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NEWS & RELEASE

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Electric Power Consumption by Office Tenants (September 2013)

Energy saving in summer has been well established in Japan's offices, recorded the consumption level over 10% lower than before the earthquake for three years in a row.

Xymax Real Estate Institute has been studying the electric power consumption by tenants occupying office buildings in Japan and releasing the results on regular basis since June 2013. This is an update report on the electric power consumption up to September 2013 and comparison with the period before the Great East Japan Earthquake.

- Previous report: Electric Power Consumption by Office Tenants (released on September 25, 2013)
  http://www.xymax.co.jp/english/research/release/130925.html
- Monthly data (January 2010 – September 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)

Electricity consumed by office tenants was 43.8 kWh/tsubo in summer 2013 (July-September), recorded the consumption level over 10% lower than before the earthquake for three years in a row.

Summer 2010	50.3 kWh/tsubo
Summer 2011	42.0 kWh/tsubo (down 16.5% from 2010)
Summer 2012	42.8 kWh/tsubo (down 14.9% from 2010)
Summer 2013	43.8 kWh/tsubo (down 12.9% from 2010)

Outline

Period: January 2010 – September 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.

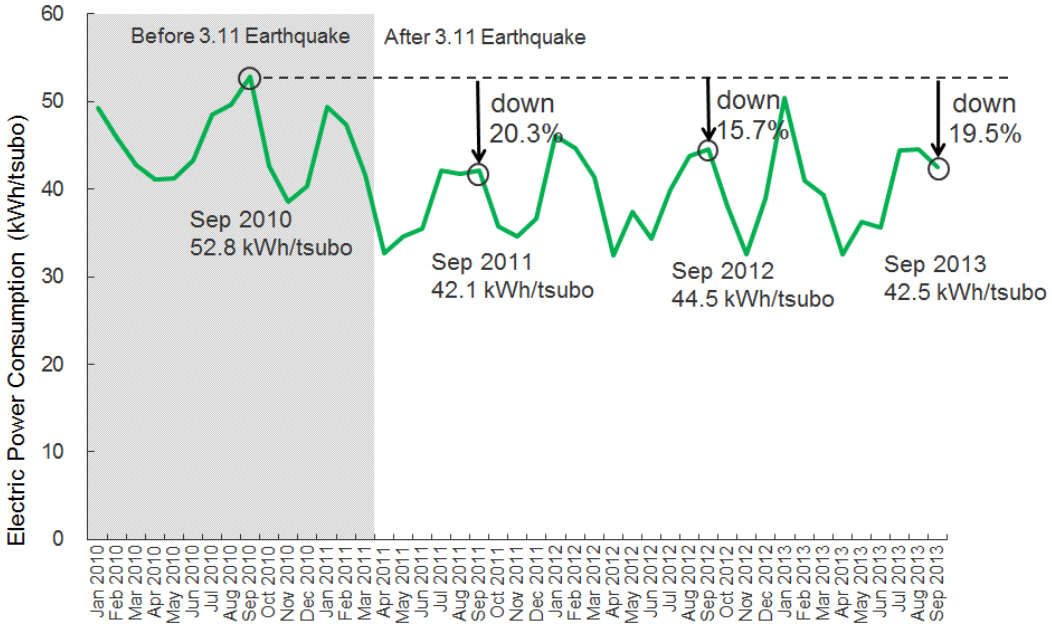
Notes

- 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

Figure 1 shows the changes in electric power consumption from January 2010 to September 2013 by tenants in office buildings in the areas covered by TEPCO. The amount was 44.4 kWh/tsubo in July 2013, 44.5 kWh/tsubo in August, and 42.5 kWh/tsubo in September.

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



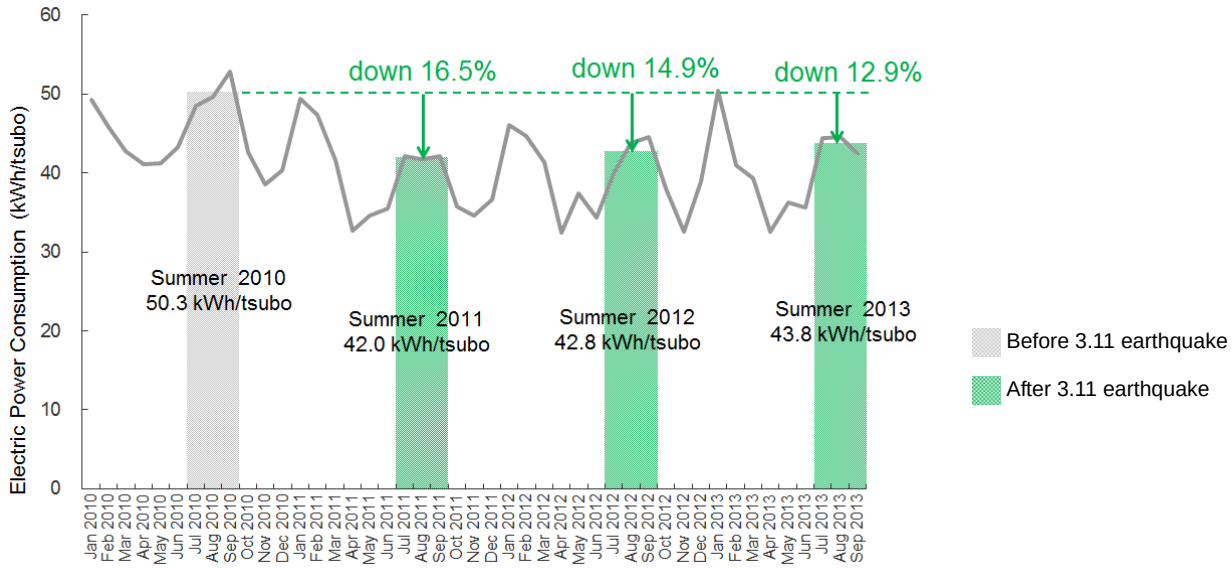
Continued the energy saving level, by over 10% down from the period before the earthquake for three years in a row

The electric power consumed by office tenants in summer (the July–September average) shows decrease of over 10% from the period before the earthquake for three years in a row; 50.3 kWh/tsubo in 2010 (before the earthquake), 42.0 kWh/tsubo in 2011 (down 16.5% from 2010), 42.8 kWh/tsubo in 2012 (down 14.9% from 2010), 43.8 kWh/tsubo in 2013 (down 12.9% from 2010) (see Figure 2).

The data indicates that the energy saving at offices in summer has been well established. On the other hand, however, the rate of decrease in electricity consumption in 2013 was smaller than that in 2011 and 2012.

This is probably because the maximum temperature in Tokyo was higher this year than the previous year (35.7 degrees C in 2012 and 38.3 degrees C in 2013; Japan Meteorological Agency) and also because the overtime work hours extended this year reflecting the recent economic recovery (98.7 hours in 2012 and 102.6 in 2013; Ministry of Health, Labour and Welfare).

Figure 2: Electric Power Consumption in Summer by Office Tenants (July-September Average)



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

	Hokkaido Electric Power Company		Sapporo	Tohoku Electric Power Company		Sendai	Tokyo Electric Power Company		Tokyo	Hokuriku Electric Power Company		Kanazawa	Chubu Electric Power Company		Nagoya
	kWh / tsubo	2010 Average = 100	℃	kWh / tsubo	2010 Average = 100	℃	kWh / tsubo	2010 Average = 100	℃	kWh / tsubo	2010 Average = 100	℃	kWh / tsubo	2010 Average = 100	℃
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	117	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	86	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	91	23.6
Jul 2013	35.4	84	22.5	23.7	93	22.2	44.4	99	27.3	29.9	121	27.2	41.5	116	28.1
Aug 2013	33.2	78	23.1	23.8	94	25.6	44.5	100	29.2	27.8	113	28.2	39.9	112	29.3
Sep 2013	31.9	75	18.8	24.3	96	21.9	42.5	95	25.2	25.9	105	23.0	37.9	106	24.9

	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	℃	kWh / tsubo	2010 Average = 100	℃	kWh / tsubo	2010 Average = 100	℃	kWh / tsubo	2010 Average = 100	℃
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	113	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	79	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	93	24.0	25.3	64	24.2	32.0	87	23.7
Jul 2013	39.4	104	28.5	39.7	114	28.3	28.9	73	29.0	38.8	105	30.0
Aug 2013	41.2	108	30.0	43.1	123	29.5	31.7	80	29.8	39.5	107	30.0
Sep 2013	38.3	101	25.1	36.4	104	24.6	29.2	74	24.5	36.9	100	25.2

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