

NEWS & RELEASE

For further inquiry please contact:

Xymax Real Estate Institute

Phone: +81 3-5544-6640 FAX: +81 3-5544-6641

info-rei@xymax.co.jp

Electric Power Consumption by Office Tenants (June 2013)

Consumption in spring, reduced by 15% from the pre-quake level (the areas covered by TEPCO)

Xymax Real Estate Institute has been continuously studying the electric power consumption by tenants occupying office buildings in Japan. Our study results for January 2010–April 2013 were released in June 2013 (<http://www.xymax.co.jp/english/research/release/20130621.html>). This report is an update on the previous report, covering data up to June 2013. The monthly data (January 2010–June 2013) is available at the end of this report.

Definition of Electric Power Consumption by Office Tenants

The electric power per *tsubo* (3.3 sq m) consumed by tenants in office buildings in one month.

Key Findings the areas covered by Tokyo Electric Power Company (TEPCO)

The electric power consumption in spring (April-June) was reduced by over 15% from that in the pre-quake period.

| | |
|------|---------------------------------------|
| 2010 | 41.9 kWh/tsubo |
| 2011 | 34.3 kWh/tsubo (down 18.1% from 2010) |
| 2012 | 34.7 kWh/tsubo (down 17.2% from 2010) |
| 2013 | 34.8 kWh/tsubo (down 16.9% from 2010) |

Outline

Period January 2010 – June 2013 (monthly data)

Subject data Of the office-use tenants occupying the office buildings in Japan under management by Xymax Group, the valid data (roughly 300 buildings, 3,000 tenants) was used as the sample data for this study.

Calculation Method

- 1) Calculate the monthly electric power consumption in kilowatt-hour (kWh) by tenant.
- 2) Adjust the outcome in 1) based on the ordinary business days of the week (Monday-Friday).
- 3) Calculate the electric power consumption per *tsubo* (approx. 3.3 sq m) by dividing the outcome in 2) by the rentable area of the tenant space.
- 4) Average the outcome in 3) by the areas covered by each electric power company.

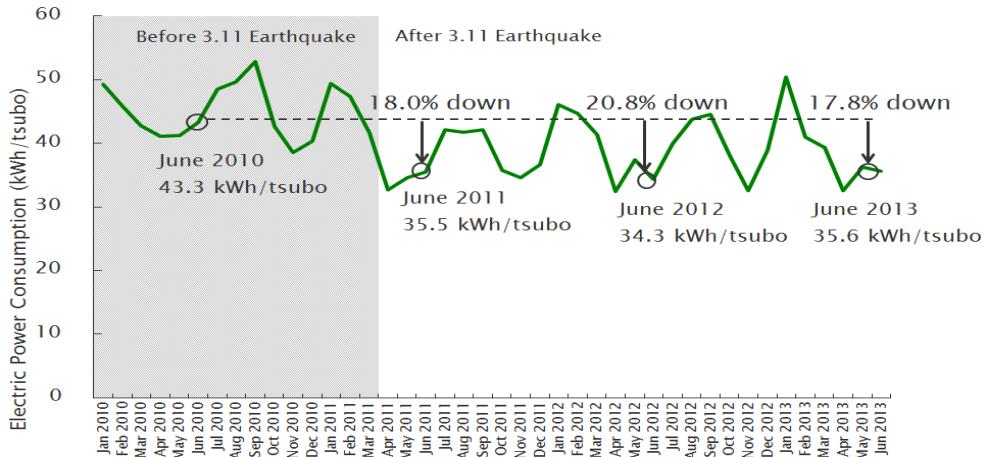
Notes

- Uses other than office use, such as retail, warehouse, and computer room are excluded from the subject data.
- Tenants in buildings with central air conditioning or gas heat pump where separate calculation of the energy use by tenant is impossible are excluded from the subject data.
- The month represents the month the electric power meter is read, usually on 20th of each month.
- Extraordinary amounts (too high, too low) are identified as outlier and excluded from the subject data.
- The number of subject tenants varies every month as tenants move in and out.

Electric Power Consumption by Office Tenants (January 2010 – June 2013)

Figure 1 shows the changes in electric power consumption from January 2010 to June 2013 by tenants in office buildings in the areas covered by TEPCO. The amount was 32.6 kWh/tsubo in April 2013, 36.3 kWh/tsubo in May, and 35.6 kWh/tsubo in June.

Figure 1: Electric Power Consumption by Office Tenants (January 2010 – June 2013)

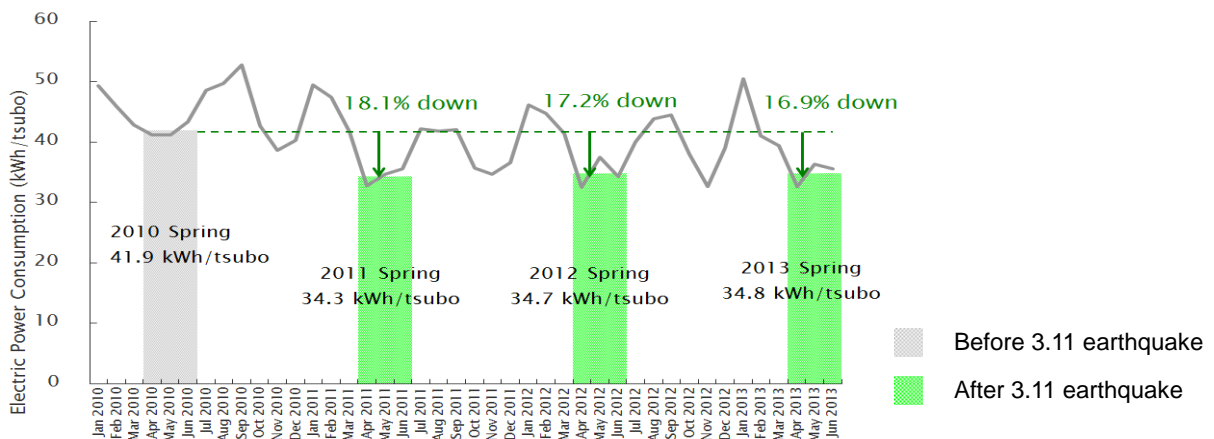


Electric power consumption in spring 2013 (April-June) is down by more than 15% since pre-quake level

The electric power consumed by office tenants in spring (the April-June average) after the earthquake shows decrease of over 15%: 41.9 kWh/tsubo in 2010, 34.3 kWh/tsubo in 2011 (down 18.1% from 2010), 34.7 kWh/tsubo in 2012 (down 17.2% from 2010), and 34.8 kWh/tsubo in 2013 (down 16.9% from 2010) (See Figure 2).

In general the electricity load of air conditioning is low in spring but even so the electric power consumption in spring was reduced by over 15% compared to that in pre-quake 2010, meaning that apparently the energy is saved not only in the air conditioning machines but also in other devices in office spaces such as lighting, computers, and copying machines.

Figure 2: Electric Power Consumption in Spring by Office Tenants (April-June Average)



Monthly Electric Power Consumption by Office Tenants and Temperature (January 2010 – June 2013)

| | Hokkaido Electric Power Company | | Sapporo | Tohoku Electric Power Company | | | Tokyo Electric Power Company | | | Hokuriku Electric Power Company | | | Chubu Electric Power Company | | | Nagoya |
|----------|---------------------------------|--------------------|---------|-------------------------------|--------------------|------|------------------------------|--------------------|------|---------------------------------|--------------------|------|------------------------------|--------------------|------|--------|
| | kWh / tsubo | 2010 Average = 100 | °C | kWh / tsubo | 2010 Average = 100 | °C | kWh / tsubo | 2010 Average = 100 | °C | kWh / tsubo | 2010 Average = 100 | °C | kWh / tsubo | 2010 Average = 100 | °C | |
| Jan 2010 | 49.0 | 116 | -2.0 | 29.8 | 117 | 2.8 | 49.3 | 110 | 7.0 | 25.9 | 105 | 4.4 | 42.4 | 119 | 4.6 | |
| Feb 2010 | 46.8 | 110 | -3.2 | 26.4 | 104 | 2.1 | 45.8 | 102 | 6.5 | 25.9 | 105 | 4.8 | 37.8 | 106 | 7.0 | |
| Mar 2010 | 43.1 | 102 | -0.1 | 28.0 | 110 | 4.4 | 42.8 | 96 | 9.1 | 24.3 | 99 | 6.8 | 31.6 | 89 | 9.1 | |
| Apr 2010 | 40.7 | 96 | 5.5 | 25.2 | 99 | 8.2 | 41.1 | 92 | 12.4 | 24.9 | 101 | 10.7 | 31.0 | 87 | 13.3 | |
| May 2010 | 40.6 | 96 | 12.2 | 25.6 | 101 | 14.7 | 41.2 | 92 | 19.0 | 24.8 | 101 | 16.5 | 31.9 | 89 | 18.7 | |
| Jun 2010 | 38.9 | 92 | 19.2 | 24.8 | 97 | 20.4 | 43.3 | 97 | 23.6 | 24.6 | 100 | 21.9 | 34.4 | 97 | 23.9 | |
| Jul 2010 | 43.1 | 102 | 22.1 | 24.7 | 97 | 25.3 | 48.5 | 109 | 28.0 | 23.9 | 97 | 26.5 | 39.3 | 110 | 27.8 | |
| Aug 2010 | 43.6 | 103 | 24.8 | 23.1 | 91 | 27.2 | 49.7 | 111 | 29.6 | 23.6 | 96 | 29.3 | 40.1 | 112 | 29.4 | |
| Sep 2010 | 43.5 | 103 | 20.0 | 25.2 | 99 | 21.7 | 52.8 | 118 | 25.1 | 24.5 | 99 | 24.5 | 43.0 | 120 | 26.1 | |
| Oct 2010 | 39.7 | 94 | 12.2 | 24.5 | 96 | 16.2 | 42.7 | 96 | 18.9 | 24.6 | 99 | 18.0 | 32.9 | 92 | 19.4 | |
| Nov 2010 | 37.8 | 89 | 5.9 | 24.0 | 94 | 10.1 | 38.6 | 86 | 13.5 | 24.2 | 98 | 11.3 | 30.3 | 85 | 12.1 | |
| Dec 2010 | 41.6 | 98 | 0.6 | 23.9 | 94 | 5.7 | 40.3 | 90 | 9.9 | 25.1 | 102 | 7.0 | 33.2 | 93 | 7.9 | |
| Jan 2011 | 49.7 | 117 | -3.8 | 26.6 | 105 | 0.5 | 49.4 | 111 | 5.1 | 28.7 | 116 | 1.5 | 44.6 | 125 | 2.8 | |
| Feb 2011 | 44.6 | 105 | -1.1 | 25.0 | 98 | 3.2 | 47.4 | 106 | 7.0 | 27.6 | 112 | 4.5 | 42.0 | 118 | 6.6 | |
| Mar 2011 | 42.0 | 99 | 0.7 | 24.2 | 95 | 3.8 | 41.6 | 93 | 8.1 | 24.6 | 100 | 5.4 | 35.5 | 100 | 7.5 | |
| Apr 2011 | 34.3 | 81 | 6.9 | 22.8 | 90 | 10.0 | 32.7 | 73 | 14.5 | 23.3 | 94 | 11.5 | 30.2 | 85 | 13.3 | |
| May 2011 | 37.2 | 88 | 11.1 | 22.8 | 90 | 15.6 | 34.6 | 77 | 18.5 | 24.0 | 97 | 17.4 | 30.9 | 87 | 19.0 | |
| Jun 2011 | 38.9 | 92 | 17.3 | 22.2 | 87 | 20.6 | 35.5 | 80 | 22.8 | 24.1 | 98 | 22.7 | 31.8 | 89 | 23.8 | |
| Jul 2011 | 39.3 | 93 | 21.8 | 22.2 | 87 | 24.8 | 42.2 | 95 | 27.3 | 23.6 | 95 | 27.2 | 42.0 | 118 | 27.5 | |
| Aug 2011 | 37.9 | 90 | 23.6 | 21.8 | 86 | 24.9 | 41.8 | 94 | 27.5 | 23.2 | 94 | 27.5 | 40.1 | 113 | 28.3 | |
| Sep 2011 | 39.1 | 92 | 19.2 | 22.3 | 88 | 22.1 | 42.1 | 94 | 25.1 | 23.4 | 95 | 23.8 | 40.1 | 112 | 25.1 | |
| Oct 2011 | 35.6 | 84 | 12.1 | 21.4 | 84 | 15.9 | 35.7 | 80 | 19.5 | 23.2 | 94 | 17.5 | 32.0 | 90 | 18.8 | |
| Nov 2011 | 36.4 | 86 | 6.0 | 21.8 | 86 | 10.5 | 34.6 | 78 | 14.9 | 23.7 | 96 | 13.3 | 30.5 | 85 | 13.9 | |
| Dec 2011 | 39.9 | 94 | -2.0 | 21.4 | 84 | 3.4 | 36.6 | 82 | 7.5 | 23.0 | 93 | 5.3 | 33.0 | 93 | 6.7 | |
| Jan 2012 | 47.9 | 113 | -4.5 | 25.2 | 99 | 0.4 | 46.1 | 103 | 4.8 | 28.1 | 114 | 2.9 | 42.7 | 120 | 4.2 | |
| Feb 2012 | 44.5 | 105 | -4.4 | 22.5 | 88 | 0.3 | 44.7 | 100 | 5.4 | 27.2 | 110 | 2.6 | 41.6 | 117 | 4.1 | |
| Mar 2012 | 40.3 | 95 | 0.1 | 23.5 | 92 | 4.5 | 41.4 | 93 | 8.8 | 25.9 | 105 | 7.0 | 35.3 | 99 | 8.3 | |
| Apr 2012 | 37.3 | 88 | 7.0 | 21.0 | 82 | 9.8 | 32.5 | 73 | 14.5 | 22.2 | 90 | 12.7 | 29.1 | 82 | 14.2 | |
| May 2012 | 37.8 | 89 | 13.0 | 23.6 | 93 | 15.9 | 37.4 | 84 | 19.6 | 26.4 | 107 | 17.1 | 32.6 | 91 | 19.2 | |
| Jun 2012 | 35.2 | 83 | 17.1 | 21.5 | 85 | 18.2 | 34.3 | 77 | 21.4 | 24.3 | 99 | 21.3 | 30.3 | 85 | 22.3 | |
| Jul 2012 | 39.6 | 93 | 21.8 | 24.1 | 95 | 22.8 | 40.0 | 90 | 26.4 | 24.4 | 99 | 26.8 | 37.7 | 106 | 26.9 | |
| Aug 2012 | 38.1 | 90 | 23.4 | 24.3 | 96 | 26.2 | 43.8 | 98 | 29.1 | 27.1 | 110 | 28.9 | 41.8 | 117 | 28.4 | |
| Sep 2012 | 39.0 | 92 | 22.4 | 26.1 | 102 | 23.9 | 44.5 | 100 | 26.2 | 27.2 | 110 | 25.2 | 40.1 | 112 | 25.8 | |
| Oct 2012 | 35.9 | 85 | 13.0 | 20.8 | 82 | 16.6 | 38.0 | 85 | 19.4 | 25.9 | 105 | 18.1 | 33.9 | 95 | 19.0 | |
| Nov 2012 | 33.8 | 80 | 5.5 | 22.0 | 86 | 9.7 | 32.6 | 73 | 12.7 | 23.0 | 93 | 10.5 | 27.2 | 76 | 11.3 | |
| Dec 2012 | 40.0 | 94 | -2.3 | 26.0 | 102 | 3.3 | 39.0 | 87 | 7.3 | 24.8 | 101 | 4.7 | 34.9 | 98 | 5.3 | |
| Jan 2013 | 53.7 | 127 | -4.7 | 32.1 | 126 | 0.7 | 50.4 | 113 | 5.5 | 29.0 | 118 | 3.0 | 47.3 | 133 | 4.0 | |
| Feb 2013 | 43.1 | 102 | -4.0 | 29.8 | 117 | 1.1 | 41.0 | 92 | 6.2 | 26.2 | 106 | 3.1 | 38.3 | 107 | 4.6 | |
| Mar 2013 | 40.8 | 96 | 0.0 | 28.5 | 112 | 5.8 | 39.3 | 88 | 12.1 | 23.4 | 95 | 8.3 | 34.9 | 98 | 10.5 | |
| Apr 2013 | 35.1 | 83 | 6.3 | 22.0 | 87 | 10.2 | 32.6 | 73 | 15.2 | 22.5 | 91 | 11.4 | 27.1 | 76 | 13.8 | |
| May 2013 | 35.9 | 85 | 11.3 | 22.5 | 88 | 14.4 | 36.3 | 81 | 19.8 | 23.3 | 94 | 17.2 | 30.5 | 86 | 19.4 | |
| Jun 2013 | 34.8 | 82 | 17.6 | 21.1 | 83 | 19.0 | 35.6 | 80 | 22.9 | 23.8 | 96 | 22.9 | 32.6 | 92 | 23.6 | |

| | Kansai Electric Power Company | | Osaka | Chugoku Electric Power Company | | Hiroshima | Shikoku Electric Power Company | | Takamatsu | Kyushu Electric Power Company | | Fukuoka |
|----------|-------------------------------|--------------------|-------|--------------------------------|--------------------|-----------|--------------------------------|--------------------|-----------|-------------------------------|--------------------|---------|
| | kWh / tsubo | 2010 Average = 100 | °C | kWh / tsubo | 2010 Average = 100 | °C | kWh / tsubo | 2010 Average = 100 | °C | kWh / tsubo | 2010 Average = 100 | °C |
| Jan 2010 | 43.3 | 114 | 6.1 | 44.4 | 127 | 5.2 | 49.6 | 125 | 5.9 | 43.4 | 118 | 6.6 |
| Feb 2010 | 37.7 | 99 | 7.8 | 40.7 | 117 | 7.6 | 44.5 | 112 | 7.4 | 36.9 | 100 | 9.4 |
| Mar 2010 | 35.6 | 94 | 9.6 | 34.1 | 97 | 9.1 | 40.0 | 101 | 9.3 | 32.7 | 89 | 10.9 |
| Apr 2010 | 34.0 | 89 | 13.6 | 29.7 | 85 | 13.0 | 36.1 | 91 | 13.2 | 31.4 | 85 | 13.8 |
| May 2010 | 35.2 | 93 | 18.8 | 27.7 | 79 | 18.5 | 32.8 | 83 | 18.8 | 32.9 | 90 | 19.2 |
| Jun 2010 | 36.3 | 96 | 23.9 | 28.0 | 80 | 23.3 | 33.8 | 85 | 23.9 | 35.3 | 96 | 23.5 |
| Jul 2010 | 41.5 | 109 | 27.9 | 33.6 | 96 | 27.2 | 44.5 | 112 | 27.8 | 39.1 | 106 | 27.7 |
| Aug 2010 | 42.7 | 112 | 30.5 | 39.6 | 113 | 30.3 | 46.5 | 117 | 30.4 | 42.9 | 117 | 30.3 |
| Sep 2010 | 44.8 | 118 | 26.7 | 47.5 | 136 | 26.2 | 53.0 | 134 | 26.7 | 46.3 | 126 | 26.3 |
| Oct 2010 | 38.1 | 100 | 19.9 | 34.0 | 97 | 19.2 | 34.9 | 88 | 19.8 | 35.6 | 97 | 20.0 |
| Nov 2010 | 32.4 | 85 | 13.2 | 27.3 | 78 | 12.0 | 26.5 | 67 | 12.7 | 30.6 | 83 | 13.2 |
| Dec 2010 | 34.3 | 90 | 9.0 | 33.1 | 95 | 7.3 | 33.1 | 84 | 8.3 | 34.2 | 93 | 8.8 |
| Jan 2011 | 42.1 | 111 | 4.4 | 44.3 | 127 | 2.9 | 43.2 | 109 | 4.1 | 43.1 | 117 | 3.8 |
| Feb 2011 | 39.0 | 103 | 7.4 | 44.7 | 128 | 6.6 | 41.7 | 105 | 6.6 | 42.3 | 115 | 8.2 |
| Mar 2011 | 35.3 | 93 | 8.1 | 36.4 | 104 | 7.2 | 36.1 | 91 | 7.9 | 33.7 | 92 | 8.8 |
| Apr 2011 | 32.3 | 85 | 13.8 | 30.5 | 87 | 13.4 | 30.6 | 77 | 13.6 | 29.9 | 81 | 14.7 |
| May 2011 | 33.5 | 88 | 19.6 | 28.9 | 82 | 19.5 | 25.4 | 64 | 19.6 | 31.6 | 86 | 19.8 |
| Jun 2011 | 34.3 | 90 | 24.2 | 29.9 | 86 | 23.6 | 26.9 | 68 | 24.0 | 32.5 | 88 | 23.9 |
| Jul 2011 | 40.8 | 107 | 27.8 | 39.3 | 112 | 27.6 | 35.1 | 89 | 27.3 | 40.0 | 109 | 27.9 |
| Aug 2011 | 39.8 | 105 | 28.9 | 40.6 | 116 | 28.2 | 34.9 | 88 | 28.6 | 40.1 | 109 | 28.5 |
| Sep 2011 | 40.3 | 106 | 25.2 | 40.4 | 115 | 24.9 | 37.3 | 94 | 25.1 | 40.7 | 111 | 25.2 |
| Oct 2011 | 33.7 | 89 | 19.5 | 29.6 | 85 | 18.5 | 27.8 | 70 | 19.2 | 32.1 | 87 | 19.7 |
| Nov 2011 | 30.9 | 81 | 15.2 | 26.4 | 76 | 14.7 | 23.9 | 60 | 15.0 | 30.5 | 83 | 16.3 |
| Dec 2011 | 32.0 | 84 | 8.1 | 30.3 | 87 | 6.9 | 28.5 | 72 | 7.9 | 29.4 | 80 | 8.5 |
| Jan 2012 | 39.9 | 105 | 5.6 | 42.0 | 120 | 4.7 | 36.6 | 93 | 5.2 | 38.9 | 106 | 6.3 |
| Feb 2012 | 37.9 | 100 | 5.1 | 42.8 | 122 | 4.3 | 36.2 | 91 | 4.7 | 38.4 | 104 | 5.7 |
| Mar 2012 | 36.8 | 97 | 9.1 | 36.5 | 104 | 8.7 | 31.0 | 78 | 8.9 | 33.0 | 90 | 10.7 |
| Apr 2012 | 29.2 | 77 | 15.2 | 27.9 | 80 | 15.0 | 26.1 | 66 | 15.0 | 26.4 | 72 | 16.2 |
| May 2012 | 33.5 | 88 | 19.6 | 30.2 | 86 | 19.6 | 24.6 | 62 | 19.4 | 32.2 | 88 | 20.1 |
| Jun 2012 | 31.5 | 83 | 23.0 | 29.9 | 86 | 23.2 | 24.3 | 61 | 22.8 | 30.3 | 82 | 23.1 |
| Jul 2012 | 36.5 | 96 | 27.8 | 36.2 | 104 | 27.4 | 27.8 | 70 | 27.7 | 34.7 | 94 | 28.0 |
| Aug 2012 | 42.0 | 111 | 29.4 | 43.9 | 126 | 29.5 | 34.3 | 87 | 29.3 | 39.4 | 107 | 29.1 |
| Sep 2012 | 40.5 | 107 | 26.0 | 41.8 | 120 | 25.6 | 31.9 | 81 | 25.2 | 36.7 | 100 | 24.5 |
| Oct 2012 | 33.8 | 89 | 19.3 | 30.1 | 86 | 18.9 | 26.8 | 68 | 18.9 | 31.9 | 87 | 19.2 |
| Nov 2012 | 29.3 | 77 | 12.4 | 24.9 | 71 | 11.7 | 21.5 | 54 | 12.3 | 26.3 | 72 | 12.9 |
| Dec 2012 | 33.6 | 88 | 6.6 | 35.5 | 102 | 5.5 | 26.2 | 66 | 6.3 | 31.2 | 85 | 7.6 |
| Jan 2013 | 43.1 | 114 | 5.2 | 46.9 | 134 | 4.4 | 34.1 | 86 | 4.7 | 41.0 | 111 | 6.1 |
| Feb 2013 | 36.5 | 96 | 5.6 | 39.9 | 114 | 6.0 | 31.1 | 78 | 5.8 | 32.4 | 88 | 7.8 |
| Mar 2013 | 34.7 | 91 | 10.7 | 34.3 | 98 | 10.7 | 27.7 | 70 | 10.4 | 29.9 | 81 | 12.3 |
| Apr 2013 | 28.4 | 75 | 14.3 | 25.6 | 73 | 13.5 | 22.3 | 56 | 13.6 | 26.2 | 71 | 14.7 |
| May 2013 | 32.2 | 85 | 19.8 | 27.4 | 78 | 19.7 | 23.0 | 58 | 19.9 | 29.2 | 79 | 20.3 |
| Jun 2013 | 34.8 | 92 | 24.3 | 32.7 | 94 | 24.0 | 25.3 | 64 | 24.2 | 32.0 | 87 | 23.7 |

Average temperature: Website of the Meteorological Agency (<http://www.data.jma.go.jp/obd/stats/etrn/index.php>)

Reference: Distribution and Average of Electric Power Consumption by Office Tenants

The upper graph is for January-March 2013, and the lower graph is for April-June 2013. The horizontal axis represents the electricity (kWh/tsubo), and the vertical axis represents the ratio of tenants.

As shown, the distribution differs by seasons of the year. In our study, the average is applied.

