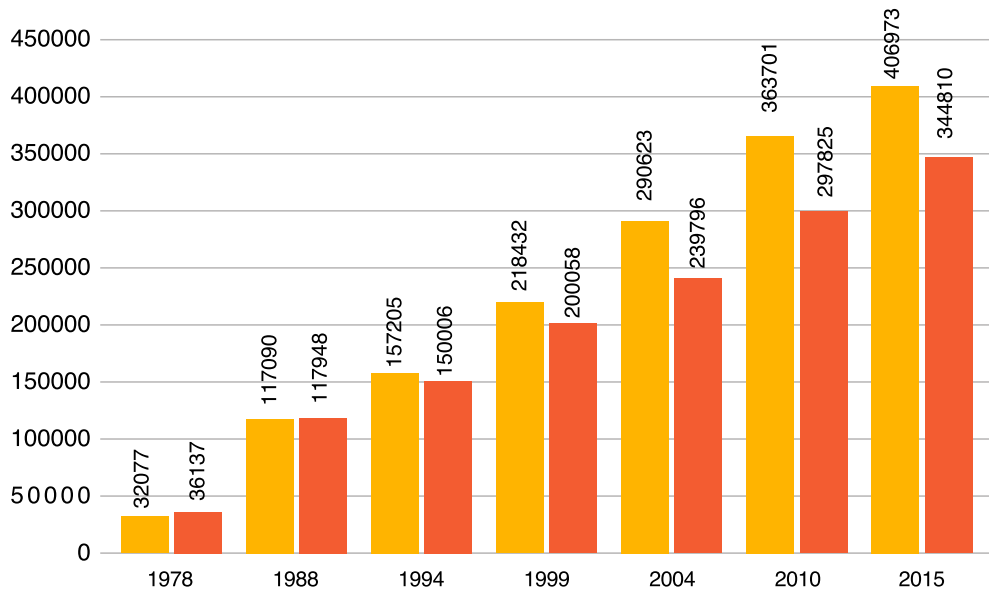
\* Beginning of the 1st,2nd,3rd, 4th and 5th development plans, respectively

(Km)

### Length of LV/MV Distribution Lines

Medium-Voltage

Low-Voltage

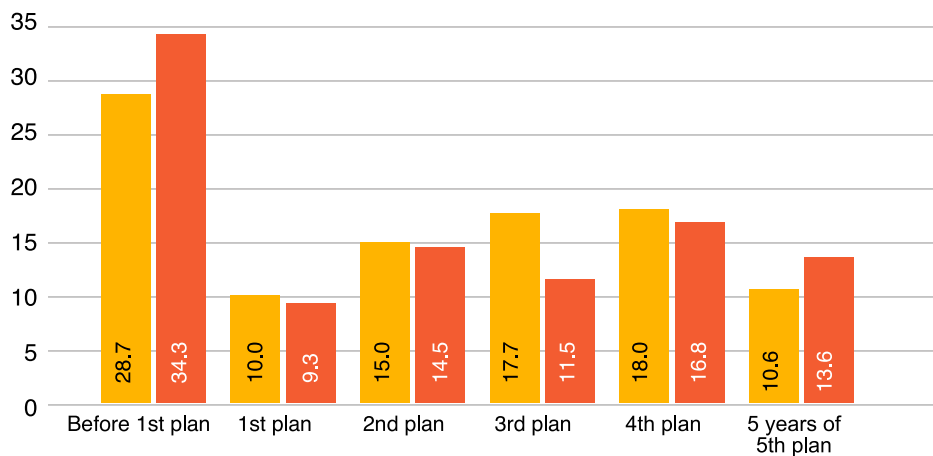


(%)

### Contribution of LV/MV Distribution Lines Length

Medium-Voltage

Low-Voltage



## Electricity Sale to Various Consuming Sectors

(GWH)

| Year                           | Residential | Public Services | Others <sup>1</sup> | Industrial  | Agricultural | Street Lighting | Total       |
|--------------------------------|-------------|-----------------|---------------------|-------------|--------------|-----------------|-------------|
| 1967                           | 473         | 271             |                     | 504         | 33           | 180             | 1461        |
| 1968                           | 639         | 364             |                     | 656         | 49           | 252             | 1960        |
| 1969                           | 691         | 607             |                     | 914         | 79           | 293             | 2584        |
| 1970                           | 808         | 854             |                     | 1427        | 91           | 292             | 3472        |
| 1971                           | 983         | 1029            |                     | 2035        | 121          | 351             | 4519        |
| 1972                           | 1218        | 1250            |                     | 2745        | 141          | 369             | 5723        |
| 1973                           | 1423        | 1585            |                     | 4048        | 213          | 527             | 7796        |
| 1974                           | 1620        | 1757            |                     | 5001        | 267          | 507             | 9152        |
| 1975                           | 2034        | 2191            |                     | 5287        | 330          | 604             | 10446       |
| 1976                           | 2620        | 2639            |                     | 5575        | 371          | 529             | 11734       |
| 1977                           | 3238        | 2888            |                     | 5897        | 426          | 617             | 13066       |
| 1978                           | 3797        | 3420            |                     | 5821        | 441          | 666             | 14145       |
| <b>Average Annual Growth%</b>  | <b>20.8</b> | <b>25.9</b>     |                     | <b>24.9</b> | <b>26.6</b>  | <b>12.6</b>     | <b>22.9</b> |
| 1979                           | 4702        | 3772            |                     | 6109        | 518          | 815             | 15916       |
| 1980                           | 5479        | 3837            |                     | 6239        | 695          | 614             | 16864       |
| 1981                           | 5809        | 4749            |                     | 6326        | 873          | 477             | 18234       |
| 1982                           | 7350        | 5299            |                     | 6489        | 1158         | 757             | 21053       |
| 1983                           | 8857        | 5609            |                     | 7798        | 1519         | 1370            | 25153       |
| 1984                           | 10069       | 6286            |                     | 8631        | 1848         | 1343            | 28177       |
| 1985                           | 11316       | 6914            |                     | 8834        | 2439         | 1309            | 30812       |
| 1986                           | 12416       | 7812            |                     | 8703        | 2160         | 1528            | 32619       |
| 1987                           | 13668       | 9201            |                     | 7848        | 2565         | 1458            | 34740       |
| 1988                           | 13994       | 9569            |                     | 7852        | 2947         | 1785            | 36147       |
| <b>*Average Annual Growth%</b> | <b>13.9</b> | <b>10.8</b>     |                     | <b>3.0</b>  | <b>20.9</b>  | <b>10.4</b>     | <b>9.8</b>  |
| 1989                           | 15791       | 10867           |                     | 8466        | 3352         | 1480            | 39956       |
| 1990                           | 17344       | 11930           |                     | 10220       | 3716         | 1897            | 45107       |
| 1991                           | 19128       | 13609           |                     | 10637       | 3792         | 2009            | 49175       |
| 1992                           | 19509       | 14004           |                     | 13262       | 3576         | 1955            | 52306       |
| 1993                           | 22143       | 14984           |                     | 15572       | 4023         | 1392            | 58114       |
| 1994                           | 22473       | 6060            | 7687                | 20470       | 5169         | 1766            | 63625       |
| <b>*Average Annual Growth%</b> | <b>8.2</b>  | <b>-7.3</b>     |                     | <b>17.3</b> | <b>9.8</b>   | <b>-0.2</b>     | <b>9.9</b>  |
| 1995                           | 23374       | 6203            | 7655                | 21390       | 5402         | 1830            | 65854       |
| 1996                           | 23993       | 6595            | 7622                | 22925       | 5731         | 2805            | 69671       |
| 1997                           | 26523       | 6727            | 8160                | 23661       | 6009         | 2278            | 73358       |
| 1998                           | 28686       | 7077            | 8484                | 24140       | 6782         | 2477            | 77646       |
| 1999                           | 29754       | 10622           | 5567                | 26504       | 8019         | 4190            | 84656       |
| <b>*Average Annual Growth%</b> | <b>5.8</b>  | <b>11.9</b>     | <b>-6.2</b>         | <b>5.3</b>  | <b>9.2</b>   | <b>18.9</b>     | <b>5.9</b>  |
| 2000                           | 31266       | 11271           | 5991                | 28937       | 9147         | 3754            | 90366       |
| 2001                           | 32891       | 11951           | 6394                | 30739       | 11079        | 4117            | 97171       |
| 2002                           | 34946       | 12630           | 6925                | 33469       | 12435        | 4671            | 105076      |
| 2003                           | 37967       | 13714           | 7461                | 36951       | 13859        | 4672            | 114625      |
| 2004                           | 40564       | 15021           | 7863                | 40343       | 15489        | 5188            | 124466      |
| <b>*Average Annual Growth%</b> | <b>6.4</b>  | <b>7.2</b>      | <b>7.1</b>          | <b>8.8</b>  | <b>14.1</b>  | <b>4.4</b>      | <b>8.0</b>  |
| 2005                           | 44108       | 16350           | 8542                | 43123       | 16469        | 4305            | 132897      |
| 2006                           | 48085       | 18329           | 9320                | 46590       | 17666        | 4608            | 144598      |
| 2007                           | 50777       | 19648           | 9953                | 49772       | 17670        | 4510            | 152330      |
| 2008                           | 52896       | 20428           | 10742               | 52110       | 21179        | 4091            | 161445      |
| 2009                           | 55630       | 21827           | 11015               | 54887       | 21405        | 3674            | 168438      |
| 2010                           | 60908       | 21308           | 12727               | 61483       | 24189        | 3568            | 184182      |
| <b>*Average Annual Growth%</b> | <b>7.0</b>  | <b>6.0</b>      | <b>8.4</b>          | <b>7.3</b>  | <b>7.7</b>   | <b>-6.1</b>     | <b>6.7</b>  |
| 2011                           | 56774       | 16751           | 12664               | 63944       | 30020        | 3752            | 183905      |
| 2012                           | 61351       | 17810           | 12599               | 67107       | 31647        | 3635            | 194148      |
| 2013                           | 64379       | 17831           | 13377               | 70634       | 33103        | 3765            | 203088      |
| 2014                           | 71163       | 19767           | 15404               | 74456       | 35188        | 3837            | 219814      |
| 2015                           | 76103       | 22196           | 16680               | 72227       | 36089        | 4017            | 227311      |

(1) Others sector include commercial sector

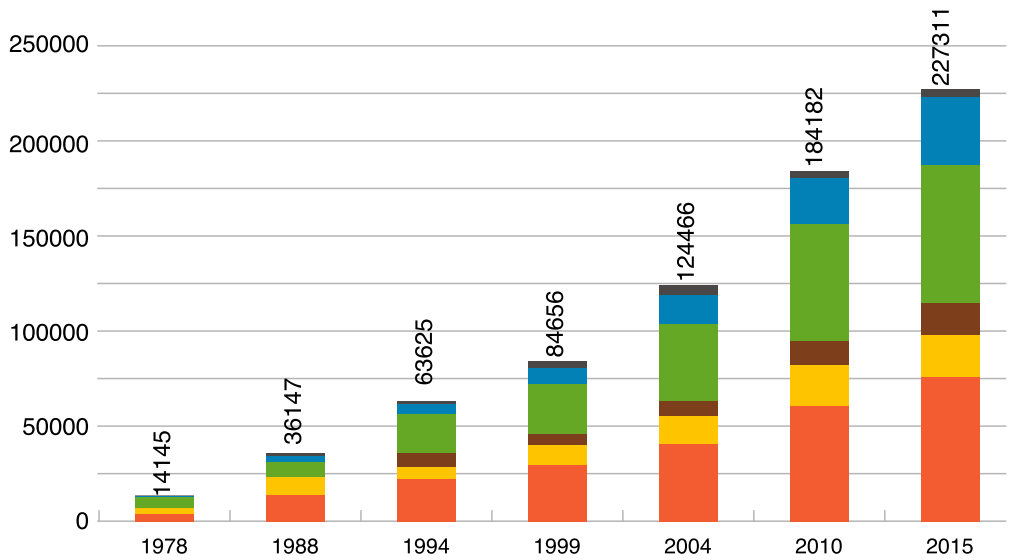
(1) Unusual reduction of Consumption in public sector is due to the separation of others sector from it.

\* Respectively beginning of 1st, 2nd, 3rd, 4th and 5th plans.

(GWH)

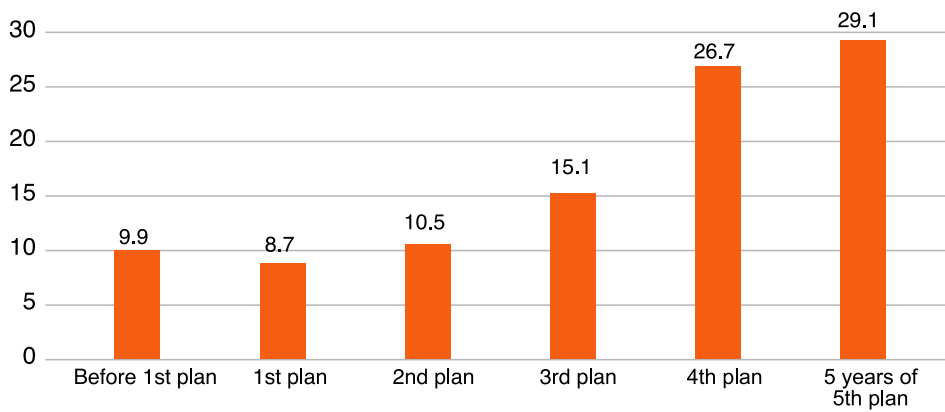
### Electricity Sale to Various Consuming Sectors

Residential ■ Public Services ■ Others ■ Industrial ■ Agricultural ■ Street Lighting ■



(%)

### Contribution of Electricity Sale



## Number of Customers by Various Consuming Sectors

(1000 Customers)

| Year                            | Residential | Public Services | Others <sup>1</sup> | Industrial  | Agricultural | Street Lighting | Total       |
|---------------------------------|-------------|-----------------|---------------------|-------------|--------------|-----------------|-------------|
| 1967                            | 610         | 175             |                     | 5           | 1            | 7               | 798         |
| 1968                            | 774         | 221             |                     | 6           | 1            | 7               | 1009        |
| 1969                            | 910         | 255             |                     | 6           | 1            | 6               | 1178        |
| 1970                            | 1089        | 278             |                     | 6           | 2            | 4               | 1379        |
| 1971                            | 1195        | 306             |                     | 7           | 2            | 6               | 1516        |
| 1972                            | 1318        | 334             |                     | 9           | 2            | 6               | 1669        |
| 1973                            | 1510        | 366             |                     | 9           | 3            | 7               | 1895        |
| 1974                            | 1714        | 400             |                     | 8           | 3            | 7               | 2132        |
| 1975                            | 1953        | 442             |                     | 10          | 3            | 8               | 2416        |
| 1976                            | 2275        | 495             |                     | 8           | 4            | 9               | 2791        |
| 1977                            | 2553        | 525             |                     | 13          | 4            | 10              | 3105        |
| 1978                            | 2828        | 546             |                     | 12          | 4            | 9               | 3399        |
| <b>Average Annual Growth%</b>   | <b>15.0</b> | <b>10.9</b>     |                     | <b>8.3</b>  | <b>13.4</b>  | <b>2.3</b>      | <b>14.1</b> |
| 1979                            | 3208        | 594             |                     | 13          | 4            | 10              | 3829        |
| 1980                            | 3642        | 662             |                     | 14          | 6            | 11              | 4335        |
| 1981                            | 4189        | 762             |                     | 16          | 8            | 13              | 4988        |
| 1982                            | 4724        | 842             |                     | 8           | 10           | 18              | 5602        |
| 1983                            | 5182        | 914             |                     | 8           | 13           | 21              | 6138        |
| 1984                            | 5652        | 975             |                     | 9           | 17           | 24              | 6677        |
| 1985                            | 6182        | 1071            |                     | 10          | 19           | 28              | 7310        |
| 1986                            | 6590        | 1111            |                     | 11          | 19           | 31              | 7762        |
| 1987                            | 6919        | 1206            |                     | 11          | 20           | 36              | 8192        |
| 1988                            | 7483        | 1269            |                     | 7           | 21           | 46              | 8826        |
| <b>**Average Annual Growth%</b> | <b>10.2</b> | <b>8.8</b>      |                     | <b>-5.2</b> | <b>18.0</b>  | <b>17.7</b>     | <b>10.0</b> |
| 1989                            | 7941        | 1327            |                     | 6           | 23           | 41              | 9338        |
| 1990                            | 8193        | 1364            |                     | 7           | 25           | 52              | 9641        |
| 1991                            | 8549        | 1452            |                     | 7           | 27           | 55              | 10090       |
| 1992                            | 8835        | 1566            |                     | 7           | 28           | 58              | 10494       |
| 1993                            | 9402        | 1620            |                     | 31          | 31           | 4               | 11088       |
| 1994                            | 9924        | 385             | 1328                | 46          | 32           | 2               | 11717       |
| <b>**Average Annual Growth%</b> | <b>4.8</b>  | <b>-18.0</b>    |                     | <b>36.9</b> | <b>7.3</b>   | <b>-40.7</b>    | <b>4.8</b>  |
| 1995                            | 10408       | 317             | 1463                | 52          | 34           | 2               | 12276       |
| 1996                            | 10441       | 290             | 1579                | 55          | 38           | 452             | 12855       |
| 1997                            | 11385       | 350             | 1706                | 69          | 40           |                 | 13550       |
| 1998                            | 11881       | 355             | 1772                | 75          | 44           |                 | 14127       |
| 1999                            | 12502       | 436             | 1805                | 81          | 51           |                 | 14875       |
| <b>**Average Annual Growth%</b> | <b>4.7</b>  | <b>2.5</b>      | <b>6.3</b>          | <b>12.0</b> | <b>9.8</b>   |                 | <b>4.9</b>  |
| 2000                            | 13072       | 465             | 1896                | 86          | 60           |                 | 15579       |
| 2001                            | 13683       | 523             | 1970                | 91          | 78           |                 | 16345       |
| 2002                            | 14377       | 558             | 2030                | 99          | 89           | * 18            | 17153       |
| 2003                            | 15041       | 599             | 2120                | 110         | 106          | * 23            | 17977       |
| 2004                            | 15719       | 634             | 2216                | 121         | 116          | * 30            | 18806       |
| <b>**Average Annual Growth%</b> | <b>4.7</b>  | <b>7.8</b>      | <b>4.2</b>          | <b>8.4</b>  | <b>17.9</b>  |                 | <b>4.8</b>  |
| 2005                            | 16398       | 677             | 2314                | 132         | 127          | * 37            | 19652       |
| 2006                            | 16989       | 749             | 2531                | 152         | 138          | * 47            | 20559       |
| 2007                            | 17770       | 792             | 2668                | 166         | 151          | * 54            | 21547       |
| 2008                            | 18715       | 856             | 2828                | 165         | 174          | * 70            | 22738       |
| 2009                            | 19844       | 952             | 3031                | 161         | 202          | * 81            | 24191       |
| 2010                            | 21048       | 1005            | 3223                | 159         | 258          | * 98            | 25693       |
| <b>Average Annual Growth%</b>   | <b>5.0</b>  | <b>8.1</b>      | <b>6.4</b>          | <b>4.7</b>  | <b>14.3</b>  |                 | <b>5.3</b>  |
| 2011                            | 22224       | 1083            | 3400                | 174         | 285          | * 112           | 27165       |
| 2012                            | 23467       | 1181            | 3611                | 185         | 307          | * 118           | 28752       |
| 2013                            | 24671       | 1283            | 3810                | 194         | 330          | * 128           | 30287       |
| 2014                            | 25739       | 1382            | 3992                | 206         | 353          | * 143           | 31672       |
| 2015                            | 26620       | 1465            | 4152                | 217         | 378          | * 162           | 32831       |

(1) Others sector include commercial sector

(1) Unusual reduction of Consumption in public sector is due to the seperation of others sector from it.

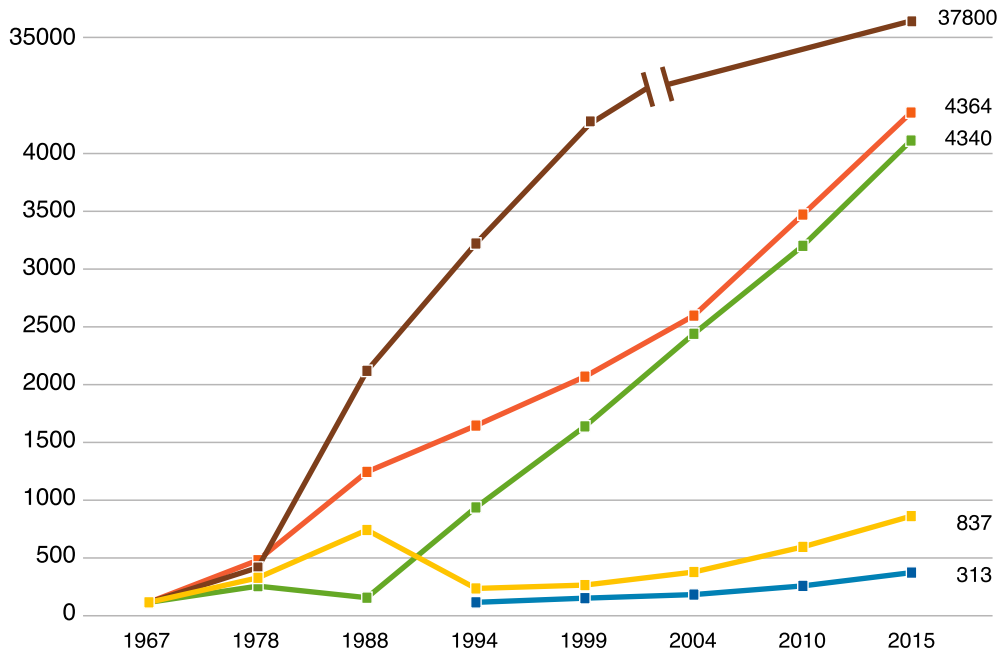
\*This figure is related to street lighting which is not included total



(1967=100 Base Year)

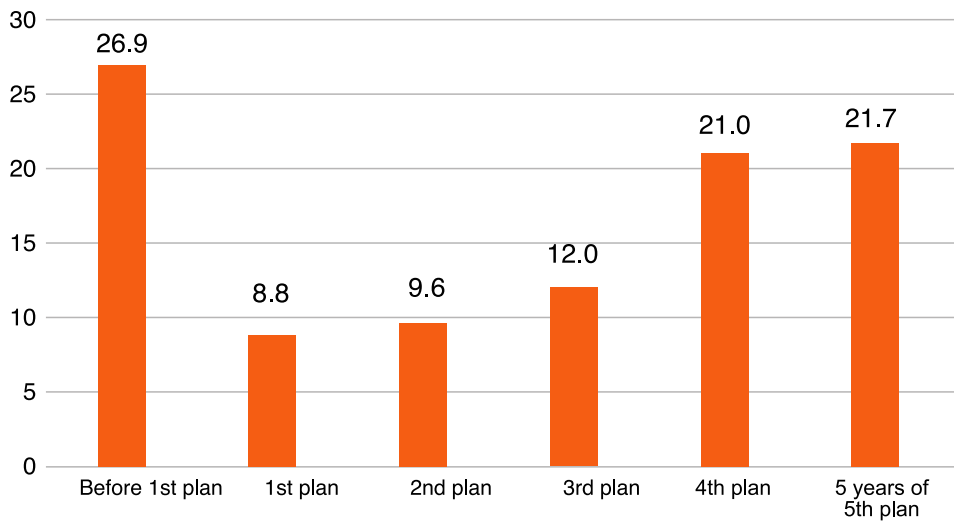
### Increasing Index of Number of Customers by Tariff

Residential ■ Public Services ■ Agricultural ■ Industrial ■ Other ■



(%)

### Contribution of Electricity Customers Number



## Exchanged Electricity with Neighboring Countries

(GWH)

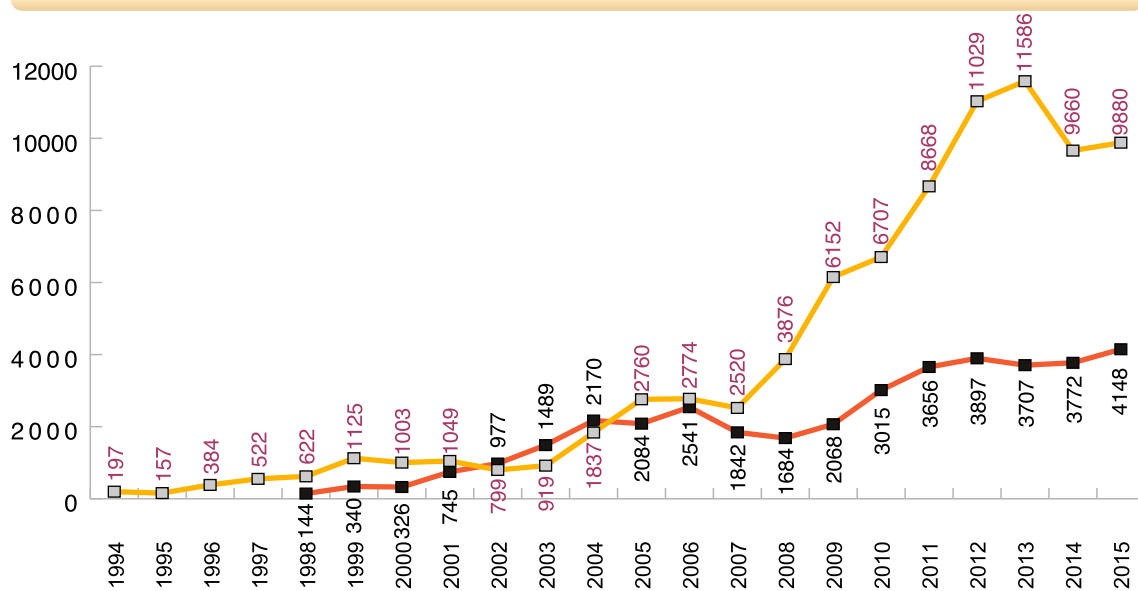
| Year | Export     |        |         |             |               |          |              |      |       | Import     |         |             |               |       | Exchange |
|------|------------|--------|---------|-------------|---------------|----------|--------------|------|-------|------------|---------|-------------|---------------|-------|----------|
|      | Nakhjav an | Turkey | Armenia | Azarbai jan | Turkmen istan | Pakistan | Afghane stan | Iraq | Total | Nakhja van | Armenia | Azarbaij an | Turkmeni stan | Total |          |
| 1993 | 195        |        |         |             |               |          |              |      | 195   |            |         |             |               |       | 195      |
| 1994 | 197        |        |         |             |               |          |              |      | 197   |            |         |             |               |       | 197      |
| 1995 | 157        |        |         |             |               |          |              |      | 157   |            |         |             |               |       | 157      |
| 1996 | 283        | 101    |         |             |               |          |              |      | 384   |            |         |             |               |       | 384      |
| 1997 | 283        | 175    | 64      |             |               |          |              |      | 522   |            |         |             |               |       | 522      |
| 1998 | 302        | 225    | 95      |             |               |          |              |      | 622   |            | 144     |             |               | 144   | 477      |
| 1999 | 349        | 302    | 475     |             |               |          |              |      | 1125  |            | 340     |             |               | 340   | 785      |
| 2000 | 283        | 289    | 410     | 20          |               |          |              |      | 1003  |            | 326     |             |               | 326   | 677      |
| 2001 | 389        | 251    | 224     | 185         |               |          |              |      | 1049  |            | 315     | 430         |               | 745   | 305      |
| 2002 | 464        | 5      | 328     | 2           |               |          |              |      | 799   |            | 330     | 620         | 27            | 977   | -178     |
| 2003 | 569        | 126    | 159     |             | 1             | 47       | 17           |      | 919   |            | 323     | 582         | 584           | 1489  | -570     |
| 2004 | 637        | 491    | 278     | 5           | 4             | 106      | 20           | 296  | 1837  | 0.3        | 424     | 702         | 1044          | 2170  | -333     |
| 2005 | 648        | 535    | 368     | 0.1         | 3             | 137      | 66           | 1003 | 2760  |            | 375     | 560         | 1148          | 2084  | 676      |
| 2006 | 561        | 576    | 316     | 11          | 2             | 172      | 134          | 1002 | 2774  | 56         | 428     | 536         | 1576          | 2541  | 233      |
| 2007 | 75         | 608    | 361     |             | 4             | 181      | 206          | 1085 | 2520  |            | 310     | 298         | 1178          | 1842  | 678      |
| 2008 | 69         | 453    | 422     |             | 2             | 228      | 286          | 2416 | 3876  | 49         | 356     | 298         | 981           | 1684  | 2191     |
| 2009 | 64         | 508    | 165     |             | 3             | 249      | 357          | 4808 | 6152  | 49         | 383     | 24          | 1612          | 2068  | 4084     |
| 2010 | 70         | 822    | 118     |             | 1             | 266      | 446          | 4985 | 6707  | 69         | 1149    | 20          | 1777          | 3015  | 3692     |
| 2011 | 56         | 1118   | 57      |             | 8             | 271      | 557          | 6601 | 8668  | 57         | 1508    | 2           | 2089          | 3656  | 5012     |
| 2012 | 59         | 1912   | 7       |             | 8             | 369      | 639          | 8035 | 11029 | 60         | 1582    | 2           | 2253          | 3897  | 7132     |
| 2013 | 65         | 2395   | 82      |             | 3             | 414      | 796          | 7831 | 11586 | 65         | 1103    | 6           | 2533          | 3707  | 7879     |
| 2014 | 66         | 2179   | 85      |             | 1             | 446      | 819          | 6063 | 9660  | 65         | 1051    | 3           | 2653          | 3772  | 5888     |
| 2015 | 50         | 1723   | 45      |             | 0.4           | 457      | 782          | 6822 | 9880  | 50         | 1344    | 4           | 2750          | 4148  | 5732     |

Minus sign indicates more imports than exports.

(GWH)

## Exchanged Electricity with Neighboring Countries

Export ■ Import ■

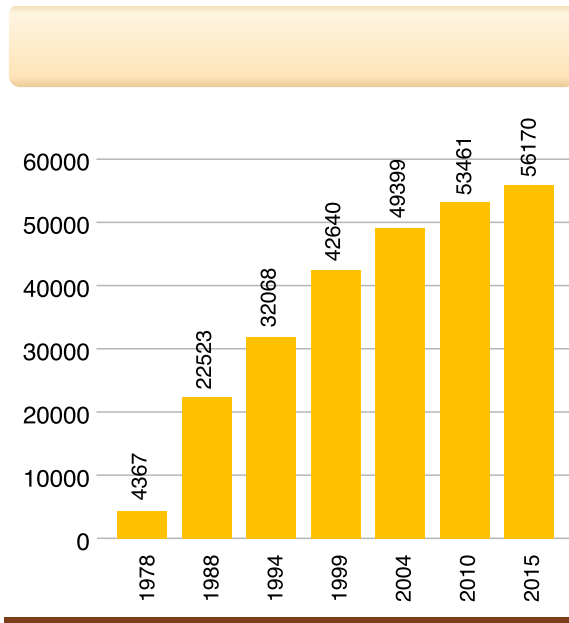


### Number of Electrified Villages (Village)

| Year                          | In Year | Total        | Iran Statistical Center Data** |
|-------------------------------|---------|--------------|--------------------------------|
| 1967                          | 14      | 148          |                                |
| 1968                          | 23      | 171          |                                |
| 1969                          | 46      | 217          |                                |
| 1970                          | 48      | 265          |                                |
| 1971                          | 117     | 382          |                                |
| 1972                          | 109     | 491          |                                |
| 1973                          | 162     | 653          |                                |
| 1974                          | 341     | 994          |                                |
| 1975                          | 567     | 1561         |                                |
| 1976                          | 799     | 2360         |                                |
| 1977                          | 1199    | 3559         |                                |
| 1978                          | 808     | 4367         |                                |
| <b>Average Annual Growth</b>  |         | <b>36%</b>   |                                |
| 1979                          | 1559    | 5926         |                                |
| 1980                          | 1847    | 7773         |                                |
| 1981                          | 1904    | 9677         |                                |
| 1982                          | 2149    | 11826        |                                |
| 1983                          | 2580    | 14406        |                                |
| 1984                          | 2437    | 16843        |                                |
| 1985                          | 2309    | 19152        |                                |
| 1986                          | 1324    | 20476        |                                |
| 1987                          | 1148    | 21624        |                                |
| 1988                          | 899     | 22523        |                                |
| <b>*Average Annual Growth</b> |         | <b>17.8%</b> |                                |
| 1989                          | 983     | 23506        |                                |
| 1990                          | 1044    | 24550        |                                |
| 1991                          | 1160    | 25710        |                                |
| 1992                          | 1168    | 26878        |                                |
| 1993                          | 3008    | 29886        |                                |
| 1994                          | 2182    | 32068        |                                |
| <b>*Average Annual Growth</b> |         | <b>6.1%</b>  |                                |
| 1995                          | 2377    | 34445        |                                |
| 1996                          | 1659    | 36104        |                                |
| 1997                          | 2191    | 38295        |                                |
| 1998                          | 2423    | 40718        |                                |
| 1999                          | 1922    | 42640        |                                |
| <b>*Average Annual Growth</b> |         | <b>5.9%</b>  |                                |
| 2000                          | 1564    | 44204        |                                |
| 2001                          | 1154    | 45358        |                                |
| 2002                          | 877     | 46235        |                                |
| 2003                          | 1124    | 47359        |                                |
| 2004                          | 1201    | 49399        |                                |
| <b>*Average Annual Growth</b> |         | <b>3.0%</b>  |                                |
| 2005                          | 795     | 52350        |                                |
| 2006                          | 709     | 53059        | 46469                          |
| 2007                          | 561     | 53620        | 47030                          |
| 2008                          | 455     | 51788        | 47887                          |
| 2009                          | 1027    | 52815        | 48914                          |
| 2010                          | 646     | 53461        | 49560                          |
| <b>*Average Annual Growth</b> |         | <b>1.3%</b>  |                                |
| 2011                          | 655     | 54116        | 50215                          |
| 2012                          | 445     | 54561        | 50660                          |
| 2013                          | 630     | 55191        | 51290                          |
| 2014                          | 473     | 55664        | 51763                          |
| 2015                          | 506     | 56170        | 52269                          |

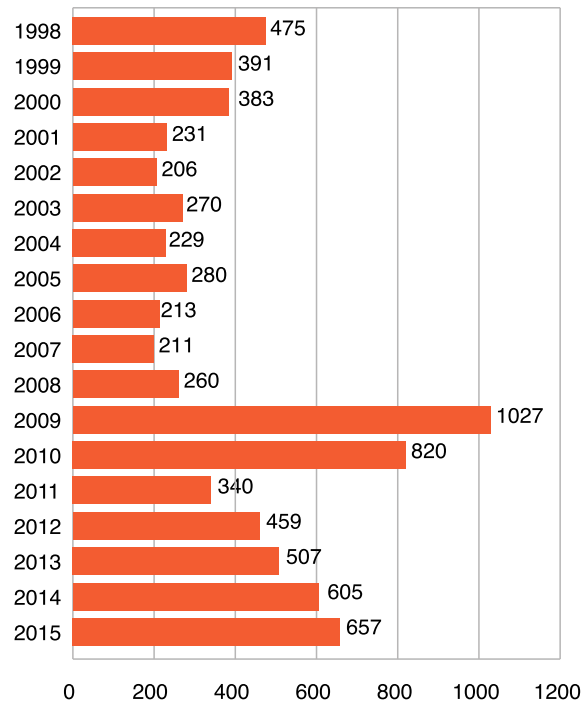
\*Respectively, beginning of 1st, 2nd, 3rd, 4th and 5th plans  
 \*\*According to the latest data of Iran statistical center

### Number of Electrified Villages



(10<sup>9</sup> Rials)

### Capital Investment on Rural Electrification



## Human Resources in Iran Electric Power Industry

(Person)

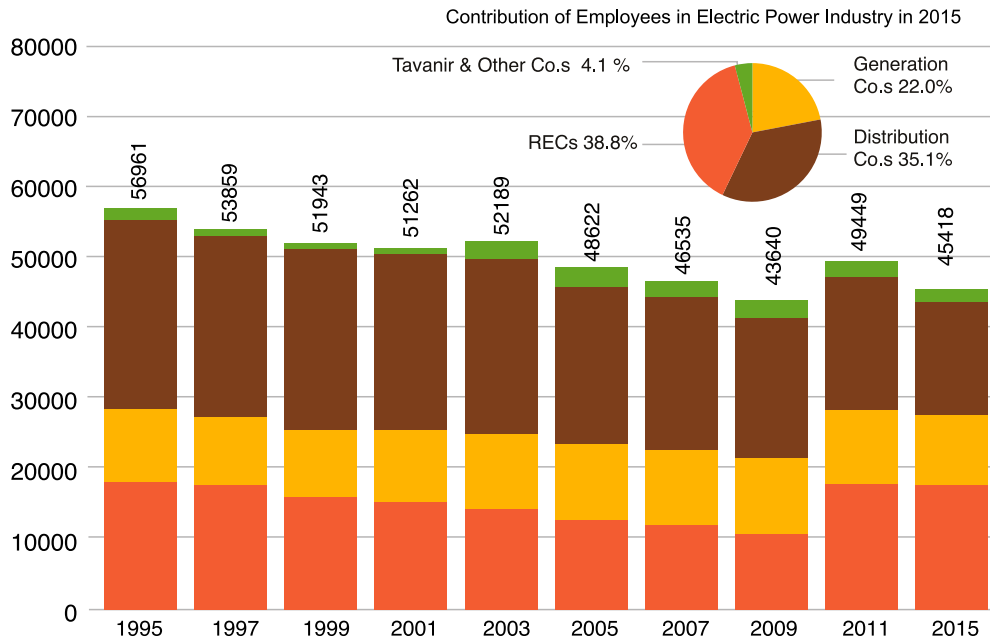
| Year  | Generation | Transmission & Distribution              | Financial         | Administration | Total                          |              |
|---|------------|--|-------------------|----------------|--------------------------------|--------------|
| 1967  | 1437       | 3014                                     | 1254              | 1499           | 7204                           |              |
| 1968  | 1839       | 4228                                     | 1438              | 1628           | 9133                           |              |
| 1969  | 2062       | 5696                                     | 1600              | 1621           | 10979                          |              |
| 1970  | 2208       | 7292                                     | 1338              | 2838           | 13676                          |              |
| 1971  | 2354       | 9334                                     | 1614              | 2340           | 15642                          |              |
| 1972  | 2944       | 9734                                     | 1808              | 3607           | 18093                          |              |
| 1973  | 3957       | 10728                                    | 1729              | 3783           | 20197                          |              |
| 1974  | 4791       | 12509                                    | 2114              | 5190           | 24604                          |              |
| 1975  | 5292       | 12972                                    | 2103              | 5842           | 26209                          |              |
| 1976  | 5638       | 14252                                    | 2125              | 6153           | 28168                          |              |
| 1977  | 5751       | 14819                                    | 2908              | 6569           | 30047                          |              |
| 1978  | 6311       | 16551                                    | 3190              | 6030           | 32082                          |              |
| <b>% Average Annual Growth</b>              |            |  |                   |                | <b>14.5</b>                    |              |
| 1979  | 8301       | 20461                                    | 3630              | 5907           | 38299                          |              |
| 1980  | 7927       | 17821                                    | 3118              | 8491           | 37357                          |              |
| 1981  | 7404       | 18432                                    | 2634              | 9245           | 37715                          |              |
| 1982  | 9011       | 19236                                    | 2844              | 8522           | 39613                          |              |
| 1983  | 9252       | 22130                                    | 3273              | 9981           | 44636                          |              |
| 1984  | 10859      | 23955                                    | 3519              | 14238          | 52571                          |              |
| 1985  | 11850      | 26810                                    | 3015              | 15295          | 56970                          |              |
| 1986  | 12150      | 27910                                    | 3115              | 13701          | 56876                          |              |
| 1987  | 12388      | 29078                                    | 3159              | 12013          | 56638                          |              |
| 1988  | 12222      | 29919                                    | 3296              | 13574          | 59011                          |              |
| <b>Beginning of First Development Plan</b>  |            |  |                   |                | <b>% Average Annual Growth</b> | <b>6.3</b>   |
| 1989  | 12054      | 30710                                    | 3690              | 14286          | 60740                          |              |
| 1990  | 12255      | 32571                                    | 4424              | 14887          | 64137                          |              |
| 1991  | 10920      | 33619                                    | 4287              | 17917          | 66743                          |              |
| 1992  | 11923      | 38553                                    | 3515              | 15148          | 69139                          |              |
| Year  | RECs       | Generation Companies & Hydro Power Plant | Distribution Co.s | Tavanir        | * Other Company                | Total        |
| 1993  | 21564      | 10150                                    | 28054             | 2418           |                                | 62186        |
| 1994  | 19312      | 10119                                    | 27639             | 1779           |                                | 58849        |
| <b>Beginning of Second Development Plan</b> |            |  |                   |                | <b>% Average Annual Growth</b> | <b>-0.05</b> |
| 1995  | 18010      | 10410                                    | 26805             | 1736           |                                | 56961        |
| 1996  | 17348      | 10169                                    | 26398             | 911            |                                | 54826        |
| 1997  | 17645      | 9653                                     | 25672             | 889            |                                | 53859        |
| 1998  | 16402      | 9386                                     | 25477             | 893            |                                | 52158        |
| 1999  | 15997      | 9496                                     | 25587             | 863            |                                | 51943        |
| <b>Beginning of Third Development Plan</b>  |            |  |                   |                | <b>% Average Annual Growth</b> | <b>-2.5</b>  |
| 2000  | 15277      | 9693                                     | 25483             | 837            |                                | 51290        |
| 2001  | 15261      | 10109                                    | 25079             | 813            |                                | 51262        |
| 2002  | 14849      | 10539                                    | 24536             | 812            | 1693                           | 52429        |
| 2003  | 14259      | 10547                                    | 24870             | 782            | 1731                           | 52189        |
| 2004  | 13287      | 10770                                    | 23717             | 741            | 2028                           | 50543        |
| <b>Beginning of Fourth Development Plan</b> |            |  |                   |                | <b>% Average Annual Growth</b> | <b>-0.5</b>  |
| 2005  | 12721      | 10677                                    | 22394             | 618            | 2212                           | 48622        |
| 2006  | 12569      | 10582                                    | 21883             | 644            | 1832                           | 47510        |
| 2007  | 11989      | 10611                                    | 21705             | 621            | 1609                           | 46535        |
| 2008  | 11334      | 10895                                    | 20317             | 663            | 1744                           | 44953        |
| 2009  | 10555      | 10605                                    | 19962             | 610            | 1908                           | 43640        |
| 2010  | 9900       | 10369                                    | 18962             | 580            | 1948                           | 41711        |
| <b>Beginning of Fifth Development Plan</b>  |            |  |                   |                | <b>% Average Annual Growth</b> | <b>-3.1</b>  |
| 2011  | 17794      | 10425                                    | 18893             | 921            | 1416                           | 49449        |
| 2012  | 17147      | 10110                                    | 17564             | 905            | 1398                           | 47124        |
| 2013  | 17985      | 10249                                    | 16499             | 882            | 1432                           | 47047        |
| 2014  | 17675      | 9846                                     | 16441             | 823            | 1415                           | 46200        |
| 2015  | 17597      | 9999                                     | 15940             | 811            | 1071                           | 45418        |

\* Other companies include Iran Power Development Org.(IPDO), SUNA, SABA & Iran Power Plant Repairs Co. and IGMC

(Person)

## Number of Employees in Iran Electric Power Industry

RECs Generation Co.s Distribution Co.s Tavanir & Other Co.s

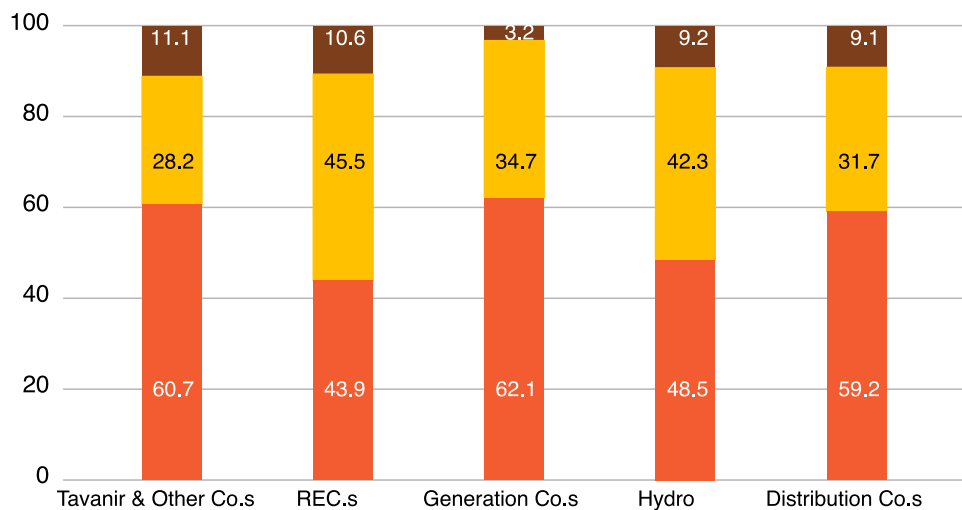


In 2002, the number of personnels of Iran Power Development Org. SUNA, SABA & Iran Power Plant Repairs Co & IGMC Repairs Co. have been added to the number of personnel of Tavanir Co.

(%)

## Contribution of Iran Electric Power Industry Personnel's Education in 2015

B.A and Higher Diploma and Technician Below Diploma



## Iran Electric Power Industry Personnel's Education

(Person)

| Year                              | Below Diploma | Diploma and Technician | B.A and Higher | Total        |
|-----------------------------------|---------------|------------------------|----------------|--------------|
| 1967                              | 6114          | 730                    | 360            | 7204         |
| 1972                              | 11549         | 5385                   | 1159           | 18093        |
| 1977                              | 19161         | 9357                   | 1529           | 30047        |
| 1978                              | 20951         | 9600                   | 1531           | 32082        |
| <b>*Average Annual Growth (%)</b> |               |                        |                | <b>14.5</b>  |
| 1979                              | 24535         | 11807                  | 1957           | 38299        |
| 1980                              | 26359         | 8949                   | 2049           | 37357        |
| 1981                              | 25037         | 10592                  | 2086           | 37715        |
| 1982                              | 25806         | 11453                  | 2354           | 39613        |
| 1983                              | 28505         | 13315                  | 2816           | 44636        |
| 1984                              | 32852         | 16402                  | 3317           | 52571        |
| 1985                              | 32520         | 20935                  | 3515           | 56970        |
| 1986                              | 33009         | 20308                  | 3559           | 56876        |
| 1987                              | 33887         | 19112                  | 3639           | 56638        |
| 1988                              | 35460         | 19650                  | 3901           | 59011        |
| <b>*Average Annual Growth (%)</b> |               |                        |                | <b>6.3</b>   |
| 1989                              | 35741         | 20740                  | 4259           | 60740        |
| 1990                              | 37887         | 23705                  | 4545           | 66137        |
| 1991                              | 38713         | 23240                  | 4790           | 66743        |
| 1992                              | 38711         | 25064                  | 5364           | 69139        |
| 1993 <sup>(1)</sup>               | -             | -                      | -              | 62186        |
| 1994                              | 34191         | 20656                  | 4002           | 58849        |
| <b>*Average Annual Growth (%)</b> |               |                        |                | <b>-0.05</b> |
| 1995                              | 32088         | 20014                  | 4859           | 56961        |
| 1996                              | 30214         | 19644                  | 4968           | 54826        |
| 1997                              | 28958         | 19190                  | 5711           | 53859        |
| 1998                              | 27286         | 18786                  | 6086           | 52158        |
| 1999                              | 26027         | 19166                  | 6750           | 51943        |
| <b>*Average Annual Growth (%)</b> |               |                        |                | <b>-2.5</b>  |
| 2000                              | 24461         | 19450                  | 7379           | 51425        |
| 2001                              | 23293         | 19804                  | 8165           | 51262        |
| 2002                              | 22020         | 20475                  | 9521           | 52429        |
| 2003                              | 20786         | 20948                  | 10455          | 52189        |
| 2004                              | 19188         | 20472                  | 10883          | 50543        |
| <b>*Average Annual Growth (%)</b> |               |                        |                | <b>- 0.5</b> |
| 2005                              | 16850         | 20027                  | 11745          | 48622        |
| 2006                              | 15718         | 19946                  | 11846          | 47510        |
| 2007                              | 14445         | 19838                  | 12252          | 46535        |
| 2008                              | 12578         | 19198                  | 13177          | 44953        |
| 2009                              | 10797         | 18712                  | 14131          | 43640        |
| 2010                              | 9403          | 17451                  | 14857          | 41711        |
| <b>*Average Annual Growth (%)</b> |               |                        |                | <b>-3.1</b>  |
| 2011                              | 8865          | 23714                  | 16870          | 49449        |
| 2012                              | 6863          | 21738                  | 18523          | 47124        |
| 2013                              | 5584          | 20857                  | 20606          | 47047        |
| 2014                              | 4568          | 19481                  | 22151          | 46200        |
| 2015                              | 3933          | 17169                  | 24316          | 45418        |

(1) Not available 1993

\*Beginning of the 1st, 2nd, 3rd, 4th and 5th development plans, respectively

## Investment in Electric Power Industry Facilities

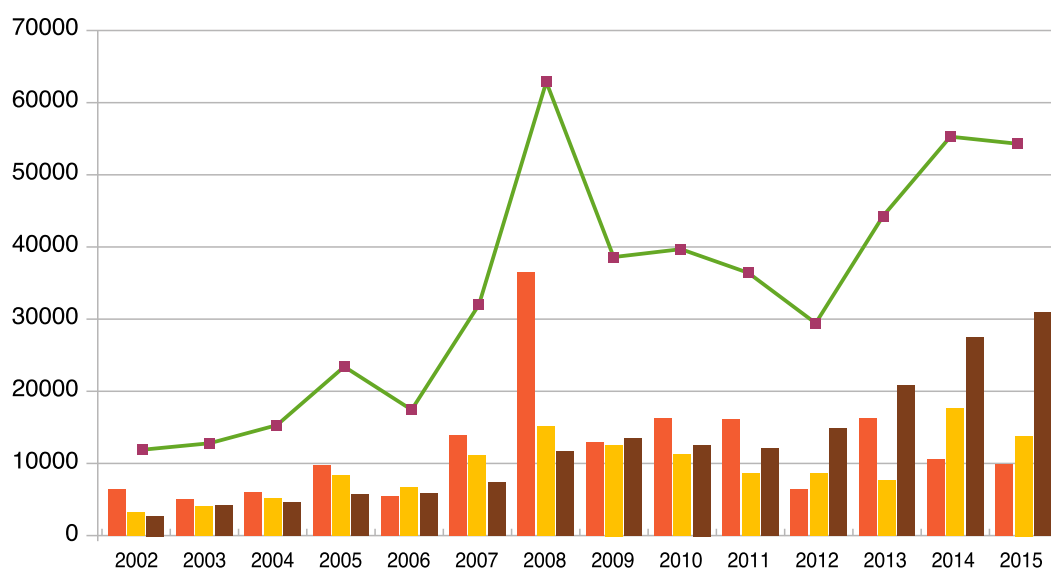
(10<sup>9</sup> Rials)

| Year | Generation |       | Transmission |       | Distribution |       | Total |
|------|------------|-------|--------------|-------|--------------|-------|-------|
|      | Price      | Share | Price        | Share | Price        | Share |       |
| 1997 | 2188       | 57.0  | 949          | 24.7  | 699          | 18.2  | 3836  |
| 1998 | 2421       | 49.8  | 1219         | 25.1  | 1222         | 25.1  | 4862  |
| 1999 | 3109       | 53.2  | 1568         | 26.8  | 1170         | 20.0  | 5847  |
| 2000 | 2993       | 42.9  | 2139         | 30.6  | 1850         | 26.5  | 6982  |
| 2001 | 4183       | 42.8  | 2917         | 29.9  | 2664         | 27.3  | 9764  |
| 2002 | 6328       | 51.2  | 3287         | 26.6  | 2749         | 22.2  | 12364 |
| 2003 | 5014       | 37.8  | 4097         | 30.9  | 4145         | 31.3  | 13256 |
| 2004 | 5987       | 38.1  | 5173         | 32.9  | 4580         | 28.9  | 15740 |
| 2005 | 9710       | 40.9  | 8293         | 34.9  | 5755         | 24.2  | 23758 |
| 2006 | 5402       | 30.3  | 6644         | 37.2  | 5795         | 32.5  | 17841 |
| 2007 | 13839      | 42.9  | 11004        | 34.1  | 7413         | 23.0  | 32256 |
| 2008 | 36133      | 57.5  | 14991        | 23.9  | 11669        | 18.6  | 62793 |
| 2009 | 12826      | 33.1  | 12501        | 32.2  | 13456        | 34.7  | 38783 |
| 2010 | 16124      | 40.4  | 11241        | 28.2  | 12501        | 31.4  | 39866 |
| 2011 | 15985      | 43.7  | 8648         | 23.6  | 11983        | 32.7  | 36616 |
| 2012 | 6418       | 21.6  | 8572         | 28.8  | 14724        | 49.6  | 29714 |
| 2013 | 16097      | 36.3  | 7654         | 17.2  | 20646        | 46.5  | 44397 |
| 2014 | 10540      | 19.1  | 17462        | 31.6  | 27288        | 49.4  | 55290 |
| 2015 | 9868       | 18.2  | 13740        | 25.3  | 30706        | 56.5  | 54314 |

(10<sup>9</sup> Rials)

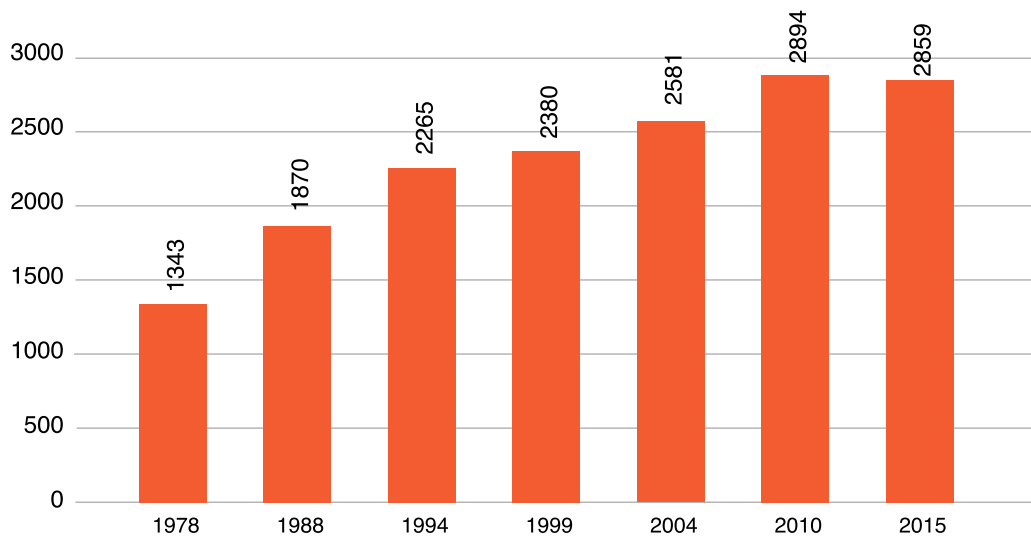
## Investment in Electric Power Industry Facilities

■ Generation   
 ■ Transmission   
 ■ Distribution   
 —■— Total



(KWH)

### Average Electricity Consumption of Residential Customers

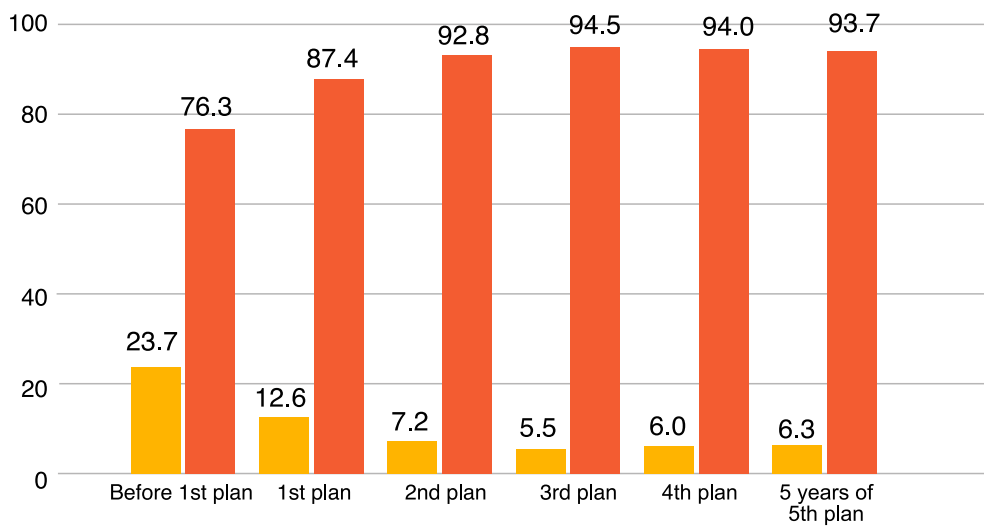


(%)

### Contribution of Thermal & Non-Thermal Power Plants in Power Generation

Nuclear, Renewable & Hydro

Thermal



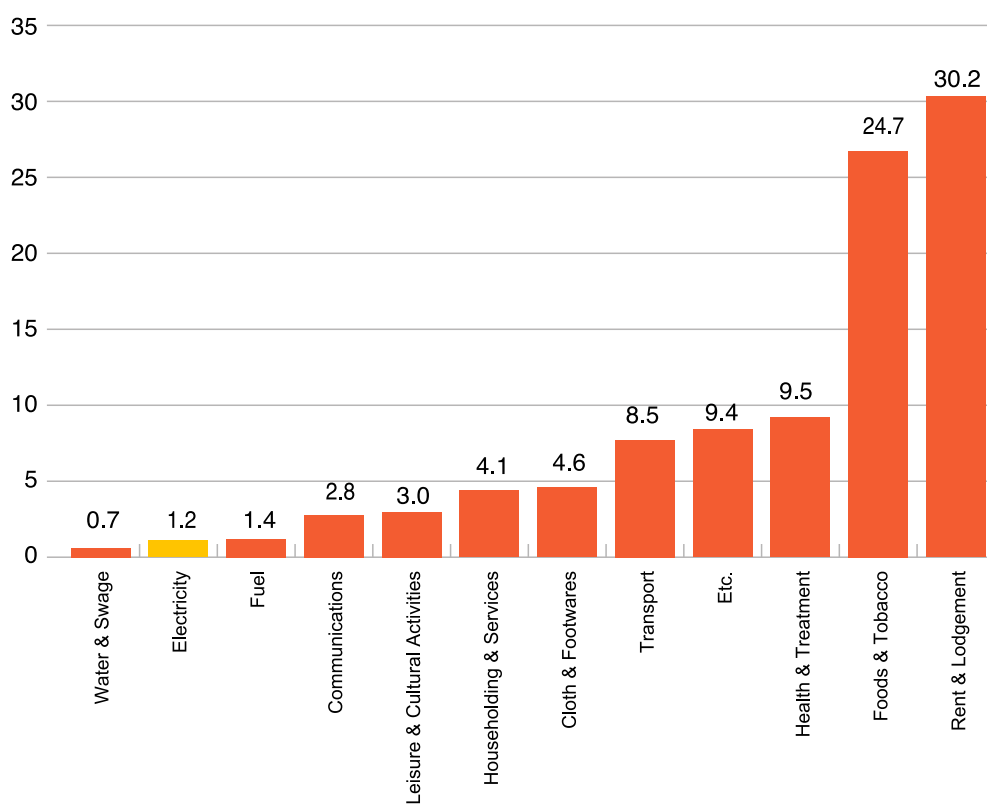


### Contribution of Annual Food and Other Net Expenditure for an Urban Household (%)

| Description                   | 2002  | 2003  | 2004  | 2005  | 2006  | 2007  | 2008  | 2009  | 2010  | 2011 | 2012 | 2013 | 2014 |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| Foods & Tobacco               | 25.39 | 25.96 | 25.64 | 24.06 | 22.57 | 22.39 | 22.67 | 22.69 | 23.01 | 24.7 | 27.1 | 26.7 | 24.7 |
| Cloth & Footwares             | 6.57  | 6.14  | 6.09  | 5.98  | 5.84  | 5.52  | 5.35  | 5.05  | 4.79  | 4.2  | 4.5  | 4.6  | 4.6  |
| Rent & Lodgement              | 28.67 | 28.04 | 25.84 | 24.99 | 27.10 | 28.67 | 31.26 | 29.35 | 30.21 | 28.8 | 30.2 | 30.3 | 30.2 |
| Electricity                   | 1.19  | 1.22  | 1.13  | 1.03  | 0.91  | 0.87  | 0.76  | 0.71  | 0.78  | 1.45 | 1.25 | 1.1  | 1.2  |
| Water & Swage                 | 0.95  | 0.96  | 0.89  | 0.83  | 0.64  | 0.65  | 0.55  | 0.53  | 0.56  | 0.9  | 0.7  | 0.6  | 0.7  |
| Fuel                          | 1.39  | 1.47  | 1.26  | 1.04  | 0.84  | 0.83  | 0.68  | 0.63  | 1.02  | 2.3  | 1.4  | 1.2  | 1.4  |
| Householding & Services       | 5.79  | 5.57  | 5.61  | 5.60  | 5.64  | 5.13  | 4.61  | 5.07  | 4.46  | 4.0  | 3.9  | 4.4  | 4.1  |
| Health & Treatment            | 7.35  | 6.75  | 7.34  | 8.10  | 7.94  | 8.35  | 8.34  | 8.62  | 9.24  | 8.7  | 8.6  | 9.2  | 9.5  |
| Transport                     | 8.46  | 8.94  | 10.58 | 11.77 | 11.15 | 10.05 | 9.31  | 9.29  | 9.22  | 8.9  | 7.8  | 7.7  | 8.5  |
| Communications                | 2.76  | 2.99  | 3.27  | 3.60  | 4.18  | 4.60  | 4.20  | 3.81  | 3.34  | 3.5  | 3.0  | 2.8  | 2.8  |
| Leisure & Cultural Activities | 3.37  | 3.24  | 3.73  | 3.70  | 3.63  | 3.39  | 3.35  | 3.44  | 3.68  | 3.2  | 3.0  | 3    | 3.0  |
| Etc.                          | 8.10  | 8.72  | 8.62  | 9.33  | 9.56  | 9.54  | 8.92  | 10.81 | 9.71  | 9.3  | 8.4  | 8.4  | 9.4  |

Source: Iran Statistical Annual Report

### (%) Contribution of Various Expenditures for an Urban Households in 2014



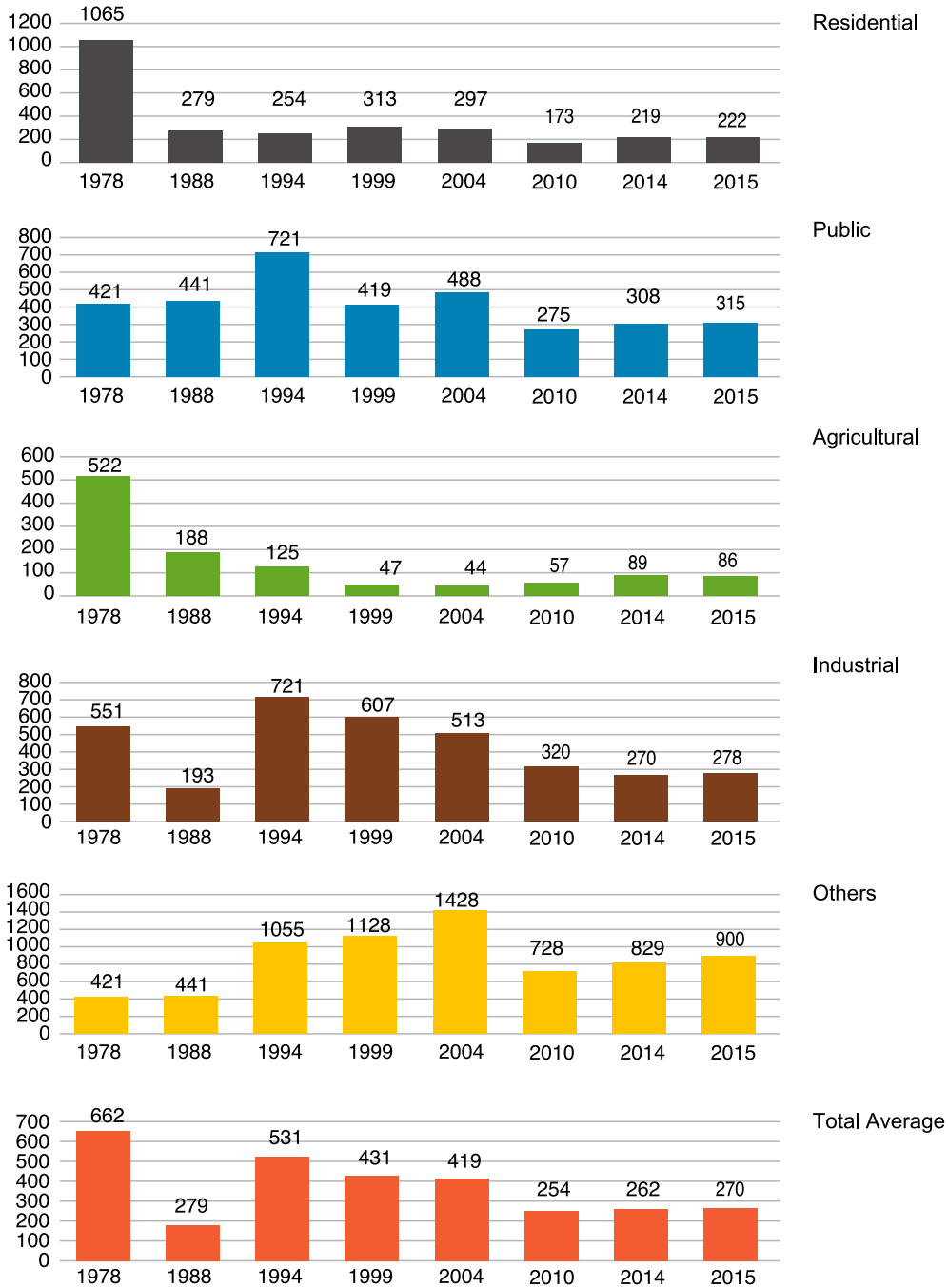
**Average Rate of Electricity Sale to Various Consuming Sectors Based on Current Prices (Rial/KWH)**

| Year                            | Residential  | Public Services | Agricultural | Industrial   | Others       | Total Average |
|---------------------------------|--------------|-----------------|--------------|--------------|--------------|---------------|
| 1968                            | 4.27         | 1.95            | 1.91         | 2.15         | 1.95         | 2.89          |
| 1969                            | 3.46         | 1.58            | 1.55         | 1.74         | 1.58         | 2.21          |
| 1970                            | 2.70         | 1.23            | 1.21         | 1.36         | 1.23         | 1.66          |
| 1971                            | 3.01         | 1.37            | 1.35         | 1.51         | 1.37         | 1.83          |
| 1972                            | 2.78         | 1.27            | 1.24         | 1.40         | 1.27         | 1.68          |
| 1973                            | 2.49         | 1.14            | 1.11         | 1.25         | 1.14         | 1.47          |
| 1974                            | 2.33         | 1.06            | 1.04         | 1.17         | 1.06         | 1.42          |
| 1975                            | 2.57         | 1.17            | 1.15         | 1.29         | 1.17         | 1.53          |
| 1976                            | 2.80         | 1.28            | 1.25         | 1.41         | 1.28         | 1.70          |
| 1977                            | 3.57         | 1.43            | 1.60         | 1.80         | 1.43         | 2.17          |
| 1978                            | 3.67         | 1.45            | 1.80         | 1.90         | 1.45         | 2.28          |
| <b>%Average Annual Growth</b>   | <b>-1.50</b> | <b>-2.92</b>    | <b>-0.59</b> | <b>-1.23</b> | <b>-2.92</b> | <b>-2.34</b>  |
| 1979                            | 3.10         | 1.93            | 2.45         | 2.00         | 1.93         | 2.34          |
| 1980                            | 4.19         | 3.22            | 2.48         | 1.62         | 3.22         | 2.82          |
| 1981                            | 4.55         | 3.84            | 2.53         | 1.70         | 3.84         | 3.16          |
| 1982                            | 5.11         | 5.15            | 2.75         | 2.12         | 5.15         | 3.86          |
| 1983                            | 3.81         | 7.15            | 3.24         | 1.70         | 7.15         | 3.54          |
| 1984                            | 4.08         | 6.63            | 3.61         | 1.66         | 6.63         | 3.53          |
| 1985                            | 4.08         | 6.68            | 3.38         | 1.59         | 6.68         | 3.59          |
| 1986                            | 4.22         | 6.96            | 2.75         | 1.80         | 6.96         | 3.85          |
| 1987                            | 5.23         | 7.90            | 3.64         | 3.50         | 7.90         | 5.17          |
| 1988                            | 5.35         | 8.45            | 3.60         | 3.70         | 8.45         | 5.35          |
| <b>* %Average Annual Growth</b> | <b>3.84</b>  | <b>19.27</b>    | <b>7.18</b>  | <b>6.89</b>  | <b>19.27</b> | <b>8.90</b>   |
| 1989                            | 5.30         | 8.45            | 3.85         | 3.50         | 8.45         | 5.37          |
| 1990                            | 5.40         | 8.45            | 4.60         | 4.40         | 8.45         | 5.68          |
| 1991                            | 7.00         | 12.50           | 4.70         | 9.10         | 12.50        | 8.49          |
| 1992                            | 9.70         | 15.50           | 4.90         | 9.50         | 15.50        | 10.50         |
| 1993                            | 13.50        | 24.00           | 5.20         | 18.00        | 24.00        | 17.06         |
| 1994                            | 15.50        | 43.98           | 7.60         | 43.98        | 64.32        | 32.40         |
| <b>* %Average Annual Growth</b> | <b>19.40</b> | <b>31.60</b>    | <b>13.30</b> | <b>51.10</b> | <b>40.30</b> | <b>35.00</b>  |
| 1995                            | 20.45        | 53.12           | 7.83         | 53.05        | 74.05        | 38.82         |
| 1996                            | 26.08        | 48.43           | 7.90         | 66.46        | 91.20        | 46.56         |
| 1997                            | 31.20        | 65.11           | 8.20         | 83.61        | 96.78        | 55.93         |
| 1998                            | 41.41        | 70.30           | 8.20         | 102.70       | 116.33       | 67.06         |
| 1999                            | 58.32        | 77.95           | 8.78         | 113.00       | 210.01       | 80.30         |
| <b>* %Average Annual Growth</b> | <b>30.35</b> | <b>12.13</b>    | <b>2.93</b>  | <b>20.77</b> | <b>26.70</b> | <b>19.90</b>  |
| 2000                            | 65.11        | 83.54           | 12.81        | 121.00       | 246.99       | 89.35         |
| 2001                            | 72.92        | 99.59           | 11.49        | 133.59       | 273.86       | 98.52         |
| 2002                            | 85.14        | 124.49          | 12.65        | 146.94       | 342.31       | 114.10        |
| 2003                            | 97.00        | 152.00          | 14.00        | 162.91       | 412.01       | 131.76        |
| 2004                            | 107.08       | 175.89          | 16.01        | 185.02       | 515.25       | 151.06        |
| <b>* %Average Annual Growth</b> | <b>12.92</b> | <b>17.68</b>    | <b>12.77</b> | <b>10.36</b> | <b>19.66</b> | <b>13.47</b>  |
| 2005                            | 102.74       | 176.81          | 21.56        | 201.57       | 539.74       | 152.08        |
| 2006                            | 102.92       | 181.70          | 21.25        | 200.41       | 541.16       | 152.78        |
| 2007                            | 124.67       | 159.61          | 20.97        | 205.86       | 507.95       | 164.98        |
| 2008                            | 119.34       | 228.92          | 21.98        | 204.61       | 552.36       | 174.25        |
| 2009                            | 129.00       | 152.00          | 21.00        | 206.00       | 501.00       | 165.00        |
| 2010                            | 142.26       | 226.53          | 46.80        | 263.58       | 599.10       | 208.70        |
| <b>* %Average Annual Growth</b> | <b>4.85</b>  | <b>4.31</b>     | <b>19.58</b> | <b>6.08</b>  | <b>2.53</b>  | <b>5.53</b>   |
| 2011                            | 334.84       | 501.56          | 125.65       | 441.91       | 1275.25      | 409.48        |
| 2012                            | 337.46       | 491.01          | 131.10       | 427.52       | 1339.45      | 407.01        |
| 2013                            | 364.7        | 516.3           | 133.4        | 442.6        | 1342.2       | 418.5         |
| 2014                            | 439.4        | 617.6           | 177.9        | 542.6        | 1664.0       | 525.6         |
| 2015                            | 504.7        | 717.6           | 195.5        | 633.2        | 2046.8       | 614.7         |

\*Beginning of the 1st, 2nd, 3rd, 4th and 5th development plans , respectively

(Rial/KWH)

### Average Rate of Electricity Sale to Various Consuming Sectors Based on Constant Prices in 2011 (CPI)



## Some Important Indices

| Year                           | Population (Person) | Gross Domestic Product (Base Price) at Constant Price of 2004 (10 <sup>9</sup> Rials) | Installed Capacity per Employee | Generation per Employee | Consumption per Employee | Average Consumption of Residential Customers | Transformer Capacity per Employee | Transmission & Sub-Transmission Lines Length per Employee |
|--------------------------------|---------------------|---|---------------------------------|-------------------------|--------------------------|--|-----------------------------------|---|
| 1967                           | 26.5                | 464519  | 130                             | 256                     | 111                      | 775  | 174                               | 139   |
| 1968                           | 27.2                | 530386  | 110                             | 266                     | 110                      | 826  | 292                               | 211   |
| 1969                           | 27.9                | 612127  | 120                             | 291                     | 107                      | 759  | 391                               | 270   |
| 1970                           | 28.7                | 679713  | 102                             | 311                     | 101                      | 742  | 375                               | 329   |
| 1971                           | 295                 | 777123  | 128                             | 351                     | 97                       | 823  | 369                               | 348   |
| 1972                           | 30.3                | 893036  | 116                             | 380                     | 92                       | 924  | 443                               | 309   |
| 1973                           | 31.1                | 975536  | 138                             | 462                     | 94                       | 942  | 485                               | 344   |
| 1974                           | 31.9                | 1060039   | 131                             | 454                     | 87                       | 945  | 447                               | 325   |
| 1975                           | 32.8                | 104238  | 132                             | 488                     | 92                       | 1041   | 471                               | 328   |
| 1976                           | 33.7                | 1238379   | 131                             | 505                     | 99                       | 1152   | 471                               | 334   |
| 1977                           | 35.0                | 1192312   | 185                             | 524                     | 103                      | 1268   | 536                               | 398   |
| 1978                           | 36.4                | 1039932   | 219                             | 542                     | 106                      | 1343   | 576                               | 423   |
| <b>Average Annual Growth %</b> | <b>2.9</b>          | <b>7.6</b>  | <b>4.9</b>                      | <b>7.1</b>              | <b>-0.4</b>              | <b>5.1</b>                                   | <b>11.5</b>                       | <b>10.7</b>   |
| 1979                           | 37.8                | 941703  | 207                             | 508                     | 100                      | 1466   | 560                               | 381   |
| 1980                           | 39.3                | 722813  | 258                             | 532                     | 116                      | 1504   | 628                               | 418   |
| 1981                           | 40.8                | 686902  | 271                             | 594                     | 132                      | 1387   | 696                               | 464   |
| 1982                           | 42.4                | 843208  | 260                             | 665                     | 141                      | 1556   | 731                               | 482   |
| 1983                           | 44.1                | 925031  | 245                             | 684                     | 138                      | 1709   | 709                               | 498   |
| 1984                           | 45.8                | 855036  | 217                             | 649                     | 127                      | 1781   | 659                               | 462   |
| 1985                           | 47.6                | 870351  | 217                             | 645                     | 128                      | 1830   | 706                               | 480   |
| 1986                           | 49.4                | 785295  | 229                             | 686                     | 136                      | 1884   | 790                               | 523   |
| 1987                           | 50.7                | 786922  | 235                             | 751                     | 145                      | 1975   | 843                               | 548   |
| 1988                           | 51.9                | 745357  | 232                             | 742                     | 150                      | 1870   | 861                               | 575   |
| <b>Average Annual Growth %</b> | <b>3.6</b>          | <b>-3.3</b>   | <b>0.6</b>                      | <b>3.2</b>              | <b>3.5</b>               | <b>3.4</b>                                   | <b>4.1</b>                        | <b>3.1</b>  |
| 1989                           | 53.2                | 789133  | 238                             | 802                     | 154                      | 1989   | 893                               | 596   |
| 1990                           | 54.5                | 899956  | 231                             | 856                     | 150                      | 2117   | 908                               | 597   |
| 1991                           | 55.8                | 1010601   | 222                             | 895                     | 151                      | 2237   | 899                               | 603   |
| 1992                           | 56.7                | 1041570   | 236                             | 925                     | 152                      | 2208   | 910                               | 622   |
| 1993                           | 57.5                | 1055690   | 293                             | 1147                    | 178                      | 2355   | 1084                              | 736   |
| 1994                           | 58.3                | 1045963   | 347                             | 1310                    | 199                      | 2265   | 1197                              | 816   |
| <b>Average Annual Growth %</b> | <b>2.0</b>          | <b>5.8</b>  | <b>6.9</b>                      | <b>9.9</b>              | <b>4.9</b>               | <b>3.2</b>                                   | <b>5.6</b>                        | <b>6.0</b>  |
| 1995                           | 59.2                | 1074044   | 385                             | 1405                    | 216                      | 2246   | 1329                              | 908   |
| 1996                           | 60.0                | 1131946   | 409                             | 1565                    | 234                      | 2298   | 1428                              | 1000  |
| 1997                           | 60.9                | 1141305   | 432                             | 1714                    | 252                      | 2330   | 1521                              | 1071  |
| 1998                           | 61.8                | 1166376   | 469                             | 1876                    | 271                      | 2414   | 1675                              | 1180  |
| 1999                           | 62.7                | 1186177   | 485                             | 2064                    | 286                      | 2380   | 1805                              | 1272  |
| <b>Average Annual Growth %</b> | <b>1.5</b>          | <b>2.5</b>  | <b>6.9</b>                      | <b>9.5</b>              | <b>7.5</b>               | <b>1.0</b>                                   | <b>8.6</b>                        | <b>9.3</b>  |
| 2000                           | 63.7                | 1253472   | 511                             | 2250                    | 303                      | 2392   | 1921                              | 1363  |
| 2001                           | 64.5                | 1279193   | 547                             | 2424                    | 319                      | 2404   | 2024                              | 1442  |
| 2002                           | 65.5                | 1383116   | 584                             | 2578                    | 327                      | 2431   | 2166                              | 1473  |
| 2003                           | 66.5                | 1499528   | 695                             | 2816                    | 344                      | 2524   | 2300                              | 1612  |
| 2004                           | 67.5                | 1569066   | 738                             | 3222                    | 372                      | 2581   | 2531                              | 1779  |
| <b>Average Annual Growth %</b> | <b>1.5</b>          | <b>6.4</b>  | <b>8.7</b>                      | <b>9.3</b>              | <b>5.4</b>               | <b>1.6</b>                                   | <b>7.0</b>                        | <b>6.9</b>  |
| 2005                           | 67.9                | 1668186   | 843                             | 3662                    | 404                      | 2690   | 2834                              | 1912  |
| 2006                           | 70                  | 1769426   | 950                             | 4053                    | 433                      | 2830   | 3071                              | 1976  |
| 2007                           | 70.8                | 1906447   | 1062                            | 4383                    | 463                      | 2873   | 3324                              | 2128  |
| 2008                           | 71.7                | 1918681   | 1181                            | 4780                    | 504                      | 2843   | 3736                              | 2267  |
| 2009                           | 72.6                | 1942990   | 1078                            | 4456                    | 551                      | 2803   | 4034                              | 2483  |
| 2010                           | 73.6                | 2068912   | 1465                            | 5578                    | 615                      | 2894   | 4584                              | 2705  |
| <b>Average Annual Growth %</b> | <b>1.5</b>          | <b>4.7</b>  | <b>12.1</b>                     | <b>9.6</b>              | <b>8.7</b>               | <b>1.9</b>                                   | <b>10.4</b>                       | <b>7.2</b>  |
| 2011                           | 75.3                | 2157934   | 1319                            | 4855                    | 549                      | 2556   | 4029                              | 2322  |
| 2012                           | 76.5                | 2011554   | 1463                            | 5396                    | 610                      | 2614   | 4435                              | 2500  |
| 2013                           | 77.4                | 1972852   | 1494                            | 5573                    | 644                      | 2610   | 4613                              | 2532  |
| 2014                           | 78.3                | 2031596   | 1583                            | 5941                    | 686                      | 2765   | 4903                              | 2614  |
| 2015                           | 79.3                |   | 1632                            | 6181                    | 723                      | 2859   | 5125                              | 2678  |

## Some Important Indices

| Year                           | Grid Losses |                                 |              | Thermal Power Plants Average Efficiency (%) | Per Capita Installed Capacity (Wat) | Per Capita Generation (KWH) | Consumption Shares of Various Customers         |                |            | Electric Power Generation |             |
|--------------------------------|-------------|---------------------------------|--------------|---|-------------------------------------|-----------------------------|---|----------------|------------|---------------------------|-------------|
|                                | Total (%)   | Transmission & Sub-Transmission | Distribution |   |                                     |                             | Residential (%)                                 | Industrial (%) | Others (%) | Non-Thermal (%)           | Thermal (%) |
| 1967                           | 15.2        |                                 |              | 23.4  | 35                                  | 70                          | 32.4  | 34.5           | 33.1       | 35.7                      | 64.3        |
| 1968                           | 14.1        |                                 |              | 24.2  | 37                                  | 89                          | 32.6  | 33.5           | 33.9       | 35.2                      | 64.8        |
| 1969                           | 14.0        |                                 |              | 25.8  | 47                                  | 114                         | 26.4  | 35.4           | 38.2       | 41.8                      | 58.2        |
| 1970                           | 13.6        |                                 |              | 27.0  | 49                                  | 148                         | 23.3  | 41.1           | 35.6       | 39.2                      | 60.8        |
| 1971                           | 13.4        |                                 |              | 27.4  | 68                                  | 186                         | 21.8  | 45.0           | 33.2       | 48.8                      | 51.2        |
| 1972                           | 12.7        |                                 |              | 28.9  | 69                                  | 227                         | 21.3  | 48.0           | 30.7       | 51.4                      | 48.6        |
| 1973                           | 11.2        |                                 |              | 30.3  | 90                                  | 300                         | 18.3  | 51.9           | 29.8       | 30.5                      | 69.5        |
| 1974                           | 12.7        |                                 |              | 32.2  | 101                                 | 349                         | 17.7  | 54.6           | 27.7       | 30.6                      | 69.4        |
| 1975                           | 13.0        |                                 |              | 30.6  | 105                                 | 389                         | 19.5  | 50.6           | 29.9       | 27.0                      | 73.0        |
| 1976                           | 12.2        |                                 |              | 30.2  | 109                                 | 422                         | 22.3  | 47.5           | 30.2       | 28.0                      | 72.0        |
| 1977                           | 12.4        |                                 |              | 28.8  | 159                                 | 450                         | 24.8  | 45.1           | 30.1       | 26.7                      | 73.3        |
| 1978                           | 13.8        |                                 |              | 26.5  | 193                                 | 478                         | 26.8  | 41.1           | 32.1       | 36.0                      | 64.0        |
| <b>Average Annual Growth %</b> |             |                                 |              |   | <b>16.7</b>                         | <b>19.1</b>                 |   |                |            |                           |             |
| 1979                           | 12.6        |                                 |              | 27.5  | 209                                 | 514                         | 29.5  | 38.4           | 32.1       | 27.9                      | 72.1        |
| 1980                           | 13.7        |                                 |              | 28.2  | 245                                 | 506                         | 31.2  | 33.0           | 35.8       | 28.3                      | 71.7        |
| 1981                           | 14.7        |                                 |              | 29.1  | 251                                 | 549                         | 31.9  | 34.7           | 33.4       | 27.8                      | 72.2        |
| 1982                           | 13.4        |                                 |              | 30.1  | 243                                 | 621                         | 33.8  | 29.8           | 36.4       | 24.5                      | 75.5        |
| 1983                           | 13.3        |                                 |              | 30.2  | 248                                 | 692                         | 35.2  | 31.0           | 33.8       | 20.3                      | 79.7        |
| 1984                           | 13.9        |                                 |              | 30.5  | 249                                 | 744                         | 35.7  | 30.6           | 33.7       | 16.9                      | 83.1        |
| 1985                           | 13.7        |                                 |              | 30.0  | 260                                 | 772                         | 36.7  | 28.7           | 34.6       | 15.1                      | 84.9        |
| 1986                           | 12.0        |                                 |              | 30.6  | 263                                 | 790                         | 38.1  | 26.7           | 35.2       | 19.3                      | 80.7        |
| 1987                           | 13.3        |                                 |              | 30.3  | 263                                 | 840                         | 39.3  | 22.6           | 38.1       | 19.7                      | 80.3        |
| 1988                           | 12.6        |                                 |              | 30.5  | 264                                 | 843                         | 38.7  | 21.7           | 39.6       | 16.7                      | 83.3        |
| <b>Average Annual Growth %</b> |             |                                 |              |   | <b>3.2</b>                          | <b>5.8</b>                  | <b>Beginning of the First Development Plan</b>  |                |            |                           |             |
| 1989                           | 14.7        |                                 |              | 31.2  | 272                                 | 916                         | 39.5  | 21.2           | 39.3       | 15.4                      | 84.6        |
| 1990                           | 14.4        |                                 |              | 30.9  | 272                                 | 1007                        | 38.5  | 22.7           | 38.8       | 11.1                      | 88.9        |
| 1991                           | 12.7        |                                 |              | 31.2  | 266                                 | 1069                        | 38.9  | 21.6           | 39.5       | 11.8                      | 88.2        |
| 1992                           | 13.0        |                                 |              | 31.1  | 288                                 | 1129                        | 37.3  | 25.4           | 37.3       | 14.9                      | 85.1        |
| 1993                           | 14.5        |                                 |              | 31.8  | 317                                 | 1241                        | 37.0  | 25.0           | 38.0       | 13.8                      | 86.2        |
| 1994                           | 15.5        |                                 |              | 32.0  | 350                                 | 1322                        | 35.3  | 32.2           | 32.5       | 9.7                       | 90.3        |
| <b>Average Annual Growth %</b> |             |                                 |              |   | <b>4.8</b>                          | <b>7.8</b>                  | <b>Beginning of the Second Development Plan</b> |                |            |                           |             |
| 1995                           | 15.2        |                                 |              | 32.3  | 370                                 | 1353                        | 35.5  | 32.5           | 32.0       | 9.1                       | 90.9        |
| 1996                           | 13.1        |                                 |              | 32.8  | 373                                 | 1429                        | 34.4  | 32.9           | 32.7       | 8.6                       | 91.4        |
| 1997                           | 15.0        |                                 |              | 32.6  | 382                                 | 1515                        | 36.2  | 32.3           | 31.5       | 7.5                       | 92.5        |
| 1998                           | 15.5        |                                 |              | 33.6  | 395                                 | 1583                        | 36.7  | 30.8           | 32.5       | 7.2                       | 92.8        |
| 1999                           | 15.7        |                                 |              | 35.1  | 402                                 | 1709                        | 34.8  | 31.0           | 34.2       | 4.6                       | 95.4        |
| <b>Average Annual Growth %</b> |             |                                 |              |   | <b>2.8</b>                          | <b>5.3</b>                  | <b>Beginning of the Third Development Plan</b>  |                |            |                           |             |
| 2000                           | 16.6        |                                 |              | 36.7  | 427                                 | 1860                        | 34.6  | 32.0           | 33.4       | 3.2                       | 96.8        |
| 2001                           | 17.6        | 5.0                             | 14.4         | 35.6  | 449                                 | 1971                        | 33.9  | 31.6           | 34.5       | 4.1                       | 95.9        |
| 2002                           | 18.0        | 5.3                             | 15.0         | 35.7  | 481                                 | 2103                        | 33.3  | 31.9           | 34.8       | 5.8                       | 94.2        |
| 2003                           | 18.4        | 4.3                             | 16.1         | 37.2  | 518                                 | 2257                        | 33.1  | 32.2           | 34.7       | 7.4                       | 92.6        |
| 2004                           | 18.7        | 4.9                             | 16.4         | 36.5  | 553                                 | 2414                        | 32.6  | 32.4           | 35.0       | 6.5                       | 93.4        |
| <b>Average Annual Growth %</b> |             |                                 |              |   | <b>6.6</b>                          | <b>7.2</b>                  | <b>Beginning of the Fourth Development Plan</b> |                |            |                           |             |
| 2005                           | 19.5        | 4.2                             | 18.1         | 35.8  | 604                                 | 2621                        | 33.2  | 32.4           | 34.4       | 9.0                       | 90.9        |
| 2006                           | 19.7        | 4.3                             | 18           | 35.5  | 640                                 | 2732                        | 33.3  | 32.2           | 34.5       | 9.5                       | 90.5        |
| 2007                           | 19.9        | 4.9                             | 17.9         | 35.8  | 697                                 | 2877                        | 33.4  | 32.6           | 34.0       | 8/9                       | 91.1        |
| 2008                           | 18.6        | 4.2                             | 17.5         | 36.0  | 738                                 | 2987                        | 32.8  | 32.1           | 35.1       | 2.3                       | 97.7        |
| 2009                           | 17.0        | 4.1                             | 16.1         | 36.0  | 774                                 | 3048                        | 33.2  | 32.2           | 34.6       | 3.4                       | 96.6        |
| 2010                           | 15.5        | 3.6                             | 14.8         | 36.6  | 831                                 | 3165                        | 33.1  | 33.4           | 33.5       | 4.2                       | 95.8        |
| <b>Average Annual Growth %</b> |             |                                 |              |   | <b>7.0</b>                          | <b>4.6</b>                  | <b>Beginning of the Fifth Development Plan</b>  |                |            |                           |             |
| 2011                           | 14.98       | 3.43                            | 14.74        | 36.9  | 866                                 | 3190                        | 30.9  | 34.8           | 34.3       | 5.3                       | 94.7        |
| 2012                           | 15.16       | 3.53                            | 15.03        | 37.2  | 902                                 | 3325                        | 31.6  | 34.6           | 33.8       | 5.7                       | 94.3        |
| 2013                           | 14.78       | 3.35                            | 14.83        | 37.0  | 908                                 | 3388                        | 31.7  | 34.8           | 33.5       | 7.4                       | 92.6        |
| 2014                           | 13.13       | 3.02                            | 12.93        | 36.3  | 934                                 | 3505                        | 32.4  | 33.8           | 33.8       | 6.8                       | 93.2        |
| 2015                           | 12.30       | 2.89                            | 11.93        | 37.4  | 935                                 | 3542                        | 33.5  | 31.8           | 34.8       | 6.2                       | 93.8        |

**Statistical Report on 49 Years of Activities  
of Iran Electric Power Industry  
(1967-2015)**

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Since its establishment, Management of Information and Communication Technology and statistics has been in charge of collecting, processing and issuing the data related to the activities of Electricity Industry in the country. For this purpose, it has attempted to equip itself so to go along with new quantity and quality developments in this industry, and meet all information requirements. Periodicals issued annually by this group include:

- Detailed statistics about Iran Electric Power Industry (for strategic management)
- Statistics of rural electrification
- Detailed statistics of power generation in Iran
- Detailed statistics of power transmission in Iran
- Detailed statistics of power distribution in Iran
- Detailed statistics about Iran Electric Power Industry (for management)
- 10 Years trend of Iran Electric Power Industry (by REC.s, Distribution Cos and Provinces)
- Statistical report on Iran Electric Power Industry (both in persian and in english)
- Iran Electric Power Industry (both in persian and in english)
- Weekly buletin
- Electronic version of all above-mentioned on DVD
- Iran Electric Power Industry monthly bulletin & projects through Tavanir website as "Iran Electricity Statistics News"
- Iran Electric Power Industry statistics on Tavanir website

This issue involves general information about 49 years of activities in Iran Electric Power Industry including installed capacity, electricity generation, transmission and sub-transmission, distribution, human resource, electrified villages and average rate of electricity sale to various consuming sectors.



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