Outlook for Electricity Supply–Demand and Cross-regional Interconnection Lines:

Actual Data for Fiscal Year 2020

October 2021



FOREWORD

The Organization for Cross-regional Coordination of Transmission Operators, Japan (hereinafter, the Organization), prepares and publishes its Annual Report according to the provisions of Article 181 of the Operational Rules regarding the matters specified below.

- i. Actual electric supply and demand (including evaluation and analysis of quality of electricity in light of frequency, voltage, and blackouts of each regional service area)
- ii. State of electric network
- iii. Actual Network Access Business until the previous year.
- iv. Forecast on electric demand and electric network (including forecast of improvement of restriction on network interconnection of generation facilities) for the next fiscal year and a mid- and long-term period based on a result of compiling of electricity supply plans and their issues.
- v. Evaluation and verification of proper standards of reserve margin and balancing capacities of each regional service area based on the next article, as well as contents of review as needed

The Organization published the actual data for electricity supply-demand and network system utilization ahead of the Annual Report because of the completion of actual data collection up to fiscal year 2020 (FY 2020).

SUMMARY

This report is presented to review the outlook for electricity supply-demand and crossregional interconnection lines in FY 2020, based on the provisions of Article 181 of the Operational Rules of the Organization.

The report comprises two parts: the electricity supply and demand situation, and the interconnection line situation.

Regarding supply and demand, the peak demand nationwide (16,465 \times 10⁴ kW), was recorded in Augustust, and the monthly peak electric energy requirement nationwide, (86,470 GWh) was recorded in January.

The reserve margin against summer and winter peak demands was 11.8% and 9.0%, respectively.

Power exchange instructions were issued by the Organization 226 times, with 218 of them being dispatched for improvements in supply-demand tightness caused by the prolonged cold weather in winter 2020/2021.

In addition, long-cycle frequency control was implemented 58 times during the year.

There were 77 days for which instructions to shed power generation of renewables were issued during FY 2020, which occurred on isolated islands in addition to the Kyushu mainland.

The total volume of utilization of the interconnection lines was 100,007 GWh, which was a significant increase from the 87,471 GWh in FY 2019.

There were 385 interconnection line maintenance events, requiring 534 days-worth of work in FY 2020.

We hope that the information of this report proves useful.

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Note:

Data for Chapter I include figures at the sending end, i.e., the electricity supplied to the public network system from power plants with energy deducted for station services.

Errata

20220831	P6 Table 1-4 Actual Annual Peak Demand	FY 2019/ 16.416→16,461

CHAPTER I: ACTUAL ELECTRICITY SUPPLY AND DEMAND

1. Regional Service Areas for 10 General Transmission and Distribution Companies, and the Definition of a Season

(1) Regional Service Areas for 10 General Transmission and Distribution Companies

A regional service area describes the specific area to which a general transmission and distribution (GT&D) company supplies electricity through cross-regional interconnection lines. Japan is divided into 10 regional service areas as shown in Figure 1-1. Regional service areas served by GT&D companies other than the Okinawa Electric Power Company (EPCO), are connected by cross-regional interconnection lines.



Figure 1-1: The 10 Regional Service Areas in Japan and their Prefectural Distribution

(2) Definition of Seasons

This report identifies two seasonal periods, namely the summer period (July–September) and the winter period (December–February).

This report also refers to the actual weather outlook for the previous year from the Seasonal Climate Report over Japan prepared by the Japan Meteorological Agency (JMA). The JMA defines the summer and winter periods as June–August and December–February, respectively. Note that this definition of the summer period differs slightly from the one used in this report.

2. Outlook for Actual Weather Nationwide

(1) Weather During the Summer Period (June to August 2020)

Table 1-1 shows anomalies in the temperature and precipitation ratios from June to August in FY 2020.(a) Heavy rainfall, which was later named the "Heavy Rain Event of July 2020," brought significant precipitation, mainly to the eastern and western regions caused by a prolonged and active Baiu front in July. The Okinawa/Amami region also had significant rainfall, caused by a stagnant Baiu front and a moist southerly air inflow.

(b) The mean temperature during the summer period was high nationwide, with warm air covering much of Japan. In particullar, the eastern and Okinawa/Amami regions were significantly affected. The eastern region experienced a severe heatwave caused by a covering of warm air from the Pacific high-pressure system in Augustust, while the Okinawa/Amami region was covered by warm air during the whole period.

(c) There were relatively few hours of sunshine during the summer period in the Okinawa/Amami region because of the wet air blowing in from the Baiu front and from typhoons.

Weather Region	Mean Temperature Anomaly[°C]	Precipitation Ratio[%]	Sunshine Duration Ratio[%]
Northern	+1.2	110	99
Eastern	+1.1	137	98
Western	+0.6	146	98
Okinawa/Amami	+0.8	162	97

Table 1-1: Anomalies in Temperature, Precipitation, and Sunshine Duration by Weather Region from June to August 2020

Source: Japan Meteorological Agency (JMA), Tokyo Climate Center. Seasonal Climate Report over Japan for Summer (FY 2020). <u>http://ds.data.jma.go.jp/tcc/tcc/products/japan/climate/index.php?kikan=3mon&month=8&year=2020</u> <u>http://www.data.jma.go.jp/gmd/cpd/cgi-bin/view/kikohyo/en.php?kikan=3mon&month=8&year=2020</u>

(2) Weather During the Winter Period (December 2020 to February 2021)

Table 1-2 shows the anomalies in temperature and the ratios of rainfall and snowfall from December to February in FY 2020.

(a) Seasonal mean temperatures were very high in the eastern region, and rather high in the western and Okinawa/Amami regions. There were several days with wintry air in the first half of the period, and then some warm days caused by warm air flowing toward a low-pressure system moving through the northern region. The variation between the temperature in the first period and those in later period was large.

(b) Snowfall during the witner period was heavy because of the significantly cold air early on. In particular, the snowfall on the Japan Sea coast in the western region was significantly heavy. Later on, the precipitation on the Japan Sea coast in the eastern region was very high and that of the Japan Sea coast in the northern region was high because of the frequent occurrence of low-pressure systems around the northern part of Japan.

(c) There were significantly many hours of sunshine on the Pacific Sea and Japan Sea coasts in the western region caused by the weaker southward movement of cold air in a shorter winter pressre pattern during the latter half of the period. Sunshine duration ratio for the western region were at a record high for the Japan Sea and Pacific Sea coasts, (126% and 118%, respectively). They were the highest recorded since statistics started to be collected.

 Table 1-2: Anomalies in Temperature, Precipitation, Sunshine Duration and Snowfall by Weather Region

 from December 2020 to February 2021

Weather Region	Mean Temperature Anomaly[°C]	Precipitation Ratio[%]	Sunshine Duration Ratio[%]	Snowfall Ratio[%]
Northern	-0.1	102	96	82
Eastern	+1.0	87	108	42
Western	+0.8	88	121	107
Okinawa/Amami	+0.4	133	106	-

Source:Japan Meteorological Agency, Tokyo Climate Center. Seasonal Climate Report over Japan for Winter (FY 2020). <u>http://ds.data.jma.go.jp/tcc/tcc/products/japan/climate/index.php?kikan=3mon&month=2&year=2021</u> <u>http://www.data.jma.go.jp/gmd/cpd/cgi-bin/view/kikohyo/en.php?kikan=3mon&month=2&year=2021</u>

3. Actual Nationwide Peak Demand

Peak demand referes to the highest consumption of electricity during a given period, such as day, month, or year. Table 1-3 shows the monthly peak demand for regional service areas in FY 2020. Figures 1-2 and 1-3 show the nationwide monthly and annual peak demand by regional service areas, respectively. In this report, "peak demand" refers to the maximum hourly value of the electric energy requirement.

The values in red are the maximum monthly peak demand (i.e., the annual peak demand) and the values in blue are the minimum monthly peak demand for each regional service area.¹ The names of the regional service areas are indicated in the names of the GT&D companies.

The maximum monthly peak demand nationwide for FY 2020 was registered as 16,645 x10⁴ kW in August, which was the highest for five years (Table 1-4 gives the sending-end data since FY 2016).

												10 KWJ
	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Hokkaido	404	356	362	390	431	420	384	445	490	541	510	504
Tohoku	1,054	944	1,104	1,089	1,412	1,384	988	1,115	1,409	1,480	1,430	1,198
Tokyo	4,055	3,335	4,345	4,497	5,604	5,570	3,661	3,943	4,722	5,094	4,862	4,337
Chubu	1,775	1,666	1,958	2,272	2,624	2,439	1,821	1,831	2,330	2,409	2,349	2,054
Hokuriku	397	338	401	442	513	513	350	394	499	534	523	426
Kansai	1,899	1,731	2,238	2,553	2,910	2,771	1,837	1,886	2,353	2,595	2,399	2,103
Chugoku	842	691	815	965	1,102	1,094	734	814	996	1,124	1,041	851
Shikoku	383	327	402	488	533	524	341	363	452	507	473	384
Kyushu	1,098	1,002	1,283	1,498	1,637	1,534	1,078	1,204	1,443	1,606	1,526	1,143
Okinawa	90	117	151	156	158	151	131	125	97	119	103	98
Nationwide	11,833	10,281	12,431	14,009	16,645	15,141	11,075	11,953	14,489	15,607	14,605	12,626

Table 1-3: M	onthly Peak I	Demand for	Regional	Service Areas ²
10010 1 01111			Broner	

 $[10^4 k]$

¹ A maximum and minimum value may appear to be the same, which is caused by rounding at the first decimal place. This applies throughout.

 $^{^2}$ "Nationwide peak demand" means the maximum of the aggregated demand in a given period for regional service areas of the 10 GT&D companies, not the addition of each regional peak demand.



Figure 1-2: Nationwide Monthly Peak Demand



Figure 1-3: Annual Peak Demand for Regional Service Areas

Table 1-4: Actual Annual Peak Demand	(from FY 2016 to FY 2020)
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					[10 ⁴ kW]
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Nationwide	15,589	15,577	16,482	16,461	16,645

4. Actual Nationwide Electric Energy Requirements

Table 1-5 shows the monthly electric energy requirements for regional service areas in FY 2020. Figures 1-4 and 1-5 show the nationwide monthly and annual electric energy requirements for regional service areas, respectively.

The values in red are the maximum monthly energy requirement and the values in blue are the minimum monthly energy requirement for each regional service area.

Actual annual nationwide electric energy requirements for FY 2020 was 867,842 GWh, which was the lowest for five years (Table 1-6 gives the sending-end data since FY 2016).

													[GWh]
	Apr.	Мау	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual
Hokkaido	2,338	2,116	2,096	2,250	2,338	2,203	2,303	2,548	3,122	3,353	2,894	2,819	30,380
Tohoku	6,307	5,631	5,797	6,146	6,926	6,248	6,121	6,459	8,047	8,695	7,542	7,210	81,129
Tokyo	20,539	18,997	21,406	23,370	28,253	23,655	21,223	21,334	26,268	27,772	23,511	23,153	279,481
Chubu	9,729	8,677	9,874	11,011	12,460	11,166	10,244	10,215	11,970	12,606	11,179	11,172	130,303
Hokuriku	2,263	1,919	2,079	2,245	2,526	2,276	2,156	2,255	2,758	3,002	2,597	2,531	28,606
Kansai	10,432	9,622	10,932	12,092	14,350	11,847	10,611	10,637	12,821	13,590	11,651	11,702	140,287
Chugoku	4,475	4,010	4,455	4,908	5,542	4,918	4,497	4,626	5,647	5,969	5,020	5,029	59,096
Shikoku	2,030	1,903	2,104	2,311	2,697	2,173	2,002	2,024	2,476	2,650	2,234	2,226	26,828
Kyushu	6,192	5,879	6,692	7,328	8,554	6,764	6,296	6,343	7,921	8,231	6,786	6,727	83,714
Okinawa	524	624	787	885	883	764	683	604	597	601	501	565	8,020
Nationwide	64,827	59,379	66,223	72,545	84,529	72,013	66,137	67,045	81,627	86,470	73,915	73,134	867,842

Table 1-5: Monthly and Annual Electric Energy Requirements for Regional Service Areas³

³ Here and elsewhere, the annual total may not equal the sum of 12 months due to independent rounding.



Figure 1-4: Nationwide Monthly Electric Energy Requirements



Figure 1-5: Annual Electric Energy Requirements for Regional Service Areas

Table 1-6: Actual Annual Electric Energy Requirement (from FY 2016 to FY 2020)

					[GWh]
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Nationwide	890,451	900,902	896,473	878,383	867,842

5. Nationwide Load Factor

The load factor describes the ratio of average demand to peak demand within a given period. Table 1-7 shows the monthly load factor for regional service areas in FY 2020, with Figures 1-6 and 1-7 showing the nationwide monthly and annual load factors for regional service areas, respectively. The values in red and blue are the highest and the the lowest load factors, respectively, for each regional service area.

The nationwide annual load factor for FY 2020 was 59.5%, which was the minimum figure for five years (Table 1-8 gives the sending-end data since FY 2016).

													[%]
	Apr.	Мау	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual
Hokkaido	80.4	79.8	80.5	77.6	72.9	72.9	80.6	79.5	85.6	83.3	84.5	75.2	64.1
Tohoku	83.1	80.2	72.9	75.8	65.9	62.7	83.3	80.5	76.8	79.0	78.5	80.9	62.6
Tokyo	70.3	76.6	68.4	69.9	67.8	59.0	77.9	75.1	74.8	73.3	72.0	71.8	56.9
Chubu	76.1	70.0	70.1	65.1	63.8	63.6	75.6	77.5	69.0	70.3	70.8	73.1	56.7
Hokuriku	79.2	76.3	72.0	68.2	66.2	61.7	82.8	79.5	74.3	75.6	73.9	79.9	61.2
Kansai	76.3	74.7	67.9	63.7	66.3	59.4	77.7	78.3	73.2	70.4	72.3	74.8	55.0
Chugoku	73.8	78.0	75.9	68.3	67.6	62.5	82.4	78.9	76.2	71.4	71.8	79.5	60.0
Shikoku	73.5	78.3	72.8	63.7	68.1	57.6	78.9	77.3	73.6	70.3	70.2	78.0	57.5
Kyushu	78.3	78.9	72.5	65.8	70.2	61.3	78.5	73.2	73.8	68.9	66.2	79.1	58.4
Okinawa	80.6	71.4	72.3	76.0	75.1	70.3	70.0	67.1	82.5	68.0	72.8	77.4	58.0
Nationwide	76.1	77.6	74.0	69.6	68.3	66.1	80.3	77.9	75.7	74.5	75.3	77.9	59.5

Table 1-7: Monthly and Annual Load Factors for Regional Service Areas⁴

Monthly Energy Requirement

Monthly Energy Requirement
Monthly Peak Demand $\cdot {\rm Calendar}$ Hours (24H \cdot Monthly Days)
Annual Energy Requirement

Annual Peak Demand • Calendar Hours (24H • Annual Days)

⁴ "Nationwide load factor" refers to the load factor calculated for all of Japan. It is not simply the average of each regional load factor.



Figure 1-6: Nationwide Monthly Load Factor



Figure 1-7: Annual Load Factor for Regional Service Areas

Table 1-8: Actual Annual Load Factor (from FY 2016 to FY 2020))
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					[%]
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Nationwide	65.8	66.0	62.1	60.7	59.5

6. Nationwide Supply–Demand Status During Peak Demand

(1) Nationwide Supply-Demand Status During the Summer Peak Demand Period (July to September)

Table 1-9 shows the supply-demand status during the summer peak demand period for regional service areas in FY 2020.

The actual nationwide summer peak demand for FY 2020 was 16, 645×10^4 kW, which was registered at 15:00 on August 20, with a reserve margin at the time of 11.8%. This was the highest figure for the past five years, (Table 1-10 gives the sending-end data since FY 2016).

Area	Peak Demand [10 ⁴ kW]	Occurrence Date & Time		Daily Maximum Temperature [℃]	Supply Capacity [10⁴kW]	Reserve Capacity [10 ⁴ kW]	Reserve Margin [%]	Daily Energy Supply [10 ⁴ kWh]	Daily Load Facter [%]	
Hokkaido	431	8/28	Fr	16:00~17:00	33.1	477	46	10.7	8,543	82.6
Tohoku	1,412	8/28	Fr	14:00~15:00	33.8	1,527	115	8.2	26,660	78.7
Tokyo	5,604	8/21	Fr	14:00~15:00	36.0	6,198	594	10.6	103,413	76.9
Chubu	2,624	8/20	Thur.	14:00~15:00	37.6	2,845	220	8.4	48,099	76.4
Hokuriku	513	8/20	Thur.	13:00~14:00	36.8	549	36	7.1	9,550	77.6
Kansai	2,910	8/21	Fr	14:00~15:00	38.6	3,104	193	6.6	53,236	76.2
Chugoku	1,102	8/21	Fr	14:00~15:00	37.1	1,215	114	10.3	20,409	77.2
Shikoku	533	8/20	Thur.	14:00~15:00	35.8	613	80	15.0	9,832	76.9
Kyushu	1,637	8/21	Fr	13:00~14:00	34.3	1,855	218	13.3	30,670	78.0
Okinawa	158	8/18	Tue.	14:00~15:00	33.9	202	44	27.9	3,106	82.0
Nationwide	16,645	8/20	Thur.	14:00~15:00	-	18,608	1,964	11.8	310,303	77.7

Table 1-9: Supply-Demand Status during the Summer Peak Demand Period for Nationwide and Regional Service Areas⁵

Table 1-10: Actual Supply–Demand Status for Summer Peak Demand (from FY 2016 to FY 2020)

FY	Peak Demand [10⁴kW]		Occurr Date &	rence Time	Daily Maximum Temperature [℃]	Supply Capacity [10 ⁴ kW]	Reserve Capacity [10 ⁴ kW]	Reserve Margin [%]	Daily Energy Supply [10 ⁴ kWh]	Daily Load Facter [%]
2016	15,589	8/9	Tue.	14:00~15:00	-	17,764	2,176	14.0	297,969	79.6
2017	15,550	8/24	Thur.	14:00~15:00	-	17,716	2,165	13.9	300,493	80.5
2018	16,482	8/3	Fri.	14:00~15:00	-	18,749	2,267	13.8	315,434	79.7
2019	16,461	8/2	Fri.	14:00~15:00	-	18,584	2,122	12.9	314,988	79.7
2020	16,645	8/20	Thur.	14:00~15:00	-	18,608	1,964	11.8	310,303	77.7

⁵ The daily maximum temperatures are provided by the JMA based on the data for the cities where the headquarters of the GT&D companies (except for the Okinawa EPCO) are located. (For the regional service area of the Okinawa EPCO, the data from Naha, the prefectural capital of Okinawa, were used instead).

"Supply capacity" in the table above refers to the maximum power that can be generated during peak demand. This capacity is the addition of installed generating capacity including the deducted portion, such as generator suspension for maintenance work, derating with a decrease in river flow, and unplanned generator outages.

(2) Nationwide Supply–Demand Status During the Winter Peak Demand Period (December to February)

Table 1-11 shows the supply-demand status during the winter peak demand period for regional service areas in FY 2020.

The actual nationwide winter peak demand for FY 2020 was 15, 607 $\times 10^4$ kW, which occurred at 10:00 on January 8, with a reserve margin at the time of 9.0%. This was the highest figure for the past five years, (Table 1-12 gives the sending-end data since FY 2016).

The reserve margin in five areas was below 3%, (the minimum acceptable margin criteria. The margins were 2.2% (at 11:00 on January 8) for Hokuriku, 1.5% (at 11:00 on January 12) for Kansai, 1.3% (at 10:00 on January 8) for Chugoku, 2.3% (at 19:00 on January 8), and 2.4% (at 19:00 on January 7).

Area	Peak Demand [10 ⁴ kW]	Occurrence Date & Time		Daily Mean Temperature [℃]	Supply Capacity [10 ⁴ kW]	Reserve Capacity [10 ⁴ kW]	Reserve Margin [%]	Daily Energy Supply [10 ⁴ kWh]	Daily Load Facter [%]	
Hokkaido	541	1/19	Tue.	11:00~12:00	-7.2	615	74	13.6	11,865	91.3
Tohoku	1,480	1/8	Fri.	09:00~10:00	-2.8	1,534	54	3.7	32,248	90.8
Tokyo	5,094	1/12	Tue.	16:00~17:00	3.4	5,405	311	6.1	103,519	84.7
Chubu	2,409	1/8	Fri.	09:00~10:00	0.0	2,558	148	6.2	49,287	85.2
Hokuriku	534	1/8	Fri.	10:00~11:00	-1.5	546	12	2.2	11,604	90.6
Kansai	2,595	1/12	Tue.	10:00~11:00	3.2	2,635	40	1.5	51,234	82.3
Chugoku	1,124	1/8	Fri.	09:00~10:00	-1.6	1,138	14	1.3	23,932	88.7
Shikoku	507	1/8	Fri.	18:00~19:00	-0.5	519	12	2.3	10,717	88.1
Kyushu	1,606	1/7	Thur.	18:00~19:00	1.3	1,645	39	2.4	32,493	84.3
Okinawa	119	1/9	Sat.	18:00~19:00	11.6	156	37	31.3	2,394	83.9
Nationwide	15,607	1/8	Fri.	09:00~10:00	-	17,012	1,406	9.0	329,833	88.1

Table 1-11: Supply–Demand Status During the Winter Peak Demand Period for Regional Service Areas⁵

Table 1-12: Actual Supply–Demand Status for Winter Peak Demand (from FY 2016 to FY 2020)

FY	Peak Demand [10⁴kW]		Occurr Date &	rence Time	Daily Mean Temperature [℃]	Supply Capacity [10⁴kW]	Reserve Capacity [10 ⁴ kW]	Reserve Margin [%]	Daily Energy Supply [10⁴kWh]	Daily Load Facter [%]
2016	14,914	1/24	Tue.	18:00~19:00	-	16,354	1,440	9.7	314,968	88.0
2017	15,577	1/25	Thur.	18:00~19:00	-	16,915	1,339	8.6	330,605	88.4
2018	14,603	1/10	Thur.	09:00~10:00	-	16,104	1,501	10.3	308,436	88.0
2019	14,619	2/7	Fri.	09:00~10:00	-	16,808	2,189	15.0	303,347	86.5
2020	15,607	1/8	Fri.	09:00~10:00	-	17,012	1,406	9.0	329,833	88.1

7. Nationwide Lowest Demand Period

Table 1-13 shows the status of the lowest demand period for nationwide and regional service areas (FY 2020).

	Bottom Demand [10 ⁴ kW]	Occurrence Date & Time			Daily Mean Temperature [℃]	Daily Energy Supply [10 ⁴ kWh]
Hokkaido	227	8/31	Mon.	01:00~02:00	17.4	6,992
Tohoku	596	5/5	Tue.	00:00~01:00	17.6	15,925
Tokyo	1,877	5/3	Sun.	06:00~07:00	20.7	52,843
Chubu	826	5/6	Wed.	06:00~07:00	17.8	22,762
Hokuriku	182	5/4	Mon.	07:00~08:00	22.1	4,841
Kansai	941	5/3	Sun.	06:00~07:00	19.5	26,114
Chugoku	408	5/4	Mon.	00:00~01:00	20.2	10,819
Shikoku	191	9/28	Mon.	01:00~02:00	21.7	6,445
Kyushu	623	5/4	Mon.	00:00~01:00	20.3	16,898
Okinawa	56	4/26	Sun.	06:00~07:00	18.3	1,611
Nationwide	6,065	5/3	Sun.	06:00~07:00	-	162,845

Table 1-13: Lowest Demand Period for Nationwide and Regional Service Areas⁶

⁶ The daily mean temperatures are provided by the JMA based on the data for the cities where the headquarters of the GT&D companies (except for the Okinawa EPCO) are located. (For the regional service area of the Okinawa EPCO, the data for Naha, the prefectural capital of Okinawa, were used instead).

8. Nationwide Peak Daily Energy Supply

Tables 1-14 and 1-15 show the summer (July to September 2020) and winter (December 2020 to February 2021) peak daily energy supply for nationwide and regional service areas in FY 2020, respectively.⁷

Area	Peak Daily Energy Supply [10 ⁴ kWh]	Occurrence I	Date	Daily Mean Temperature [°C]
Hokkaido	8,543	8/28	Fri.	27.3
Tohoku	26,660	8/28	Fri.	29.1
Tokyo	103,413	8/21	Fri.	30.1
Chubu	48,099	8/20	Thur.	31.5
Hokuriku	9,650	9/3	Thur.	31.9
Kansai	53,236	8/21	Fri.	31.8
Chugoku	20,546	8/20	Thur.	31.0
Shikoku	9,832	8/20	Thur.	30.7
Kyushu	30,936	8/20	Thur.	30.6
Okinawa	3,132	7/14	Tue.	29.8
Nationwide	310,303	8/20	Thur.	-

Table 1-14: Summer Peak Daily Energy Supply for Nationwide and Regional Service Areas

Area	Peak Daily Energy Supply [10 ⁴ kWh]	Occurrence Date		Daily Mean Temperature [°C]
Hokkaido	11,865	1/19	Tue.	-7.2
Tohoku	32,248	1/8	Fri.	-2.8
Tokyo	103,519	1/12	Tue.	3.4
Chubu	49,287	1/8	Fri.	0.0
Hokuriku	11,604	1/8	Fri.	-1.5
Kansai	53,602	1/8	Fri.	0.2
Chugoku	23,932	1/8	Fri.	-1.6
Shikoku	10,717	1/8	Fri.	-0.5
Kyushu	34,099	1/8	Fri.	-0.5
Okinawa	2,394	1/9	Sat.	11.6
Nationwide	329,833	1/8	Fri.	-

⁷ See footnote 6.

9. Instructions, Requests Issued and Controls Implemented by the Organization

Instructions and Requests

According to the provisions of paragraph 1 of Article 28-44 of the Electricity Business Act (hereafter, the Act), the Organization may, when it finds it necessary to improve the electricity supply-demand status, require members such as EPCOs to undertake certain necessary actions, if the status of the electricity supply-demand from an electricity business conducted by a member has worsened or is likely to worsen.

During FY 2020, the Organization issued instructions to GT&D companies on 226 occasions for them to exchange power according to the provisions of items 1 to 3, paragraph 1 of Article 111 of the Operational Rules (See Table 1-16). The instructions included measures for the improvement of supply-demand status during the winter of 2020/21. The number of issuances by the Organization was more than in any year since 2015. Further, the Organization issued instructions and requests on three occasions to retail companies and electric power suppliers for them to procure additional supply capacity according to the provisions of paragraphs 1 and 2 of the Article. This followed the output curtailment of thermal power generation triggered by a shortage of generation fuels during the winter of 2020/21. For the details of the instructions and requests, please see <Reference> Detailes of Actual Power Exchange Instructions, and Instructions and Requests to Generation Companies and Retail Companies Issued by the Organization.⁸ The specific instructions are stated below.

(1) Instructions for the improvement of supply-demand status (from April to November 2020, and February 2021)

The Organization has issued instructions to the GT&D companies that supply-demand status may degrade without power exchanges through cross-regional interconnection lines because of shortage of supply capacity in the corresponding area, following the unexpected demand growth caused by higher temperatures, decreasing solar power output, and the shutdown of generators triggered by earthquakes.

- $\cdot \,$ Tohoku EPCO Network
 - August 28: 400 MW at most following unexpected demand growth caused by higher temperatures, (one instruction)
- Kyushu EPCO Transmission & Distribution
 September 24:1600 MW at most, following unexpected decrease in solar power output, (three intructions)
- + Shikoku EPCO Transmission & Distribution
- November 25: 400 MW at most, following unexpected decrease in solar power output, (one instruction)
- $\cdot \,$ Tohoku EPCO Network

February 14: 3440 MW, following supply capacity shortage caused by the shutdown of several

⁸ <u>http://www.occto.or.jp/oshirase/shiji/index.html</u> (in Japanese only)

(2) Instructions and Requests for improvement of supply-demand status during winter of 2020/21 (from December 2020 to January 2021)

Following prolonged cold weather, the electricity demand during the winter of 2020/21 was higher than for a normal year. To meet the demand, fossil-fueled thermal generators, mainly liquified natural gas (LNG)-fired, were operated more extensively than in a normal year. Consequently, the risk of a deficiency in LNG fuel has emerged. Output curtailment of thermal generation led to a supply capacity deficiency nationwide. Further, the demand increase caused by the cold weather led to deficiencies in the balancing capacity of GT&D companies in several regional service areas that deals with energy imbalances. As a result, it was necessity to exchange power through cross-regional interconnection lines. More specifically, the Organization issued instructions to the GT&D companies involved in power exchange for them to improve supply-demand status, and the instructions to generation companies and retail companies for them to procure additional supply capacity.

a. Instructions to GT&D companies.

The Organization issued the instructions on 218 occasions in total during the winter of 2020/21(from December 15, 2020 to January 16, 2021) as indicated in Table 1-17. The issuance of the instructions to exchange power was carefully implemented. The considerations included 1) that there were several areas of deficient supply capacity, 2) a period of deficient supply capacity could extend for many hours, and 3) other areas that were regarded as areas having reserve capacity might not have sufficient capacity. In this way, the instructions could be issued to both sending and receiving companies within a short period.

b. Instructions to generation companies and retail companies, and requests to electric power suppliers.

Output curtailment of thermal generation led to a supply capacity deficiency nationwide. The Organization issued instructions to generation companies and retail companies who owned nonbalancing capacity generators for them to increase their generation according to the provisions of item v, paragraph 1 of Article 28-44 of the Act, and item v, paragraph 1 of Article 111 of the Operational Ruls. In addition, the Organization requested electric power suppliers to increase their generation according to the provisions of paragraph 2 of Article 111 of the Operational Rules.

• The period of instruction and request issuance was from January 6 (ASAP) to 24:00 on January 26

(issued on three occasions for the above period, including two repeat calls)

- Instructions were issued to 85 members on one occasion, 101 members on two occasions, and 103 members on three occasions.
- Requests were issued to 6 companies on one occasion, 69 companies on two occasions, and 71 companies on three occasions.

					[occasions]
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Nationwide	2	10	25	6	226

Table 1-16: Actual Instructions to GT&D Companies Issued by the Organization (FY 2016 to FY 2020)

Table 1-17: Actual Instructions to GT&D Companies Issued by the Organization (from December 12 to January 16 by regional service area)

	•	-
0	ccasions	

Tohoku	Tokyo	Chubu	Hokuriku	Kansai	Chugoku	Shikoku	Kyushu	Nationwide
1	9	1	22	94	42	25	24	218

Controls

The Organization implemented long-cycle cross-regional frequency control⁹ to send surplus electric energy generated from renewable energy-generating facilities in the Kyushu EPCO area to the Chugoku and Shikoku EPCO areas through cross-regional interconnection lines by utilizing their available transfer capability (ATC) according to the provisions of Article 132 of the Operational Rules. The Organization received the request for control by the Kyushu EPCO for measures against the shortage of ability to reduce power supply.¹⁰ Such controls were implemented on 56 occasions during FY 2020.

⁹ This refers to frequency control by utilizing the balancing capacity of members that are GT&D companies of other regional service areas through interconnection lines. This is used when the balancing capacity for redundancy becomes or might become insufficient in a regional service area.

¹⁰ This refers to ability to decrease the power supply from generators such as thermal power generators. The output of renewable energy can fluctuate over a short period. It is then essential to control the output of thermal power generators according to such fluctuations. Among such output controls, the capacity to vary the output of generators is generally called the "balancing capacity for redundancy".

10. Output Shedding of Renewable energy-generating Facilities Operated by EPCOs other than GT&D Companies

GT&D companies may order renewable energy-generating facilities from other EPCOs to shed their output in cases of expected oversupply of demand for its regional service areas after shedding the output of generators other than the renewable-energy-generating facilities of the GT&D company, according to the provisions of the Ministerial Ordinance of Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electric Utilities.

Tables 1-18 and 1-19 show the actual output shedding of renewable-energy-generating facilities in FY 2020 for the Kyushu mainland and isolated islands, respectively.¹¹ "Shedding Instructed" in Table 1-18 indicates the total effect of the instructions issued on both the day ahead which is shed by offline control, and on the current day, which is shed by online control. The actual shed capacity is expressed in parentheses for that day. A bar in parentheses indicates that there was no output shedding for that day. Necessary output shedding for the isolated island is indicated in Table 1-19. It is calculated by deducting the demand from the supply capacity, and procured by offline control.

Output shedding of renewable-energy-generating facilities was implemented in cases the balancing capacity for redundancy might become insufficient. The shedding period was from 09:00 to 16:00 in each implementation for the isolated islands, and from 8:00 to 16:00 on the Kyushu mainland, except for a few cases.

Instructions for output shedding were only issued for the regional service area of Kyushu GT&D. In FY 2020, instructions were issued on 77 days, which was a decrease on the previous year's 93 days, in the midst of the increasing capacity of variable renewable energy such as solar power and wind power. On 17 days, there was no actual shedding.

The Organization confirms and verifies whether the output shedding of renewable-energy-generating facilities that Kyushu EPCO implemented to facilities of EPCOs according to the provisions of Article 180 of the Operational Rules. The result of the confirmation and verification was that it was appropriate.

¹¹ <u>http://www.occto.or.jp/oshirase/shutsuryokuyokusei/index.html</u> (in Japanese only).

	Shedding Instructed		Shedding Instructed
Date	(Actually shed)	Date	(Actually shed)
2020/4/2(Thur.)	133.7(92.0)	2020/6/7(Sun.)	26.1(42.2)
2020/4/3(Fri.)	126.0(38.0)	2020/6/20(Sat.)	41.5(-)
2020/4/4(Sat.)	192.7(196.7)	2020/6/22(Mon.)	28.9(41.4)
2020/4/5(Sun.)	185.8(186.5)	2020/7/19(Sun.)	62.4(-)
2020/4/6(Mon.)	129.2(104.7)	2020/9/27(Sun.)	110.9(23.4)
2020/4/7(Tue.)	138.3(97.9)	2020/10/18(Sun.)	58.3(-)
2020/4/8(Wed.)	119.2(96.5)	2020/10/24(Sat.)	68.2(-)
2020/4/9(Thur.)	96.0(56.2)	2020/10/25(Sun.)	85.7(35.4)
2020/4/10(Fri.)	151.0(54.1)	2020/10/31(Sat.)	55.0(-)
2020/4/11(Sat.)	100.5(106.1)	2021/1/3(Sun.)	36.8(9.5)
2020/4/14(Tue.)	154.6(142.9)	2021/1/31(Sun.)	24.1(-)
2020/4/15(Wed.)	35.9(45.8)	2021/2/7(Sun.)	151.4(88.8)
2020/4/16(Thur.)	195.9(144.7)	2021/2/10(Wed.)	53.6(-)
2020/4/18(Sat.)	227.9(186.8)	2021/2/16(Tue.)	65.2(-)
2020/4/20(Mon.)	148.7(55.9)	2021/2/20(Sat.)	122.0(76.2)
2020/4/22(Wed.)	190.3(186.4)	2021/2/21(Sun.)	195.2(192.7)
2020/4/24(Fri.)	80.3(111.3)	2021/2/23(Tue.)	126.4(88.9)
2020/4/25(Sat.)	245.2(230.1)	2021/2/24(Wed.)	100.8(75.0)
2020/4/26(Sun.)	56.6(-)	2021/3/3(Wed.)	94.3(-)
2020/4/27(Mon.)	152.5(109.9)	2021/3/10(Wed.)	85.5(50.8)
2020/4/28(Tue.)	140.3(93.5)	2021/3/11(Thur.)	25.3(-)
2020/4/29(Wed.)	209.3(179.2)	2021/3/13(Sat.)	97.7(-)
2020/4/30(Thur.)	135.7(137.4)	2021/3/14(Sun.)	189.0(75.2)
2020/5/1(Fri.)	84.2(78.7)	2021/3/15(Mon.)	57.5(21.6)
2020/5/2(Sat.)	156.3(87.5)	2021/3/17(Wed.)	54.4(51.1)
2020/5/4(Mon.)	236.2(65.5)	2021/3/18(Thur.)	120.5(-)
2020/5/5(Tue.)	252.2(148.7)	2021/3/22(Mon.)	166.4(24.5)
2020/5/6(Wed.)	258.1(140.5)	2021/3/23(Tue.)	167.1(197.8)
2020/5/7(Thur.)	170.5(171.1)	2021/3/24(Wed.)	140.1(74.9)
2020/5/8(Fri.)	189.0(136.7)	2021/3/25(Thur.)	216.3(214.6)
2020/5/10(Sun.)	138.7(-)	2021/3/26(Fri.)	272.3(266.0)
2020/5/11(Mon.)	151.7(175.3)	2021/3/27(Sat.)	385.7(297.5)
2020/5/12(Tue.)	213.8(18.3)	2021/3/28(Sun.)	187.9(-)
2020/5/13(Wed.)	183.3(163.1)	2021/3/29(Mon.)	227.4(193.7)
2020/5/14(Thur.)	164.8(116.6)	2021/3/31(Wed.)	212.9(200.1)
2020/5/17(Sun.)	243.1(193.1)		
2020/5/19(Tue.)	184.8(139.5)		
2020/5/20(Wed.)	109.0(67.0)		
2020/5/21(Thur.)	172.0(70.2)		
2020/5/22(Fri.)	123.3(-)		
2020/5/23(Sat.)	111.5(-)		
2020/5/24(Mon.)	203.5(125.3)		

 Table 1-18: Instructed and Actual Output Shedding of Renewable-energy-generating Facilities for FY 2020 (Kyushu Mainland, 10⁴ kW)¹²

¹² The instructions were issued for the hours between 08:00 and 16:00, other than the 11:00–15:00 period on April 11 and the 12:00–14:30 period on April 15. Date expressed in blue refer to days with no actural shedding.

2220/4/4(Sat.) 590 1,420 2020/10/(Sut.) 1,100 2020/4/5(Mon.) 4,450 730 2020/10/(Sut.) 500 2020/4/5(Mon.) 130 2020/10/(Sut.) 500 500 2020/4/9(Thur.) 700 2020/10/(Sut.) 500 500 2020/4/9(Thur.) 700 2020/10/13(Thur.) 810 2020/10/14(Wed.) 1,450 2020/4/13(Mon.) 4,500 32020/10/23(Thur.) 310 2020/10/23(Thur.) 310 2020/4/13(Thur.) 4,560 950 300 2020/10/23(Thur.) 300 1,460 2020/4/13(Str.) 3,640 2,810 800 2020/10/23(Thur.) 1,470 2020/4/21(Tue.) 4,550 2,060 2020/11/3(Str.) 3,80 720 2020/4/24(Fir.) 1,160 2,280 2020/11/3(Str.) 3,80 720 2020/4/24(Fir.) 1,160 2,270 2020/11/3(Str.) 360 2020/11/3(Str.) 360 2020/4/24(Str.) 1,320 2020/11/3(Str.) 360 2020/11/3(Str.)	Date	Tanegashima	Iki	Tokunoshima	Tsushima	Date	Tanegashima	Iki	Tokunoshima	Tsushima
2020/4/5(Sun.) 4,450 730 2020/1/6(Sun.) 500 2020/4/6(Nuc.) 510 2020/10/(10(Sat.) 500 2020/4/8(Wed.) 510 510 2020/10/(10(Sat.) 500 2020/4/8(Wed.) 510 510 2020/10/11(Wed.) 1,450 2020/4/13(Fun.) 300 2020/10/23(Fun.) 310 2020/10/24(Sun.) 1,460 2020/4/14(Tue.) 4,870 1,320 2020/10/24(Sun.) 1,470 2020/4/14(Tue.) 4,870 1,320 2020/10/24(Sun.) 1,470 2020/4/12(Fun.) 4,50 2020/10/24(Sun.) 1,520 400 2020/4/24(Sun.) 3,470 1,350 2020/10/24(Sun.) 1,630 2020/4/23(Fun.) 3,550 2020/11/3(Tue.) 1,370 2020/11/3(Sun.) 370 2020/4/23(Fun.) 1,550 2,060 2020/11/3(Sun.) 360 2020/11/3(Sun.) 370 2020/4/23(Fun.) 1,550 2,060 2020/11/3(Sun.) 570 2020/11/3(Sun.) 360 2020/4/24(Fun.) 1,370	2020/4/4(Sat.)	590	1,420			2020/10/1(Thur.)	1,100			
2020/4/2(fmc) 130 2020/1/10(sch) 500 2020/4/2(fmc) 510 510 2020/1/01(sch) 500 2020/4/9(Thur.) 700 2020/1/01(sch) 500 1,450 2020/4/10(fm.) 4,990 2020/1/01(stm.r) 1,060 1,450 2020/1/13(Tme.) 4,870 1,320 2020/1/02(stm) 1,500 2020/1/13(fm.r) 4,560 2020/1/02(stm) 1,500 400 2020/1/13(fm.r) 4,560 2020/1/02(stm) 1,520 400 2020/1/2(stm) 1,530 2020/1/02(stm) 380 720 2020/1/2(stm) 1,550 2020/1/1/3(stm) 380 720 2020/1/2(stm) 1,550 2020/1/1/3(stm) 380 720 2020/1/2(stm) 1,500 2020/1/1/3(stm) 380 720 2020/1/2(stm) 1,600 2020/1/1/3(stm) 380 720 2020/1/2(stm) 1,600 2020/1/1/3(stm) 380 720 2020/2(stm) 1,600 2020/1/1/1/1(stm) 1,730 <td< td=""><td>2020/4/5(Sun.)</td><td>4,450</td><td>730</td><td></td><td></td><td>2020/10/4(Sun.)</td><td>500</td><td></td><td></td><td></td></td<>	2020/4/5(Sun.)	4,450	730			2020/10/4(Sun.)	500			
2020/4/?(Tuc.) 700 2020/10(10(5st.) 500 2020/4/9(Thur.) 700 2020/10(1/tuc.) 810 2020/4/9(Thur.) 700 2020/10(1/tuc.) 1,450 2020/4/10(Fri.) 300 2020/10/21(Fri.) 1,060 2020/4/14(Tuc.) 4,870 1,320 2020/10/21(Fri.) 1,060 2020/4/14(Tuc.) 4,870 1,320 2020/10/23(Fri.) 1,470 2020/4/12(Fri.) 3470 1,350 2020/10/23(Fri.) 1,520 400 2020/4/12(Fri.) 2,350 2020/10/23(Fri.) 1,370 370 2020/10/23(Fri.) 370 2020/4/22(Wed.) 1,100 2,280 2020/11/13(Tuc.) 1,370 370 2020/4/25(Str.) 3,300 2,590 2020/11/14(Str.) 1,300 2020/11/14(Str.) 1,440 2020/4/25(Str.) 1,50 2020/11/14(Str.) 1,430 2020/11/14(Str.) 1,430 2020/4/20(Mon.) 2,570 2020/11/14(Str.) 1,50 2020/11/14(Str.) 1,50 2020/4/20(Mon.) 3,520 <t< td=""><td>2020/4/6(Mon.)</td><td></td><td>130</td><td></td><td></td><td>2020/10/6(Tue.)</td><td>1,340</td><td></td><td></td><td></td></t<>	2020/4/6(Mon.)		130			2020/10/6(Tue.)	1,340			
2020/4/8(Wed.) 510 510 2020/10/13(Tue.) 810 2020/4/9(Thur.) 700 2020/10/14(Wed.) 1,450 2020/4/13(Mon.) 4,990 2020/10/14(Wed.) 1,450 2020/4/14(Tue.) 4,870 1,320 2020/10/24(Stat.) 1,470 2020/4/14(Tue.) 4,560 950 300 2020/10/24(Stat.) 1,470 2020/4/12(Tue.) 2,350 2020/10/25(Sto.) 1,520 400 2020/4/22(Wed.) 1,100 2,250 2020/10/27(Tue.) 510 2020/10/27(Tue.) 510 2020/4/22(Wed.) 1,00 2,250 2020/11/14(Wed.) 500 2020/11/14(Wed.) 500 2020/4/22(Wed.) 1,00 2,250 2020/11/14(Wed.) 500 2020/11/14(Stat.) 430 2020/4/26(Star.) 1,160 2,270 2020/11/14(Stat.) 450 2020/11/14(Stat.) 460 2020/4/26(Star.) 1,270 12021/121(Stat.) 360 2021/121(Stat.) 360 2020/5/1(Fin) 1,370 2021/2/2(Stat.) 1,70 2	2020/4/7(Tue.)		700			2020/10/10(Sat.)	500			
2020/4/9(Thur,) 700 380 2020/10/3(Tiur,) 1,450 2020/4/13(Mon.) 4,990 2020/10/23(Fit.) 310 2020/4/13(Mon.) 4,870 1,320 2020/10/23(Fit.) 310 2020/4/13(Fit.) 4,870 1,320 2020/10/23(Fit.) 1,470 2020/4/12(Fit.) 450 2020/10/23(Fit.) 1,470 2020/4/23(Fit.) 400 2020/4/12(Fit.) 2,150 2020/10/23(Fit.) 1,80 2020/10/23(Fit.) 1,470 2020/4/23(Fit.) 3,470 1,350 2020/10/27(Tue.) 380 720 2020/4/24(Fit.) 4,50 2020/11/3(Fit.) 380 720 2020/11/3(Fit.) 330 2020/4/25(St.) 3,300 2,950 210 2020/11/19(Mon.) 710 450 2020/4/28(Fue.) 4,120 1,220 2020/11/13(Str.) 300 2020/11/13(Str.) 300 2020/57(Fit.) 1,700 2020/11/3(Str.) 1,680 2021/12/3(Str.) 300 2020/57(Khon.) 2,720 2021/12/(Str.) 370	2020/4/8(Wed.)		510	510		2020/10/13(Tue.)		810		
2020/4/10(Fi,) 380 2020/10/15(Thuc,) 1,060 2020/4/13(Mon,) 4,970 1,320 2020/10/23(Fri.) 300 1,660 2020/4/14(Tuc.) 4,560 950 300 2020/10/23(Fri.) 300 1,460 2020/4/12(Fri.) - 450 2020/10/23(Fri.) 1,520 400 2020/4/24(Fri.) - 2,350 2020/10/23(Fri.) 380 720 2020/4/21(Tuc.) - 2,350 2020/11/3(Gru.) 1,370 370 2020/4/24(Fri.) 4,550 2,060 2020/11/3(Gru.) 1,370 370 2020/4/24(Fri.) 4,550 2,060 2020/11/3(Mon.) 630 2020/11/3(Mon.) 580 2020/4/26(Sun.) 1,160 2,770 2020/11/3(Sun.) 660 2020/11/2(Sun.) 570 2020/4/28(Frue.) 4,120 1,320 2021/1/21(Sun.) 1,66 2021/1/21(Sun.) 570 2020/5/2(Fri.) 2,860 1,680 2021/2/21(Sun.) 580 2021/2/21(Sun.) 580 2020/5/2(Fr	2020/4/9(Thur.)		700			2020/10/14(Wed.)		1,450		
2020/4/13(Mon.) 4,990 2020/10/20(Tue.) 1,060 2020/14(Tue.) 4,870 1,320 2020/10/20(Tue.) 1,460 2020/17(Fri.) 300 2020/10/24(Sct.) 1,470 2020/17(Tue.) 1,570 2020/10/25(Sun.) 1,520 400 2020/17(20(Mon.) 3,470 1,350 2020/10/25(Sun.) 1,500 2020/10/22(Tue.) 1,370 2020/4/22(Wed.) 1,100 2,280 2020/10/27(Tue.) 1,370 370 2020/4/22(Wed.) 1,100 2,280 2020/11/3(Tue.) 1,370 370 2020/4/25(St.) 3,300 2,950 210 2020/11/14(Sun.) 630 2020/4/26(Wed.) 1,460 2202/11/2(Sun.) 1,360 2020/11/14(Sat.) 1,360 2020/4/28(Tue.) 3,760 1,270 100 2021/1/2(Sun.) 570 2020/5/3(St.) 1,040 2,240 2021/1/3(Sun.) 1,660 2021/2/2(Sun.) 2,860 630 2020/5/3(St.) 1,700 290 2021/2/2(Sun.) 2,860 630 </td <td>2020/4/10(Fri.)</td> <td></td> <td></td> <td>380</td> <td></td> <td>2020/10/15(Thur.)</td> <td></td> <td>310</td> <td></td> <td></td>	2020/4/10(Fri.)			380		2020/10/15(Thur.)		310		
2020/4/14(Tue.) 4,870 1,320 2020/10/23(Fri.) 300 1,460 2020/4/14(Tue.) 4,560 950 300 2020/10/24(Sat.) 1,520 400 2020/4/12(Fri.) - 450 2020/10/24(Sat.) 1,520 400 2020/4/21(Fue.) 2,350 2020/10/23(Sat.) 380 720 2020/4/21(Fue.) 1,100 2,280 2020/11/3(Tue.) 1,370 370 2020/4/22(Tue.) 1,160 2,270 2020/11/3(Sat.) 1,370 300 2020/4/24(Fri.) 4,550 2,060 2020/11/13(Fri.) 1,370 300 2020/4/24(Fue.) 1,160 2,270 2020/11/13(Fri.) 360 2020/11/14(Sat.) 1,430 2020/4/26(Sun.) 1,160 2,270 2020/11/14(Sat.) 1,430 2020/11/14(Sat.) 1,430 2020/4/26(Wed.) 2,498 2,810 1,660 2020/11/23(Sun.) 570 2020/5/(Wed.) 1,040 2,240 2021/1/20(Sun.) 570 2021/2/20(Sun.) 2021/2/20(Sun.) 570	2020/4/13(Mon.)	4,990				2020/10/20(Tue.)		1.060		
D202/4/16(Thur.) 4,560 950 300 2020/10/24(Sat.) 1,470 D202/4/17(Fr.1) 450 2020/10/25(Sun.) 1,520 400 D202/4/12(Kat.) 3,640 2,810 820 2020/10/25(Sun.) 1,520 D202/4/20(Mon.) 3,470 1,350 2020/10/27(Tue.) 510 D202/4/21(Wed.) 1,100 2,280 2020/11/3(Tue.) 1,370 D202/4/22(Wed.) 1,150 2020/11/4(Str.) 1,630 D202/4/25(St.) 3,300 2,950 2020/11/4(Str.) 1,430 D202/4/26(Mon.) 2,150 820 2020/11/4(Str.) 360 D202/4/27(Mon.) 2,150 820 2020/11/4(Str.) 360 D202/4/28(Wed.) 4,980 2,810 1,680 2021/1/3(Str.) 360 D202/5/2(Fri.) 1,70 2021/1/3(Str.) 360 2021/2/3(Str.) 660 D202/5/2(Fri.) 1,70 2021/2/2(Str.) 570 2021/2/2(Str.) 570 D202/5/2(Fri.) 1,600 2021/2/2(Str.) 530	2020/4/14(Tue.)	4.870	1.320			2020/10/23(Fri.)	300	1.460		
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Display Display <thdisplay< th=""> <th< td=""><td>2020/5/1(Tit.) 2020/5/2(Sat.)</td><td>170</td><td>250</td><td></td><td></td><td>2021/1/30(Suc.)</td><td>1 680</td><td></td><td></td><td></td></th<></thdisplay<>	2020/5/1(Tit.) 2020/5/2(Sat.)	170	250			2021/1/30(Suc.)	1 680			
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2020/5/12(Tue.) 520 1/50 2021/2/20(Sun.) 3/300 1/550 2020/5/13(Wed.) 3,900 1,790 2021/2/21(Sun.) 3/320 1,550 2020/5/13(Wed.) 3,900 1,790 2021/2/22(Mon.) 1,020 140 2020/5/14(Thur.) 3,370 2021/2/24(Wed.) 2,680 2021/2/24(Wed.) 2,680 2020/5/10(Thur.) 1,490 2021/3/5(Fri.) 1,710 2020/5/23(Sut.) 270 2020/5/23(Sat.) 1,100 2021/3/10(Wed.) 1,730 840 2020/5/24(Sun.) 1,040 470 2021/3/13(Sat.) 3,800 2020/5/25(Mon.) 2020/5/27(Wed.) 870 2021/3/14(Sun.) 4,240 830 2020/5/28(Thur.) 3,970 1,740 2021/3/15(Mon.) 3,470 150 2020/5/28(Thur.) 3,970 1,440 2021/3/12(Xun.) 840 2020/5/23(Tue.) 1,660 2020/5/29(Fri.) 2,550 2021/3/22(Mon.) 3,470 150 2020/6/22(Mon.) 1,660 2020/6/21(Sun.) 1,180 1,240 2021/3/22(Mon.) 970 210 2021/3/23(Tue.)	2020/5/11(Mon)	2,330	1.710			2021/2/20(Sat.)	3,530	1.730	190	
2020/5/13(Wed.) 3,900 1,790 2021/2/22(Kon.) 1,020 140 2020/5/13(Wed.) 3,370 2021/2/23(Tue.) 3,320 140 2020/5/19(Tue.) 2,610 2,680 2021/2/24(Wed.) 2,680 2021/2/28(Sun.) 270 2020/5/19(Tur.) 2,710 1,570 2021/3/5(Fri.) 1,710 2021/3/28(Sun.) 270 2020/5/21(Thur.) 1,490 2021/3/5(Fri.) 1,710 300 2021/3/16(Wed.) 300 2020/5/23(Sat.) 1,100 2021/3/10(Wed.) 1,730 840 2020/5/28(Mon.) 300 2020/5/24(Sun.) 1,460 2021/3/13(Sat.) 3,800 2021/3/14(Sun.) 4,240 830 2020/5/26(Mon.) 1,460 2021/3/15(Mon.) 3,470 150 2020/5/28(Thur.) 3,970 1,740 2021/3/16(Tue.) 1,640 2020/5/29(Fri.) 2,550 2021/3/22(Mon.) 840 2020/6/2(Sun.) 1,180 2,440 2021/3/28(Mon.) 840 2020/6/2(Sun.) 2020/6/2(Sun.) 910 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 2021/3/26(Fri.) 4,260 1	2020/5/12(Tue.)	520	1,550			2021/2/21(Sun)	3,320	1,550	560	
2020/5/14(Thur.) 3,370 2021/2/23(Tue.) 3,320 2020/5/19(Tue.) 2,610 2,680 2021/2/24(Wed.) 2,680 2020/5/20(Wed.) 2,710 1,570 2021/2/28(Sun.) 270 2020/5/21(Thur.) 1,490 2021/3/5(Fri.) 1,710 300 2020/5/22(Fri.) 1,360 2021/3/10(Wed.) 1,730 840 2020/5/23(Sat.) 1,100 2021/3/13(Sat.) 3,800 2021/3/13(Sat.) 3,800 2020/5/25(Mon.) 1,460 2021/3/13(Sat.) 3,800 2020/5/26(Tur.) 3,970 2020/5/26(Thur.) 3,970 1,740 2021/3/16(Tue.) 1,640 150 2020/5/29(Fri.) 2,550 2021/3/17(Wed.) 840 2020/6/2(Tue.) 1,160 2020/6/2(Tue.) 1,180 1,240 2021/3/22(Mon.) 970 210 2020/6/2(Sun.) 1,100 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/26(Fri.) 4,260 1,000 780 2020/9/20(Sun.) 1,100 2021/3/26(Fri.) 4,260 1,000 780 2020/9/22(2020/5/13(Wed.)	3,900	1,790			2021/2/22(Mon)	1.020	140		
2020/5/19(Tue.) 2,610 2,680 2021/2/24(Wed.) 2,680 2020/5/20(Wed.) 2,710 1,570 2021/2/24(Wed.) 2,680 2021/2/24(Wed.) 2,680 2020/5/20(Wed.) 2,710 1,750 2021/2/24(Wed.) 2,680 2021/2/24(Wed.) 2,680 2020/5/22(Fri.) 1,490 2021/3/5(Fri.) 1,710 300 2020/5/23(Sat.) 1,100 2021/3/10(Wed.) 1,730 840 2020/5/24(Sun.) 1,040 470 2021/3/13(Sat.) 3,800 2020/5/25(Mon.) 1,460 2021/3/14(Sun.) 4,240 830 2020/5/28(Thur.) 3,970 1,740 2021/3/16(Tue.) 1,640 2020/5/29(Fri.) 2,550 2021/3/16(Tue.) 1,640 2021/3/16(Tue.) 1,660 2020/6/2(Tue.) 1,180 1,240 2021/3/22(Mon.) 970 210 2020/6/21(Sun.) 910 2021/3/22(Mon.) 970 210 2020/6/23(Tue.) 200 2021/3/26(Fri.) 4,140 850 2020/9/20(Sun.) 1,100 2021/3/26(Fri.) 4,260 1,000 780	2020/5/14(Thur.)	3,370	_,, , , , ,			2021/2/23(Tue.)	3,320	1.0		
2020/5/20(Wed.) 2,710 1,570 2021/2/28(Sun.) 270 2020/5/21(Thur.) 1,360 2021/3/5(Fri.) 1,710 300 2020/5/23(Sat.) 1,100 2021/3/10(Wed.) 1,730 840 2020/5/24(Sun.) 1,040 470 2021/3/11(Thur.) 710 2020/5/24(Sun.) 1,040 470 2021/3/13(Sat.) 3,800 2020/5/26(Mon.) 1,460 2021/3/13(Sat.) 3,800 2020/5/27(Wed.) 870 2021/3/15(Mon.) 3,470 150 2020/5/29(Fri.) 2,550 2021/3/17(Wed.) 840 2021/3/17(Wed.) 840 2020/6/2(Tue.) 1,180 1,240 2021/3/17(Wed.) 840 2020/6/2(Mon.) 1,660 2020/6/21(Sun.) 1,400 2021/3/22(Mon.) 970 210 2020/6/22(Mon.) 200 2020/6/23(Tue.) 200 2021/3/23(Tue.) 4,140 850 2020/9/20(Sun.) 1,100 2021/3/26(Fri.) 4,260 1,000 780 2020/9/21(Mon.) 1,550 650 2021/3/28(Sun.) 1,180 2020/9/20(Sun.) 1,180 2020/3/27(Sut.)	2020/5/19(Tue)	2,610	2,680			2021/2/24(Wed.)	2,680			
2020/5/21(Thur.) 1,490 2021/3/5(Fri.) 1,710 2020/5/22(Fri.) 1,360 2021/3/5(Fri.) 1,710 2020/5/23(Sat.) 1,100 2021/3/10(Wed.) 1,730 840 2020/5/24(Sun.) 1,040 470 2021/3/10(Wed.) 1,730 840 2020/5/25(Mon.) 1,460 2021/3/10(Wed.) 1,730 840 2020/5/26(Mon.) 1,460 2021/3/13(Sat.) 3,800 2020/5/26(Thur.) 3,970 1,740 2021/3/16(Tue.) 1,640 150 2020/5/29(Fri.) 2,550 2021/3/17(Wed.) 840 2020/6/2(Tue.) 1,180 1,240 2021/3/17(Wed.) 840 2020/6/2(Tue.) 1,180 1,240 2021/3/18(Thur.) 1,660 2021/3/23(Tue.) 4,140 850 2020/6/2(Sun.) 910 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 2021/3/26(Fri.) 4,260 1,000 780 2020/9/20(Sun.) 1,100 2021/3/27(Sat.) 3,220 2021/3/28(Sun.) 1,180 2021/3/29(Mon.) 4,700 1,480 2020/9/21(Mon.) 1,550 650 2021/3/28(Sun.) <td>2020/5/20(Wed.)</td> <td>2,010</td> <td>1.570</td> <td></td> <td></td> <td>2021/2/28(Sun.)</td> <td>2,000</td> <td>270</td> <td></td> <td></td>	2020/5/20(Wed.)	2,010	1.570			2021/2/28(Sun.)	2,000	270		
2020/5/22(Fri.) 1,360 2021/3/8(Mon.) 300 2020/5/23(Sat.) 1,100 2021/3/10(Wed.) 1,730 840 2020/5/24(Sun.) 1,040 470 2021/3/10(Wed.) 1,730 840 2020/5/25(Mon.) 1,460 2021/3/13(Sat.) 3,800 2021/3/13(Sat.) 3,800 2020/5/28(Thur.) 3,970 1,740 2021/3/16(Tue.) 1,640 150 2020/6/2(Tue.) 1,180 1,240 2021/3/18(Thur.) 1,660 1660 2020/6/2(Tue.) 1,180 1,240 2021/3/22(Mon.) 970 210 2020/6/2(Sun.) 1,100 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/26(Fri.) 4,260 1,000 780 2020/9/20(Sun.) 1,100 2021/3/28(Sun.) 1,180 2021/3/28(Sun.) 1,180 2020/9/21(Mon.) 1,550 650 2021/3/28(Sun.) 1,180 2021/3/28(Sun.) 2021/3/28(Sun.) 1,180 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2021/3/29(Mon.) 4,700 1,480 2020/9/27(Sun.)	2020/5/21(Thur.)	2,710	1.490			2021/3/5(Fri)	1 710	2,0		
2020/5/23(Sat.) 1,100 2021/3/10(Wed.) 1,730 840 2020/5/23(Sat.) 1,040 470 2021/3/11(Thur.) 710 2020/5/25(Mon.) 1,460 2021/3/13(Sat.) 3,800 2021/3/13(Sat.) 3,800 2020/5/28(Thur.) 3,970 1,740 2021/3/16(Tue.) 4,240 830 2020/5/29(Fri.) 2,550 2021/3/16(Tue.) 1,660 150 2020/6/2(Tue.) 1,180 1,240 2021/3/18(Thur.) 1,660 2020/6/2(Tue.) 1,180 1,240 2021/3/22(Mon.) 840 2020/6/21(Sun.) 1,400 2021/3/23(Tue.) 4,140 850 2020/6/22(Mon.) 260 2021/3/25(Thur.) 850 2021/3/25(Thur.) 2020/6/23(Tue.) 200 2021/3/25(Thur.) 850 2021/3/25(Thur.) 850 2020/9/20(Sun.) 1,1100 2021/3/28(Sun.) 1,180 2021/3/28(Sun.) 1,180 2020/9/22(Tue.) 1,210 2021/3/29(Mon.) 4,700 1,480 2021/3/31(Wed.) 2,370 Period of Instruction 09:00-16:00 Period of Instruction 09:00-16:00 2	2020/5/22(Fri)		1 360			2021/3/8(Mon)	1// 10	300		
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2020/5/28(Thur.) 3,970 1,740 2021/3/15(Mon.) 3,470 150 2020/5/29(Fri.) 2,550 2021/3/16(Tue.) 1,640 150 2020/6/2(Tue.) 1,180 1,240 2021/3/17(Wed.) 840 2020/6/2(Sun.) 1,400 2021/3/22(Mon.) 970 210 2020/6/21(Sun.) 910 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/26(Fri.) 4,260 1,000 780 2020/9/20(Sun.) 1,100 2021/3/27(Sat.) 3,220 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/22(Tue.) 1,210 2021/3/29(Mon.) 4,700 1,480 2,370 Period of Instruction 09:00-16:00 Period of Instruction 09:00-16:00 09:00-16:00	2020/5/23(Moll.)	1,400	870			2021/3/13(Suc.)	4 240	830		
2020/5/29(Fri.) 2,550 2021/3/16(Tue.) 1,640 2020/6/2(Tue.) 1,180 1,240 2021/3/17(Wed.) 840 2020/6/2(Tue.) 1,180 1,240 2021/3/18(Thur.) 1,660 2020/6/2(Sun.) 1,400 2021/3/22(Mon.) 970 210 2020/6/21(Sun.) 910 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/26(Fri.) 4,260 1,000 780 2020/9/20(Sun.) 1,100 2021/3/27(Sat.) 3,220 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2020/9/27(Sun.) 09:00-16:00 Period of Instruction 09:00-16:00 99:00-16:00	2020/5/28(Thur)	3 970	1 740			2021/3/15(Mon)	3 470	0.00	150	
2020/6/2(Tue.) 1,180 1,240 2021/3/17(Wed.) 840 2020/6/2(Sun.) 1,400 2021/3/18(Thur.) 1,660 2020/6/21(Sun.) 910 2021/3/22(Mon.) 970 210 2020/6/22(Mon.) 260 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/26(Fri.) 4,260 1,000 780 2020/9/20(Sun.) 1,100 2021/3/27(Sat.) 3,220 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2020/9/27(Sun.) 990 660 2021/3/31(Wed.) 2,370	2020/5/29(Fri)	2 550	1,740			2021/3/16(Tue)	1 640		150	
2020/6/7(Sun.) 1,400 2021/3/18(Thur.) 1,660 2020/6/21(Sun.) 910 2021/3/22(Mon.) 970 210 2020/6/22(Mon.) 260 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/26(Fri.) 4,260 1,000 780 2020/9/20(Sun.) 1,100 2021/3/27(Sat.) 3,220 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2020/9/27(Sun.) 990 660 2021/3/31(Wed.) 2,370	2020/6/2(Tue)	1 180	1 240			2021/3/17(Wed)	1,040	840		
2020/6/21(Sun.) 910 2021/3/22(Mon.) 970 210 2020/6/22(Mon.) 260 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/25(Thur.) 850 2020/9/20(Sun.) 1,100 2021/3/26(Fri.) 4,260 1,000 2020/9/21(Mon.) 1,550 650 2021/3/27(Sat.) 3,220 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/31(Wed.) 2,370	2020/6/7(Sun)	1,100	1 400			2021/3/18(Thur)		1 660		
2020/6/22(Mon.) 260 2021/3/23(Tue.) 4,140 850 2020/6/23(Tue.) 200 2021/3/25(Thur.) 850 2020/9/20(Sun.) 1,100 2021/3/26(Fri.) 4,260 1,000 780 2020/9/21(Mon.) 1,550 650 2021/3/27(Sat.) 3,220 1,180 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2020/9/27(Sun.) 09:00-16:00 Period of Instruction 09:00-16:00 09:00-16:00	2020/6/21(Sup)		910			2021/3/22(Mon)	970	210		
2020/6/23(Tue.) 200 2021/3/25(Thur.) 850 2020/9/20(Sun.) 1,100 2021/3/26(Fri.) 4,260 1,000 780 2020/9/21(Mon.) 1,550 650 2021/3/27(Sat.) 3,220 1,180 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2020/9/27(Sun.) 09:00-16:00 Period of Instruction 09:00-16:00 09:00-16:00	2020/6/22(Mon)		260			2021/3/23(Tue)	4,140	850		
2020/9/20(Sun.) 1,100 2021/3/26(Fri.) 4,260 1,000 780 2020/9/21(Mon.) 1,550 650 2021/3/27(Sat.) 3,220 1,180 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 1,480 2020/9/27(Sun.) 990 660 2021/3/31(Wed.) 2,370 Period of Instruction 09:00-16:00 Period of Instruction 09:00-16:00	2020/6/23(Tue)	200	200			2021/3/25(Thur.)	.,1.10	850		
2020/9/21(Mon.) 1,550 650 2021/3/27(Sat.) 3,220 2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2020/9/27(Sun.) 990 660 2021/3/31(Wed.) 2,370 Period of Instruction 09:00-16:00 Period of Instruction 09:00-16:00	2020/9/20(Sun)	200	1.100			2021/3/26(Fri.)	4.260	1.000	780	
2020/9/22(Tue.) 1,210 2021/3/28(Sun.) 1,180 2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2021/3/31(Wed.) 2,370 2,370 09:00-16:00 09:00-16:00	2020/9/21(Mon.)	1.550	650			2021/3/27(Sat.)	3.220	2,000		
2020/9/27(Sun.) 990 660 2021/3/29(Mon.) 4,700 1,480 2021/3/31(Wed.) 2,370 2,370 2,370 2,370	2020/9/22(Tue)	2,000	1.210			2021/3/28(Sun)	5,225	1.180		
Decision	2020/9/27(Sun.)	990	660			2021/3/29(Mon.)	4.700	1.480		
Period of Instruction 09:00-16:00 Period of Instruction 09:00-16:00	(00111)					2021/3/31(Wed.)	.,, 00	2.370		
	Period of Instruction		09:00	-16:00		Period of Instruction		09:00	-16:00	

Table 1-19: Output Shedding Needed for FY 2020 (Isolated islands of Kyushu, kW)

CHAPTER II: ACTUAL UTILIZATION OF CROSS-REGIONAL INTERCONNECTION LINES

1. Cross-regional Interconnection Lines and their Management

(1) Cross-regional Interconnection Lines

Cross-regional interconnection lines comprise transmission lines at 250 kV or more and AC/DC convertors that regularly connect the regional service areas of members that are GT&D companies. Electric power supplies outside each service area are made available through the interconnection lines. The Organization directs members to supply electricity through the cross-regional interconnection lines and secure the supply-demand balance in cases of insufficient supply capacity in each regional service area. Figure 2-1 and Table 2-1 show the cross-regional interconnection lines in Japan.



Fable 2-1: Summary of	Cross-regional	Interconnection Li	ines (at the end	of FY 2020)
2	U			

Interconnection Lines	Ar	eas•Dire	ectio	ons	Corresponding Facilities	AC/DC
Interconnection facilities	Forward	Hokkaido	\rightarrow	Tohoku	Hokkaido-Honshu HVDC Link,	
between Hokkaido and Honshu	Counter	Tohoku	\rightarrow	Hokkaido	New Hokkaido-Honshu HVDC Link	DC
Interconnection line between	Forward	Tohoku	\rightarrow	Tokyo	Soma-Futaba bulk line,	10
Tohoku and Tokyo	Counter	Tokyo	\rightarrow	Tohoku	Iwaki bulk line	AC
Interconnection facilities	Forward	Tokyo	\rightarrow	Chubu	Sakuma FC Shin Shinano FC	
between Tokyo and Chubu	Counter	Chubu	\rightarrow	Tokyo	Higashi Shimizu FC Hida-Shinano FC	bC
Interconnection line between	Forward	Chubu	\rightarrow	Kansai	Mia, Higashi Omi lina	<u>۸</u> ۲
Chubu and Kansai	Counter	Kansai	\rightarrow	Chubu		AC
Interconnection facilities	Forward	Chubu	\rightarrow	Hokuriku	Interconnection facilities of Minami Fukumitsu	DC
between Chubu and Hokuriku	Counter	Hokuriku	\rightarrow	Chubu	Fukumitsu Substation	DC
Interconnection line between	Forward	Hokuriku	\rightarrow	Kansai	Echizon Boinan ling	10
Hokuriku and Kansai	Counter	Kansai	\rightarrow	Hokuriku		AC
Interconnection lines between	Forward	Kansai	\rightarrow	Chugoku	Seiban–Higashi Okayama line,	٨٢
Kansai and Chugoku	Counter	Chugoku	\rightarrow	Kansai	Yamazaki–Chizu line	AC
Interconnection facilities	Forward	Kansai	\rightarrow	Shikoku	Interconnection facilities between	
between Kansai and Shikoku	Counter	Shikoku	\rightarrow	Kansai	Station	DC
Interconnection line between	Forward	Chugoku	\rightarrow	Shikoku	Henchi interconnection line	10
Chugoku and Shikoku	Counter	Shikoku	\rightarrow	Chugoku		AC
Interconnection line between	Forward	Chugoku	\rightarrow	Kyushu	Kanman interconnection line	10
Chugoku and Kyushu	Counter	Kyushu	\rightarrow	Chugoku		AC

(2) Management of Cross-regional Interconnection Lines

The Organization manages the interconnection lines according to its Operational Rules. The Organization has currently revised cross-regional interconnection utilization rules from those based on a first-come, first-served principle to being based on an "implicit auction scheme"¹³ with respect to the effective utilization of interconnection lines, security of fairness and transparency among interconnection line users, and environmental development of the energy trading market. An implicit auction scheme allocates all capabilities of the interconnection lines through the energy trading market, rather than directly allocate the position or right of utilization through auctions. The rule revision is described in Figure 2-2.

Termination of capability allocation plans and changes of timing at capability registration

Figure 2-2 describes the before-and-after introduction of the implicit auction scheme. Before introduction, the capability allocation was implemented on an accumulated first-come, first-served basis, and the resulting ATC at 10:00 on the day before was used for day-ahead spot trading in the energy market. After the introduction, virtually all the ATC was traded in the day-ahead spot market. With this arrangement, there are no capability allocation plans, with the capability being registered after the day-ahead spot market, according to the revision of cross-regional interconnection lines from a first-come, first-served basis to the implicit auction scheme.



Figure 2-2: Management of Interconnection Lines

¹³ <u>http://www.occto.or.jp/occtosystem/kansetsu_auction/kansetsu_auction_gaiyou.html</u> (in Japanese only).

2. Actual Utilization of Cross-regional Interconnection Lines

The following section records the actual utilization of cross-regional interconnection lines that were managed according to the provisions of Article 124 of the Operational Rules.

(1) Actual Utilization of Cross-regional Interconnection Lines in FY 2020

Table 2-2 and Figure 2-3 show the monthly and annual utilization of cross-regional interconnection lines for regional service areas in FY 2020.

														[Gwn]
		Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual
Hokkaido	→Tohoku (Forward)	121	207	136	65	39	28	32	48	71	157	27	18	947
- Honshu	→Hokkaido (Counter)	28	7	7	111	96	74	124	143	144	61	142	217	1,154
Tohoku-	→Tokyo (Forward)	2,580	2,761	2,992	3,357	3,881	2,473	2,525	2,202	2,395	3,217	1,653	1,361	31,396
Tokyo	→Tohoku (Counter)	20	14	30	32	34	48	25	34	76	45	106	77	541
Tokyo-	→Chubu (Forward)	5	14	60	78	129	272	203	164	225	237	64	47	1,497
Chubu	→Tokyo (Counter)	334	398	305	423	336	148	87	62	97	271	240	314	3,016
Chubu-	→Kansai (Forward)	55	72	293	135	414	238	362	373	993	949	354	176	4,413
Kansai	→Chubu (Counter)	796	1,972	1,197	2,273	1,359	1,688	1,202	586	246	432	641	892	13,285
Chubu-	→Hokuriku (Forward)	4	1	13	0	5	9	11	0	18	24	1	4	91
Hokuriku	→Chubu (Counter)	1	17	228	27	11	70	43	5	0	3	0	54	458
Hokuriku	→Kansai (Forward)	338	330	80	490	549	206	67	55	85	263	217	543	3,223
Kanasai	→Hokuriku (Counter)	8	11	18	27	14	29	61	131	234	31	50	6	620
Kansai-	→Chugoku (Forward)	55	38	38	62	38	24	26	22	50	161	37	32	584
Chugoku	→Kansai (Counter)	826	943	861	980	1,174	1,566	971	1,118	1,102	767	978	1,131	12,416
Kansai-	→Shikoku (Forward)	8	1	1	0	0	0	0	1	0	0	0	0	10
Shikoku	→Kansai (Counter)	761	589	801	904	886	983	947	945	654	283	377	494	8,623
Chugoku	→Shikoku (Forward)	13	18	29	29	15	9	15	14	29	58	7	8	245
Shikoku	→Chugoku (Counter)	108	52	100	126	117	349	273	202	31	25	42	19	1,445
Chugoku	→Kyushu (Forward)	5	4	7	17	19	18	5	8	12	50	11	20	177
Kyushu	→Chugoku (Counter)	1,091	1,217	1,098	1,123	1,520	1,464	1,260	1,264	1,532	1,288	1,403	1,604	15,864

Table 2-2: Monthly and Annual Utilization of Cross-regional Interconnection Lines for Regional Service Areas

* Based on the scheduled power flows of cross-regional interconnection lines. The values are shown before offsetting is performed.

* The values in red and blue represent the annual maximum and minimum capabilities for each line and direction, respectively.

Hokkaido-		400												
Honshu		300		207								157		217
	→Tohoku	200	121		13 <mark>6</mark>	65111	96	74	124	48	7144	_L2/ 61	142	
	Tonoku	100	28	7	7	00	39	28	32		11		27	18
	→Hokkaido	0	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Tohoku-		4,500				3 357	2 0 0 1					2 2 4 7		
Tokyo		3.000	2,580	2,761	2,992	3,337	3,001	2,473	2,525	2 202	2,395	3,217		
	→Tokyo	1 500	_	_						2,202			1,653	1,361
	TOKYO	1,500	20	14	30	32	34	48	25	34	76	45	10	⁰⁶ 77
	→Tohoku	0	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Tokyo-		500	-	200		123								
Chubu			334	398	305	423	336	272	203	164	225	237271	240	314
	→Chubu		_		60	78	129	148	87	62	97	207	240	47
		0	5	14									64	
	→Tokyo	2.000	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Chubu-Kans	ai	5,000		1,972	2	2,2	73	1.68	8					
		2,000	796		1,19	97	1,35	9	1,20	2 586	993	949	<i>C</i> A	1 892
	→Kansai	1,000	55	72	293	135	414	238	362	373	, 24	46 432	² 354	176
	→Chubu	0	Apr.	Mav	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
		250		,	- 228									
Chubu-Hoku	ıriku	200												
) II-1	100				27		70	43					54
	→Hokuriku	50	4 1	17		27	<u>11</u> 5	_9	11'5	o 5	18	24	10	4
	→Chubu	0	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
	:													
11 1 17		750					549							543
Hokuriku-Ka	nsai	750 500	338	220		490	549						217	543
Hokuriku-Ka	nsai →Kansai	750 500 250	338	330		490	549	206	67	131	234	263	217	543
Hokuriku-Ka	nsai →Kansai	750 500 250 0	338	330 11	80 ₁₈	490 27	549 14	206	67 61	131 55	234	263 31	217 50	543 6
Hokuriku-Ka	nsai →Kansai →Hokuriku	750 500 250 0	338 8 Apr.	330 11 May	⁸⁰ 18 Jun.	490 27 Jul.	549 14 Aug.	206 29 Sep.	67 61 Oct.	131 55 Nov.	234 85 Dec.	263 31 Jan.	217 50 Feb.	543 6 Mar.
Hokuriku-Ka Kansai-	nsai →Kansai →Hokuriku	750 500 250 0	338 8 Apr.	330 11 May	⁸⁰ 18 Jun.	490 27 Jul.	549 14 Aug.	206 29 Sep. 1,566	67 61 Oct.	131 55 Nov.	234 85 Dec.	¹ 263 31 Jan.	217 50 Feb.	543 6 Mar.
Hokuriku-Ka Kansai- Chugoku	nsai →Kansai →Hokuriku	750 500 250 0 2,000 1,500 1,000	338 8 Apr. 826	330 11 May 943	80 ₁₈ Jun.	490 27 Jul. 980	549 14 Aug.	206 29 Sep. 1,566	67 61 Oct. 971	131 55 Nov.	234 85 Dec. 3 1,102	263 31 Jan.	217 50 Feb. 978	543 6 Mar. 1,131
Hokuriku-Ka Kansai- Chugoku	nsai →Kansai →Hokuriku →Chugoku	750 500 250 0 2,000 1,500 1,000 500	338 8 Apr. 826	330 11 May 943	⁸⁰ 18 Jun. 861	490 27 Jul. 980	549 14 Aug.	206 29 Sep. 1,566	67 61 Oct. 971	131 55 Nov.	234 85 Dec. 3 1,102	263 31 Jan. 2 767	217 50 Feb. 978	543 6 Mar. 1,131
Hokuriku-Ka Kansai- Chugoku	nsai →Kansai →Hokuriku →Chugoku →Kansai	750 500 250 0 2,000 1,500 1,000 500 0	338 Apr. 826 55 Apr.	330 11 May 943 38 May	80 ₁₈ Jun. 861 38 Jun.	490 27 Jul. 980 62	549 14 Aug. 1,172 38 Aug.	206 Sep. 1,566 24 Sep.	67 61 Oct. 971 26 Oct.	131 55 Nov. 1,118 22 Nov.	234 85 Dec. 3 1,107 50 Dec.	263 31 Jan. 2 767 161 Jan.	217 50 Feb. 978 37 Feb.	543 6 Mar. 1,131 32 Mar.
Hokuriku-Ka Kansai- Chugoku	nsai →Kansai →Hokuriku →Chugoku →Kansai	750 500 250 0 2,000 1,500 1,000 500 0	338 8 Apr. 826 55 Apr.	330 11 May 943 38 May	80 ₁₈ Jun. 861 38 Jun.	490 27 Jul. 980 62 Jul.	549 14 Aug. 1,174 38 Aug.	206 Sep. 1,566 24 Sep.	67 61 Oct. 971 26 Oct.	131 55 Nov. 1,118 22 Nov.	234 85 Dec. 3 1,102 50 Dec.	263 Jan. 2767 161 Jan.	217 50 Feb. 978 37 Feb.	543 6 Mar. 1,131 32 Mar.
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku	→Kansai →Hokuriku →Chugoku →Kansai	750 500 250 0 2,000 1,500 1,000 500 0 1,500	338 8 Apr. 826 55 Apr.	330 11 May 943 38 May	80 ₁₈ Jun. 861 38 Jun.	490 27 Jul. 980 62 Jul. 904	549 14 Aug. 1,174 38 Aug. 886	206 29 Sep. 1,566 24 Sep. 983	67 61 Oct. 971 26 Oct. 947	131 55 Nov. 1,118 22 Nov.	234 85 Dec. 3 1,102 50 Dec.	263 31 Jan. 2767 161 Jan.	217 50 Feb. 978 37 Feb.	543 6 Mar. 1,131 32 Mar.
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku	nsai →Kansai →Hokuriku →Chugoku →Kansai	750 500 250 0 2,000 1,500 1,000 500 0 1,500 1,500 1,000	338 8 Apr. 826 55 Apr. 761	330 11 May 943 38 May	80 ₁₈ Jun. 861 38 Jun. 801	490 27 Jul. 980 62 Jul. 904	549 14 Aug. 1,174 38 Aug. 886	206 29 Sep. 1,566 4 24 Sep. 983	67 61 Oct. 971 26 Oct. 947	131 55 Nov. 1,118 22 Nov. 945	234 85 Dec. 3 1,102 50 Dec. 654	263 31 Jan. 2 767 161 Jan.	217 50 Feb. 978 37 Feb.	543 6 Mar. 1,131 32 Mar. 494
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku	INSAIL	750 500 250 0 2,000 1,500 1,000 500 0 1,500 1,000 500	338 Apr. 826 55 Apr. 761 8	330 11 May 943 38 May 589	80 ₁₈ Jun. 861 38 Jun. 801	490 27 Jul. 980 62 Jul. 904	549 14 Aug. 1,172 38 Aug. 886	206 Sep. 1,566 24 Sep. 983	67 61 Oct. 971 26 Oct. 947	131 55 Nov. 1,118 22 Nov. 945	234 85 Dec. 3 1,102 50 Dec. 654	263 Jan. 2767 161 Jan. 283	217 50 Feb. 978 37 Feb. 377	543 6 Mar. 1,131 32 Mar. 494
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku	nsai →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Kansai	750 500 250 0 2,000 1,500 1,000 500 0 1,500 1,000 500 0 0	338 8 Apr. 826 55 Apr. 761 8 Apr	330 11 May 943 38 May 589 1	80 ₁₈ Jun. 861 38 Jun. 801	490 27 Jul. 980 62 Jul. 904	549 14 Aug. 1,172 38 Aug. 886 0	206 29 Sep. 1,566 4 Sep. 983 0 Sep.	67 61 Oct. 971 26 Oct. 947 0	131 55 Nov. 1,118 22 Nov. 945 1	234 85 Dec. 3 1,107 Dec. 654 0	263 31 Jan. 2767 161 Jan. 283 0	217 50 Feb. 978 37 Feb. 377 0 Eeb	543 6 Mar. 1,131 32 Mar. 494 0 Mar
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku-	 →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Kansai 	750 500 250 0 2,000 1,500 1,000 500 0 500 0 500 0	338 8 Apr. 826 55 Apr. 761 8 Apr.	330 11 May 943 38 May 589 1 May	80 ₁₈ Jun. 861 38 Jun. 801 1 Jun.	490 27 Jul. 980 62 Jul. 904 0 Jul.	549 14 Aug. 1,174 38 Aug. 886 0 Aug.	206 Sep. 1,566 24 Sep. 983 0 Sep.	67 61 Oct. 971 26 Oct. 947 0 0 Cct.	131 55 Nov. 1,118 22 Nov. 945 1 Nov.	234 85 Dec. 3 1,102 50 Dec. 654 0 Dec.	263 Jan. 2767 161 Jan. 283 0 Jan.	217 50 Feb. 978 37 Feb. 377 0 Feb.	543 6 Mar. 1,131 32 Mar. 494 0 Mar.
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku	INSAI I→Kansai I→Hokuriku I→Chugoku I→Kansai	750 500 250 0 2,000 1,500 1,000 500 0 500 0 500 0	338 Apr. 826 55 Apr. 761 8 Apr.	330 11 May 943 38 May 589 1 May	80 ₁₈ Jun. 861 38 Jun. 801 1 Jun.	490 27 Jul. 980 62 Jul. 904 0 Jul.	549 14 Aug. 1,172 38 Aug. 886 0 Aug.	206 29 Sep. 1,566 24 Sep. 983 0 Sep. 349	67 61 Oct. 971 26 Oct. 947 0 Oct. 273	131 55 Nov. 1,118 22 Nov. 945 1 Nov.	234 85 Dec. 3 1,107 50 Dec. 654 0 Dec.	263 31 Jan. 2767 161 Jan. 283 0 Jan.	217 50 Feb. 978 37 Feb. 377 0 Feb.	543 6 Mar. 1,131 32 Mar. 494 0 Mar.
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku- Shikoku	nsai →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Shikoku	750 500 250 0 2,000 1,500 1,000 500 0 1,500 1,000 500 0	338 Apr. 826 55 Apr. 761 8 Apr. 108	330 11 May 943 38 May 589 1 May	80 ₁₈ Jun. 861 38 Jun. 801 Jun. 1 Jun.	490 27 Jul. 980 62 Jul. 904 0 Jul. 126	549 14 Aug. 1,172 38 Aug. 886 0 Aug. 0 Aug.	206 29 Sep. 1,566 369. 983 0 Sep. 349	67 61 Oct. 971 26 Oct. 947 0 Oct. 273	131 55 Nov. 1,118 22 Nov. 945 1 Nov. 202	234 85 Dec. 3 1,107 Dec. 654 0 Dec.	263 31 Jan. 2767 161 Jan. 283 0 Jan.	217 50 Feb. 978 37 Feb. 377 0 Feb. 42	543 6 Mar. 1,131 32 Mar. 494 0 Mar.
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku- Shikoku	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	750 500 250 0 2,000 1,500 1,000 500 0 500 0	338 8 Apr. 826 55 Apr. 761 8 Apr. 108 13	330 11 May 943 38 May 589 1 May 589 1 May	80 ₁₈ Jun. 861 38 Jun. 801 1 Jun. 100 29	490 27 Jul. 980 62 Jul. 904 0 Jul. 126 29	549 14 Aug. 1,174 38 Aug. 886 0 Aug. 117 15	206 29 Sep. 1,566 24 Sep. 983 0 Sep. 0 Sep. 349 9	67 61 Oct. 971 26 Oct. 947 0 Ct. 273 15	131 55 Nov. 1,118 22 Nov. 945 1 Nov. 202 14	234 85 Dec. 3 1,107 50 Dec. 654 0 Dec. 29 ³¹	263 31 Jan. 2767 161 Jan. 283 0 Jan. 58 25	217 50 Feb. 978 37 Feb. 377 0 Feb. 377 0 Feb.	543 6 Mar. 1,131 32 Mar. 494 0 Mar. 819
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku- Shikoku	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	750 500 250 0 2,000 1,500 1,000 500 0 500 0 0	338 Apr. 826 55 Apr. 761 8 4pr. 108 13 Apr.	330 11 May 943 38 May 589 1 May	80 ₁₈ Jun. 861 38 Jun. 801 Jun. 100 29 Jun.	490 27 Jul. 980 62 Jul. 904 0 Jul. 126 29 Jul.	549 14 Aug. 1,172 38 Aug. 886 0 Aug. 117 15 Aug.	206 29 Sep. 1,566 24 Sep. 983 0 Sep. 349 9 9 Sep.	67 61 Oct. 971 26 Oct. 947 0 Oct. 273 15 Oct.	131 55 Nov. 1,118 22 Nov. 945 1 Nov. 202 14 Nov.	234 85 Dec. 3 1,100 50 Dec. 0 Dec. 29 1 Dec.	263 31 Jan. 2767 161 Jan. 283 0 Jan. 58 25 Jan.	217 50 Feb. 978 37 Feb. 377 0 Feb. 7 42 7 Feb.	543 6 Mar. 1,131 32 Mar. 494 0 Mar. 819 Mar.
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku- Shikoku	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	750 500 250 0 1,500 1,500 1,000 500 0 1,500 1,000 500 0 2,000	338 Apr. 826 55 Apr. 761 8 Apr. 108 13 Apr.	330 11 May 943 38 May 589 1 May 52 18 May	80 ₁₈ Jun. 861 38 Jun. 801 1 Jun. 100 29 Jun.	490 27 Jul. 980 62 Jul. 904 0 Jul. 126 29 Jul.	549 14 Aug. 1,172 38 Aug. 886 0 Aug. 117 15 Aug.	206 29 Sep. 1,566 369 983 0 Sep. 349 9 Sep. 0 1.46	67 61 Oct. 971 26 Oct. 947 0 Oct. 273 15 Oct.	131 55 Nov. 1,118 22 Nov. 945 1 Nov. 202 14 Nov.	234 85 Dec. 3 1,107 50 Dec. 654 0 Dec. 29 1.53	263 31 Jan. 2767 161 Jan. 283 0 Jan. 5825 Jan.	217 50 Feb. 978 37 Feb. 377 0 Feb. 7 2 Feb. 2 142 7 5 5 5 5 5 5 5 5 5 5 5 5 5	543 6 Mar. 1,131 32 Mar. 494 0 Mar. 819 Mar.
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku- Shikoku Chugoku- Kyushu	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	750 500 250 0 2,000 1,500 1,000 500 0 500 0 2,000 1,000 500 0 1,000 500 0 1,000 500 0 1,000	338 Apr. 826 55 Apr. 761 8 Apr. 108 13 Apr. 1,091	330 11 May 943 38 May 589 1 May 52 18 May 1,21	80 ₁₈ Jun. 861 38 Jun. 801 1 Jun. 100 29 Jun. 7 1,09	490 27 Jul. 980 62 Jul. 904 0 Jul. 126 29 Jul. 8 1,12	549 14 Aug. 1,174 38 Aug. 886 0 Aug. 117 15 Aug. 1,52 3	206 29 Sep. 1,566 36p. 983 0 Sep. 349 9 9 Sep. 0 1,46	67 61 Oct. 971 26 Oct. 947 0 Cot. 273 15 Oct. 4 1,26	131 55 Nov. 1,118 22 Nov. 945 1 Nov. 202 14 Nov. 202 14 Nov. 202 14	234 85 Dec. 3 1,102 50 Dec. 0 Dec. 29 ³¹ Dec. 4 1,53	263 31 Jan. 2767 161 Jan. 283 0 Jan. 58 25 Jan. 32 1,28	217 50 Feb. 978 37 Feb. 377 0 Feb. 7 42 7 Feb. 8 1,40	543 6 Mar. 1,131 32 Mar. 494 0 Mar. 819 Mar. 3 1,604
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku- Shikoku Chugoku- Kyushu	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	750 500 250 0 2,000 1,500 1,000 500 0 500 0 500 0 2,000 1,000	338 Apr. 826 55 Apr. 761 8 Apr. 108 13 Apr. 1,091 5	330 11 May 943 38 May 589 1 May 52 18 May 1,21	80 ₁₈ Jun. 861 38 Jun. 1 1 Jun. 100 29 Jun. 7 1,09 7	490 27 Jul. 980 62 Jul. 904 0 Jul. 126 29 Jul. 8 1,12 17	549 14 Aug. 1,172 38 Aug. 886 0 Aug. 117 15 Aug. 1,52 3 19	206 29 Sep. 1,566 24 Sep. 983 0 Sep. 349 9 Sep. 0 1,46 Sep.	67 61 Oct. 971 26 Oct. 947 0 Oct. 273 15 Oct. 4 1,26	131 55 Nov. 1,118 22 Nov. 945 1 Nov. 202 14 Nov. 202 14 Nov. 202 14 Nov.	234 85 Dec. 3 1,107 50 Dec. 0 Dec. 29 ³¹ Dec. 4 1,53 4 1,53	263 31 Jan. 2767 161 Jan. 283 0 Jan. 58 25 Jan. 32 1,28	217 50 Feb. 978 37 Feb. 377 0 Feb. 7 Feb. 8 1,40 11	543 6 Mar. 1,131 32 Mar. 494 0 Mar. 819 Mar. 3 1,604 20
Hokuriku-Ka Kansai- Chugoku Kansai- Shikoku Chugoku- Shikoku Chugoku- Kyushu	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	750 500 250 0 2,000 1,500 1,000 500 0 500 0 2,000 1,000 500 0 2,000 1,000 0 0	338 8 Apr. 826 55 Apr. 761 8 Apr. 108 13 Apr. 1,091 5	330 11 May 943 38 May 1 May 52 18 May 1,21 4	8018 Jun. 861 38 Jun. 801 1 Jun. 100 29 Jun. 7 1,09 7	490 27 Jul. 980 62 Jul. 904 0 Jul. 126 29 Jul. 8 1,12 17	549 14 Aug. 38 Aug. 886 0 Aug. 117 15 Aug. 1,52 3 19	206 29 Sep. 1,566 24 Sep. 983 0 Sep. 349 9 9 Sep. 0 1,466 18	67 61 Oct. 971 26 Oct. 947 0 Cot. 273 15 Oct. 4 1,26 5	131 55 Nov. 1,118 22 Nov. 945 1 Nov. 202 14 Nov. 202 14 Nov. 202 14 Nov.	234 85 Dec. 3 1,107 50 Dec. 0 Dec. 29 ³¹ Dec. 4 1,53 12	263 31 Jan. 2767 161 Jan. 283 0 Jan. 58 25 Jan. 32 1,28 50	217 50 Feb. 978 37 Feb. 377 0 Feb. 7 42 Feb. 8 1,40 11	543 6 Mar. 1,131 32 Mar. 494 0 Mar. 819 Mar. 3 1,604 20

Figure 2-3: Monthly Utilization of Cross-regional Interconnection Lines for Regional Service Areas

(2) Actual Utilization of Cross-regional Interconnection Lines from FY 2011 to FY 2020

Table 2-3 and Figure 2-4 show the annual utilization of cross-regional interconnection lines for regional service areas from FY 2011 to FY 2020.

											[GWh]
		FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Hokkaido-	→Tohoku (Forward)	3,925	214	182	143	146	237	340	130	279	947
Honshu	→Hokkaido (Counter)	7	673	505	617	804	1,033	1,270	1,005	2,117	1,154
Tohoku-	→Tokyo (Forward)	9,454	16,084	22,450	21,273	22,587	23,097	28,238	27,298	27,575	31,396
Tokyo	→Tohoku (Counter)	5,674	4,520	3,891	4,029	3,714	4,660	7,071	3,139	252	541
Tokyo-	→Chubu (Forward)	1,151	1,579	2,829	2,702	693	2,729	3,954	1,711	354	1,497
Chubu	→Tokyo (Counter)	2,426	1,288	536	2,755	4,513	5,144	5,328	5,116	4,147	3,016
Chubu-	→Kansai (Forward)	3,734	7,487	7,049	7,131	3,412	5,538	8,106	3,675	980	4,413
Kansai	→Chubu (Counter)	8,403	5,726	4,928	6,342	7,577	6,544	9,889	9,980	7,175	13,285
Chubu-	→Hokuriku (Forward)	169	452	170	231	108	241	353	134	7	91
Hokuriku	→Chubu (Counter)	130	183	310	296	172	59	108	76	40	458
Hokuriku-	→Kansai (Forward)	1,127	1,590	1,406	2,265	2,047	2,033	2,949	2,033	2,918	3,223
Kanasai	→Hokuriku (Counter)	730	464	587	491	502	640	1,260	2,540	547	620
Kansai-	→Chugoku (Forward)	1,483	2,836	2,326	2,252	948	716	4,493	4,734	578	584
Chugoku	→Kansai (Counter)	10,520	6,788	5,468	5,994	9,138	13,179	16,727	13,388	9,793	12,416
Kansai-	→Shikoku (Forward)	0	208	0	1	2	2	1	82	31	10
Shikoku	→Kansai (Counter)	9,810	8,938	9,073	9,362	9,611	8,856	9,510	8,840	9,956	8,623
Chugoku-	→Shikoku (Forward)	3,475	3,575	3,583	2,677	3,423	3,294	4,061	2,579	131	245
Shikoku	→Chugoku (Counter)	6,727	3,564	3,694	3,912	4,631	7,638	7,540	4,023	4,143	1,445
Chugoku-	→Kyushu (Forward)	2,582	4,210	3,838	3,596	2,174	1,935	3,014	1,998	138	177
Kyushu	→Chugoku (Counter)	13,905	13,596	13,847	11,218	14,947	15,476	18,183	18,280	16,311	15,864

Table 2-3 Annual Utilization of Cross-regional Interconnection Lines for Regional Service Areas(FY 2011 to FY 2020)

* Based on the scheduled power flows of cross-regional interconnection lines

* The values in red and blue represent the annual maximum and the minimum capabilities in each line and direction between FY 2011 and FY 2020, respectively.

Hokkaido-		4,500	3,925									
Honshu		3,000		673	FOF	617	804	1 033	1,270	1.005	2,117	0 47 1 154
	→Tohoku	1,500	- 7	214 0/3	182	143	146	237	340	130	279	9471,134
	→Habbaida	0	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
m 1 1	TIORAIGO											
Tohoku- Tokyo		40,000							28,238	27,298	27.575	31 <u>,39</u> 6
1011/0	→Tolan	20,000	9.454 5 674	16,084	22,450	21,273	22,587	23,097	7,071	2 130		
	TOKYU	10,000 0	<u>-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	4,520	, 5,651	4,029		4,660		3,135	252	541
	→Tohoku		FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Tokyo-		6,000					4 5 1 2	5 1//	5,328	5 116		
Chubu		4,000		1.20	2,829	2 702 2 70	4,515	3,144	3,954		4,147	3,016
	→Chubu	2,000	1,151 2,426	1,579 1,288	526	2,702 2,75	5 2 (02	2,729		1,711		1,497
	→Tolan	0			530		693				354	
	· TOKYO		FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Chubu-Kansa	i	15,000	0 102	7.487	7 0/9	7 1 2 1	7 577	6 544	9,889	9,980	7 175	13,285
	→Vanaai	10,000	3 734	5,726	4,928	6,342	3,412 5	.538	8,106 /	3,675	980	4,41 <mark>3</mark>
	· Kali sa i	5,000									\mathbf{X}	
	→Chubu	Ū	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Chubu-Hokur	riku	1,000										
				452	24.0				252	42.4		458
	→Hokunku		169 ₁₃₀	183	170310	231296	108172	241 59	108	134 76	7 40	91
	→Chubu	0	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
	1											
Halandan Kar	i	4 000	`									
Hokuriku-Kar	ısai	4,000	1,127	1.590	1 406	2,265	2,047	2,033	2,949	2,033 2,54	.0 2,918	3,223
Hokuriku-Kar	ısai →Kansai	4,000 2,000)	1,590 30 464	1,406	2,265	2,047	2,033 640	2,949	0 ^{2,033} 2,54	.0 2,918 547	3,223 620
Hokuriku-Kar	ısai →Kansai →Hokuriku	4,000 2,000) 1,127) FY 2011	1,590 30 464 FY 2012	1,406 587 FY 2013	2,265 491 FY 2014	2,047 502 FY 2015	2,033 640 FY 2016	2,949 1,260 FY 2017	2,033 2,54	0 2,918 547 FY 2019	3,223 620 FY 2020
Hokuriku-Kar Kansai-	nsai →Kansai →Hokunku	4,000 2,000 0) 1,127 , FY 2011	1,590 30 464 FY 2012	1.406 587 FY 2013	2,265 491 FY 2014	2,047 502 FY 2015	2,033 640 FY 2016	2,949 1,26 FY 2017 16,727	0 ^{2,033} 2,54 FY 2018	0 2,918 547 FY 2019	3,223 620 FY 2020
Hokuriku-Kan Kansai- Chugoku	→Kansai →Hokuriku	4,000 2,000 0 20,000 15,000) 1,127 1,127 FY 2011 10,520	1,590 30 464 FY 2012	1,406 587 FY 2013	2,265 491 FY 2014	2,047 502 FY 2015 9,138	2,033 640 FY 2016 13,179	2,949 1,26 FY 2017 16,727	2,033 2,54 FY 2018	2,918 547 FY 2019 9,793	3,223 620 FY 2020 12,416
Hokuriku-Kan Kansai- Chug oku	→Kansai →Hokuńku →Hokuńku	4,000 2,000 20,000 15,000 10,000 5,000) 1,127 FY 2011 10,520 1,483	1,590 30 464 FY 2012 6.788 2.836	1,406 587 FY 2013 5,468 2,326 /	2,265 491 FY 2014 5,994 2,252 /	2,047 502 FY 2015 9,138 / 948	2,033 640 FY 2016 13,179	2,949 1,260 FY 2017 16,727 4,493	2,033 2,54 FY 2018 13,388	0 2,918 547 FY 2019 9,793	3,223 620 FY 2020 12,416
Hokuriku-Kan Kansai- Chug oku	→Kansai →Hokunku →Hokunku	4,000 2,000 0 20,000 15,000 10,000 5,000 0	1,127 1,127 FY 2011 10,520 1,483 FY 2011	1,590 30 464 FY 2012 6,788 2.836 FV 2012	1,406 587 FY 2013 5,468 2,326 /	2,265 491 FY 2014 5,994 2,252 /	2,047 502 FY 2015 9,138 / 948	2,033 640 FY 2016 13,179 716	2,949 1,26 FY 2017 16,727 4,493	FY 2018	0 2,918 547 FY 2019 9,793	3,223 620 FY 2020 12,416 584
Hokuriku-Kar Kansai- Chug oku	→Kansai →Hokuriku →Chugoku →Kansai	4,000 2,000 20,000 15,000 10,000 5,000 0) 1,127 FY 2011 10,520 1,483 FY 2011	1,590 30 464 FY 2012 6,788 2,836 FY 2012	1,406 587 FY 2013 5,468 2,326 / FY 2013	2,265 491 FY 2014 5,994 2,252 FY 2014	2,047 502 FY 2015 9,138 (948 FY 2015	2,033 640 FY 2016 13,179 716 FY 2016	2,949 FY 2017 16,727 4,493 FY 2017	2,033 2,54 FY 2018 13,388 4,734 FY 2018	0 2,918 547 FY 2019 9,793 578 FY 2019	3,223 620 FY 2020 12,416 584 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shikoku	→Kansai →Hokuriku →Chugoku →Kansai	4,000 2,000 15,000 10,000 5,000 0 15,000	1,127 FY 2011 10,520 1,483 FY 2011 9,810	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938	1,406 587 FY 2013 5,468 2,326 FY 2013 9,073	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362	2,047 502 FY 2015 9,138 / 948 FY 2015 9,611	2,033 640 FY 2016 13,179 716 FY 2016 8,856	2,949 FY 2017 16,727 4,493 FY 2017 9,510	FY 2018 FY 2018 FY 2018 FY 2018 FY 2018 FY 2018	0 2,918 547 FY 2019 9,993 FY 2019 FY 2019 9,956	3,223 620 FY 2020 12,416 584 FY 2020
Hokuriku-Kar Kansai Chugoku Kansai Shikoku	→Kansai →Hokuriku →Chugoku →Kansai	4,000 2,000 15,000 10,000 5,000 0 15,000 10,000) 1,127 FY 2011 10,520 1,483 FY 2011 9,810	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938	1,406 587 FY 2013 5,468 2,326 / FY 2013 9,073	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362	2,047 502 FY 2015 9,138 / 948 J FY 2015 9,611	2,033 640 FY 2016 13,179 716 FY 2016 8,856	2,949 FY 2017 16,727 4,493 FY 2017 9,510	2,033 2,54 FY 2018 13,388 4,734 FY 2018 FY 2018	0 2,918 547 FY 2019 578 FY 2019 9,956	3,223 620 FY 2020 12,416 584 FY 2020 8,623
Hokuriku-Kar Kansai- Chug oku Kansai- Shikoku	sai →Kansai →Hokuriku →Chugoku →Kansai →Shikoku	4,000 2,000 15,000 10,000 5,000 10,000 5,000 0	1,127 FY 2011 1,483 FY 2011 9,810 0	1,590 30 464 FY 2012 6,788 2.836 FY 2012 8,938 2,08	1,406 587 FY 2013 5,468 2,326 FY 2013 9,073 0	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362 1	2,047 502 FY 2015 9,138 / 948 FY 2015 9,611 2	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2	2,949 FY 2017 16,727 4,493 FY 2017 9,510	FY 2018 FY 2018 4,734 FY 2018 FY 2018 8,840 82	0 2,918 547 FY 2019 9,793 1 578 FY 2019 9,956 31	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10
Hokuriku-Kar Kansai Chug oku Kansai Shikoku	sai →Kansai →Hokuriku →Chugoku →Kansai	4,000 2,000 15,000 10,000 5,000 0 15,000 10,000 5,000 0	1,127 FY 2011 10,520 1,483 FY 2011 9,810 0 FY 2011	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938 208 FY 2012	1,406 587 FY 2013 5,468 2,326 / FY 2013 9,073 0 FY 2013	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362 1 FY 2014	2,047 502 FY 2015 9,138 / 948 1 FY 2015 9,611 2 FY 2015	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 FY 2016	2,949 FY 2017 16,727 4,493 FY 2017 9,510 1 FY 2017	2,033 2,54 FY 2018 13,388 4,734 FY 2018 8,840 82 FY 2018	0 2,918 547 FY 2019 9,793 FY 2019 9,956 31 FY 2019	3,223 620 FY 2020 12,416 FY 2020 8,623 10 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shiko ku	isai →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Kansai	4,000 2,000 15,000 10,000 5,000 10,000 5,000 0 9,000	1,127 FY 2011 10,520 1,483 FY 2011 9,810 0 FY 2011	1,590 30 464 FY 2012 6,788 2.836 FY 2012 8,938 208 FY 2012	1,406 587 FY 2013 5,468 2,326 FY 2013 9,073 9,073 0 FY 2013	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362 1 FY 2014	2,047 502 FY 2015 9,138 / 948 FY 2015 9,611 9,611 2 FY 2015	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 FY 2016 FY 2016 7,638	2,949 FY 2017 16,727 4,493 FY 2017 9,510 1 FY 2017 FY 2017 7,540	6,2,033 2,54 FY 2018 13,388 4,734 FY 2018 8,840 8,840 82 FY 2018	2,918 547 FY 2019 9,793 9,793 1 578 FY 2019 9,956 31 FY 2019	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shikoku Chug oku- Shikoku	isai →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Kansai	4,000 2,000 15,000 10,000 5,000 10,000 5,000 0 9,000 6,000	1,127 FY 2011 10,520 1,483 1,483 FY 2011 9,810 0 FY 2011 6,727	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938 208 FY 2012 8,938 208 FY 2012	1,406 587 FY 2013 5,468 2,326 / FY 2013 9,073 0 FY 2013 FY 2013	2,265 491 FY 2014 2,252 / FY 2014 9,362 9,362 1 FY 2014 FY 2014	2,047 502 FY 2015 9,138 (948 FY 2015 9,611 2 FY 2015 FY 2015	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 FY 2016 FY 2016 7,638	2,949 FY 2017 16,727 4,493 FY 2017 9,510 9,510 FY 2017 FY 2017 7,540 4,051	FY 2018 FY 2018 4,734 FY 2018 FY 2018 8,840 FY 2018 FY 2018 FY 2018	0 2,918 547 FY 2019 9,956 31 FY 2019 9,956 578 FY 2019 FY 2019	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shikoku Chug oku- Shikoku	→Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Shikoku	4,000 2,000 15,000 10,000 5,000 10,000 5,000 0 10,000 5,000 0 9,000 6,000 3,000	1,127 1,127 FY 2011 10,520 1,483 FY 2011 9,810 9,810 0 FY 2011 6,727 3,475	1,590 30 464 FY 2012 6,788 2.836 FY 2012 8,938 208 FY 2012 3,564 3,575 /	1,406 587 FY 2013 5,468 2,326 FY 2013 9,073 9,073 0 FY 2013 FY 2013 5,468 3,583 3,583	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362 9,362 1 FY 2014 3,912 2,677	2,047 502 FY 2015 9,138 / 948 FY 2015 9,611 9,611 2 FY 2015 FY 2015 4,631 3,423	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 FY 2016 FY 2016 7,638 3,294	2,949 FY 2017 16,727 4,493 FY 2017 9,510 9,510 FY 2017 FY 2017 7,540 4,061	2,033 2,54 FY 2018 13,388 4,734 FY 2018 8,840 8,840 82 FY 2018 FY 2018	2,918 547 FY 2019 9,793 9,793 FY 2019 9,956 31 FY 2019 FY 2019 FY 2019 23 4,143	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020 FY 2020
Hokuriku-Kar Kansai Chug oku Kansai Shiko ku Chug oku- Shiko ku	sai →Kansai →Hokuriku →Chugoku →Chugoku →Shikoku →Kansai	4,000 2,000 15,000 10,000 5,000 10,000 5,000 0 15,000 0 9,000 6,000 3,000 0	1,127 FY 2011 10,520 1,483 FY 2011 9,810 0 FY 2011 6,727 3,475 FY 2011	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938 208 FY 2012 3,564 3,575 / FY 2012	1,406 587 FY 2013 2,326 / FY 2013 9,073 9,073 0 FY 2013 FY 2013 FY 2013	2,265 491 FY 2014 2,252 / FY 2014 9,362 9,362 9,362 1 FY 2014 3,912 2,677 2,677	2,047 502 FY 2015 9,138 (948 FY 2015 9,611 9,611 2 FY 2015 4,631 3,423 3,423	2,033 640 FY 2016 13,179 716 FY 2016 7,638 3,294 FY 2016	2,949 FY 2017 16,727 4,493 FY 2017 9,510 9,510 FY 2017 FY 2017 7,540 4,061	2,033 2,54 FY 2018 13,388 4,734 FY 2018 8,840 82 FY 2018 FY 2018 4,07 2,579 FY 2018	0 2,918 547 FY 2019 9,956 31 FY 2019 9,956 31 FY 2019 23 4,143 131 FY 2019	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shiko ku Chug oku- Shiko ku	sai →Kansai →Hokuńku →Chugoku →Kansai →Shikoku →Shikoku →Chugoku	4,000 2,000 15,000 10,000 5,000 0 15,000 0 10,000 5,000 0 9,000 6,000 3,000 0	1,127 FY 2011 10,520 1,483 FY 2011 9,810 9,810 0 FY 2011 6,727 3,475 FY 2011	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938 208 FY 2012 3,564 3,575 / FY 2012	1,406 587 FY 2013 5,468 2,326 FY 2013 9,073 9,073 0 FY 2013 FY 2013 3,583 3,694 FY 2013	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362 9,362 1 FY 2014 3,912 2,677 FY 2014	2,047 502 FY 2015 9,138 / 948 FY 2015 FY 2015 FY 2015 FY 2015 FY 2015 FY 2015	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 FY 2016 7,638 3,294 FY 2016	2,949 FY 2017 16,727 4,493 FY 2017 9,510 9,510 FY 2017 FY 2017 FY 2017 FY 2017	2,033 2,54 FY 2018 13,388 4,734 FY 2018 8,840 8,840 8,840 82 FY 2018 FY 2018 FY 2018 FY 2018	2,918 547 FY 2019 9,793 9,793 FY 2019 9,956 31 FY 2019 23 4,143 131 FY 2019	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shiko ku Chug oku- Shiko ku Chug oku- Kyushu	isai →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Shikoku →Chugoku	4,000 2,000 15,000 10,000 5,000 10,000 5,000 0 10,000 5,000 0 9,000 6,000 3,000 0	1,127 FY 2011 10,520 1,483 1,483 FY 2011 9,810 0 FY 2011 6,727 3,475 FY 2011 13,905	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938 208 FY 2012 3,5564 3,575 / FY 2012 7,564 3,575 / FY 2012	1,406 587 FY 2013 5,468 2,326 / FY 2013 9,073 9,073 0 FY 2013 5,468 2,326 / FY 2013 3,583 3,583 3,583 3,584 FY 2013	2,265 491 FY 2014 2,252 / FY 2014 9,362 9,362 9,362 9,362 1 FY 2014 3,912 2,677 FY 2014	2,047 502 FY 2015 9,138 / 948 FY 2015 9,611 9,611 2 FY 2015 FY 2015 4,631 3,423 FY 2015	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 FY 2016 7,638 3,294 FY 2016	2,949 FY 2017 16,727 4,493 FY 2017 9,510 9,510 1 FY 2017 7,540 4,061 FY 2017 7,540 4,061 FY 2017	FY 2018 FY 2018 4,734 FY 2018 FY 2018 8,840 82 FY 2018 FY 2018 4,02 2,579 FY 2018 FY 2018	0 2,918 547 FY 2019 9,995 FY 2019 9,956 31 FY 2019 23 4,143 FY 2019 16,311	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020 FY 2020 1,445 245 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shiko ku Chug oku- Shiko ku Chug oku- Kyus hu	 →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Kansai →Shikoku →Chugoku →Chugoku 	4,000 2,000 15,000 10,000 5,000 10,000 5,000 10,000 5,000 0 9,000 6,000 3,000 0 20,000	1,127 FY 2011 10,520 1,483 FY 2011 9,810 0 FY 2011 6,727 3,475 FY 2011 13,905 2,55	1,590 30 464 FY 2012 6,788 2.836 FY 2012 8,938 208 FY 2012 3,564 3,575 / FY 2012 13,596	1,406 587 FY 2013 5,468 2,326 / FY 2013 9,073 9,073 0 FY 2013 FY 2013 5,583 3,583 3,694 FY 2013	2,265 491 FY 2014 5,994 2,252 / FY 2014 9,362 9,362 1 FY 2014 3,912 2,677 FY 2014 FY 2014	2,047 502 FY 2015 9,138 / 948 FY 2015 9,611 9,611 2 FY 2015 FY 2015 FY 2015 FY 2015	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 FY 2016 7,638 3,294 FY 2016 FY 2016	2,949 FY 2017 16,727 4,493 FY 2017 9,510 9,510 FY 2017 FY 2017 7,540 4,061 FY 2017 18,183	FY 2018 FY 2018	0 2,918 547 FY 2019 9,956 31 FY 2019 9,956 31 FY 2019 23 4,143 131 FY 2019 16,311	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020 FY 2020 1,445 245 FY 2020
Hokuriku-Kar Kansai- Chug oku Kansai- Shiko ku Chug oku- Shiko ku Chug oku- Kyus hu	 →Kansai →Hokuriku →Chugoku →Kansai →Shikoku →Shikoku →Shikoku →Chugoku →Chugoku →Chugoku 	4,000 2,000 15,000 10,000 5,000 10,000 5,000 0 10,000 6,000 3,000 0 20,000	1,127 1,127 FY 2011 1,483 1,483 FY 2011 9,810 0 FY 2011 6,727 3,475 FY 2011 13,905 2,582 4,4	1,590 30 464 FY 2012 6,788 2,836 FY 2012 8,938 208 FY 2012 3,564 3,575 / FY 2012 13,596 210	1,406 587 FY 2013 5,468 2,326 / FY 2013 9,073 9,073 9,073 9,073 7 FY 2013 5,468 1,3694 1,3,694 1,3,694 1,3,847 3,838	2,265 491 FY 2014 2,252 / FY 2014 9,362 9,362 9,362 9,362 9,362 9,362 1 2,677 FY 2014 5,677 5,994 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	2,047 502 FY 2015 9,138 / 948 FY 2015 FY 2015 FY 2015 FY 2015 FY 2015 FY 2015 FY 2015 C 14,947 2,174	2,033 640 FY 2016 13,179 716 FY 2016 8,856 2 8,856 7,638 3,294 FY 2016 FY 2016 15,476 1,935	2,949 FY 2017 16,727 4,493 FY 2017 9,510 9,510 FY 2017 7,540 4,061 FY 2017 7,540 4,061 FY 2017 18,183	FY 2018 FY 2018 4,734 FY 2018 FY 2018 8,840 82 FY 2018 FY 2018 FY 2018 FY 2018 FY 2018 18,280 1,998	2,918 547 FY 2019 9,995 FY 2019 9,956 31 FY 2019 23 4,143 FY 2019 16,311 138	3,223 620 FY 2020 12,416 584 FY 2020 8,623 10 FY 2020 1,445 245 FY 2020 15,864 177

Figure 2-4: Annual Utilization of Cross-regional Interconnection Lines for Regional Service Areas (FY 2011 to FY 2020)

(3) Monthly Utilization of Cross-regional Interconnection Lines by Transaction in FY 2020

Table 2-4 shows the monthly and annual utilization of cross-regional interconnection lines by transaction in FY 2020.

													[0mi]
	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual
Bilateral	40	79	18	19	7	20	11	2	112	757	27	9	1,103
Day-ahead	6,798	8,017	7,301	9,389	9,921	8,695	7,812	6,977	7,116	6,820	5,858	6,525	91,229
1 Hour-ahead	318	571	975	850	707	982	416	397	767	744	464	483	7,675

Table 2-4: Monthly and Annual Utilization of Cross-regional Interconnection Lines by Transaction

[GWh]

* The values in red and blue represent the annual maximum and minimum capability, respectively.

* The implicit auction scheme was introduced in October 2018.

(4) Annual Utilization of Cross-regional Interconnection Lines by Transaction from FY 2011 to FY 2020 Table 2-5 and Figures 2-5, 2-6, and 2-7 show the annual utilization of cross-regional interconnection lines by transaction for FY 2011 to FY 2020.

Table 2-5: Annual Utilization of Cross-regional Interconnection Lines by Transaction (FY 2011 to FY 2020)

											[Gwn]
		FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
	Bilateral	79,693	76,328	73,289	71,558	75,947	84,843	109,842	56,710	255	1,103
	Day-ahead	5,718	7,155	11,632	14,174	13,152	14,817	18,350	51,120	83,216	91,229
ſ	1 Hour-ahead	22	493	1,750	1,554	2,050	3,392	4,203	2,932	4,000	7,675

* "Hour-ahead" refers to a transaction that is four hours ahead of the gate closure in FY 2015. From FY 2016, it refers to a transaction that is one hour ahead of the gate closure.





Figure 2-6: Annual Utilization of Cross-regional Interconnection Lines by Day-ahead Transaction (FY 2011 to FY 2020)



Figure 2-7: Annual Utilization of Cross-regional Interconnection Lines by Hour-ahead Transaction (FY 2011 to FY 2020)

3. Status of Maintenance Work on Cross-regional Interconnection Lines

The following describes details of the actual maintenance work on cross-regional interconnection lines, as reported by the GT&D companies in accordance with the provisions of Article 167 of the Operational Rules.

(1) Actual Monthly Maintenance Work on Cross-regional Interconnection Lines in FY 2020

Table 2-6 shows the monthly and annual maintenance works on cross-regional interconnection lines in FY 2020, and Figure 2-8 shows the nationwide monthly planned outage rate for FY 2020.

	- J														6	2											
		A	pr.	Μ	ay	Ju	ın.	Ju	ul.	Αι	ıg.	Se	ep.	0	ct.	No	ov.	De	ec.	Ja	in.	Fe	b.	М	ar.	Anr	nual
Interconnection	Corresponding Facilities	Nos.	Days																								
Hokkaido- Honshu	Hokkaido and Honshu HVDC Link, New Hokkaido and Honshu HVDC Link	12	30	7	31	32	30	0	0	14	18	12	11	3	1	0	0	0	0	0	0	0	0	0	0	80	121
Tohoku-Tokyo	Soma-Futaba bulk line, Iwaki bulk line	0	0	0	0	0	0	0	0	0	0	0	0	7	4	0	0	0	0	0	0	0	0	0	0	7	4
	Sakuma FC C.S.	5	2	0	0	0	0	0	0	0	0	1	7	0	0	0	0	1	1	0	0	1	1	0	0	8	11
Tokyo-Chubu	Shin Shinano FC C.S.	0	0	8	4	11	15	0	0	0	0	4	4	11	9	22	21	13	12	8	8	13	10	9	6	99	89
	Higashi Shimizu FC C.S.	1	1	0	0	0	0	2	2	0	0	2	5	4	8	0	0	0	0	0	0	0	0	1	1	10	17
Chubu-Kansai	Mie-Higashi Omi line	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	8	3
Chubu-Hokuriku	Minami Fukumitsu HVDC BTB C.S., Minami Fukumitsu Substation	0	0	0	0	2	23	0	0	0	0	9	14	15	28	14	14	12	12	0	0	10	9	6	4	68	104
Hokuriku-Kansai	Echizen-Reinan line	0	0	0	0	4	22	0	0	0	0	5	8	6	9	2	1	0	0	0	0	0	0	2	2	19	42
Kansai-Chugoku	Seiban-Higashi Okayama line, Yamazaki-Chizu line	14	7	5	7	1	1	0	0	0	0	5	8	0	0	0	0	0	0	0	0	0	0	1	31	26	54
Kansai-Shikoku	Kihoku and Anan AC/DC C.S.	2	7	5	4	8	5	0	0	0	0	0	0	2	2	0	0	0	0	0	0	7	10	0	0	24	28
Chugoku- Shikoku	Honshi interconnection line	2	1	12	26	2	6	0	0	0	0	0	0	1	1	0	0	0	0	1	2	0	0	0	0	18	36
Chugoku-Kyushu	Kanmon interconnection line	8	12	9	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	18	25
Nationwide (Cumulative	works for the same facilities deducted)	44	60	46	84	64	103	2	2	14	18	38	57	49	62	38	36	26	25	9	10	32	31	23	46	385	534

Table 2-6: Monthly and Annual Maintenance Works on Cross-regional Interconnection Lines



Figure 2-8: Nationwide Monthly Planned Outage Rate

* Monthly Planned Outage Rate (%) =
$$\frac{\text{Total days of planned outage in the month}}{10 \text{ interconnection lines } \times \text{ calendar days}}$$

(2) Annual Maintenance Works on Cross-regional Interconnection Lines from FY 2011 to FY 2020

Table 2-7 shows the annual maintenance works on cross-regional interconnection lines for FY 2011 to FY 2020.

The annual maintenance work on cross-regional interconnection lines for FY 2020 occurred on 385 occasions, the highest annual total for the past ten years. This significant increase was attributable to increases at the facilities of Shin Shinano FC, Minami Fukumitsu BTB Converter Station, and Minami Fukumitsu Substation.

Table 2-7: Annual Maintenance Work on Cross-regional Interconnection Lines (FY 2011 to FY 2020)

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Total	10-years Average
Number	56	58	38	63	91	218	267	205	353	385	1,734	173

* The significant increase from FY 2015 to FY 2016 is attributable to the introduction of the Cross-regional Operation System, which made detailed data management available.

4. Forced Outage of Cross-regional Interconnection Lines

(1) Forced Outage of Cross-regional Interconnection Lines in FY 2020

Table 2-8 shows the forced outage of cross-regional interconnection lines in FY 2020.

	ε	6		
Date	Facility	Background		
April 7	Kiboku and Anan AC/DC C S	Trip by Water leakage of cooling system for Group 1		
		valves at Anan Converter Station		
July 26	Higashi Shimizu FC	Secondary accident of network		
July 28	Shin Shinano FC units No.1 & No.2	Secondary accident of network		
August 22	Shin Shinano FC unit No.2	Secondary accident of network		
September 3	Sakuma FC	Secondary accident of network		
September 3	Higashi Shimizu FC	Secondary accident of network		
September 19	Shin Shinano FC unit No.2	Secondary accident of network		
March 2	Shin Shinano FC unit No.1	Unknown		

Table 2-8: Forced Outage of Cross-regional Interconnection Lines

* The forced outage affecting the TTC is described.

Two additional accidents which affected the transfer capability also occurred.¹⁴

(2) Annual Forced Outage of Cross-regional Interconnection Lines for FY 2011 to FY 2020

Table 2-9 shows the annual forced outage of cross-regional interconnection lines for FY 2011 to FY 2020.

Table 2-9. Annual Forced Out	age of Cross-regional Interconn	ection Lines (FY 2011 to FY 2020
	age of cross regional intercomin	2020 Elles (1 1 2011 to 1 1 2020

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Total	10-years Average
Number	5	6	9	1	3	3	3	6	9	8	53	5

¹⁴ They were both generator shutdowns at the Soma–Futaba trunk line attributable to an earthquake on February 13, and another on March 20.

5. Actual Employment of the Transmission Margin

"Employment of the transmission margin" refers to the supply of electricity by GT&D companies utilizing their transmission margin to interconnection lines where the supply-demand balance is restricted or insufficient to reduce power supply, among other such possibilities. Table 2-10 shows the actual employment of the transmission margin for FY 2020 according to the provisions of Article 152 of the Operational Rules.

Actual employment of the transmission margin for FY 2020 was 16 days, and was the highest since the Organization was established in FY 2015, which is attributable to measures taken for the supply-demand tightness during the winter of 2020/2021.

Date	Facility	Background
December 15 & 16, 2020	Interconnection facilities between Tokyo and Chubu (Flow from Tokyo to Chubu)	(Countermeasures to tight supply-demand during the winter 2020/21) Insufficient ATC of the corresponding facilities which is necessary for the instruction of power exchanges because of continuous shortage of supply capacity nationwide due to extremely cold weather.
January 3, 4, 6 & 7, 2021	Interconnection facilities between Tokyo and Chubu (Flow from Chubu to Tokyo)	(Countermeasures to tight supply-demand during the winter 2020/21) Insufficient ATC of the corresponding facilities which is necessary for the instruction of power exchanges because of continuous shortage of supply capacity nationwide due to extremely cold weather.
January 8, 9, 10, 11, 12, 13, 15 & 16, 2021	Interconnection facilities between Tokyo and Chubu (Flow from Tokyo to Chubu)	(Countermeasures to tight supply-demand during the winter 2020/21) Insufficient ATC of the corresponding facilities which is necessary for the instruction of power exchanges because of continuous shortage of supply capacity nationwide due to extremely cold weather.
January 13, 2021	Interconnection facilities between Chugoku and Shikoku (Flow from Chugoku to Shikoku)	(Countermeasures to tight supply-demand during the winter 2020/21) Insufficient ATC of the corresponding facilities which is necessary for the instruction of power exchanges because of continuous shortage of supply capacity nationwide due to extremely cold weather.
February 14, 2021	Interconnection facilities between Tokyo and Chubu (Flow from Chubu to Tokyo)	Insufficient ATC of the corresponding facilities in the regional service area of Tohoku NW which is subject to the instruction of power exchanges because of decreased supply capacity due to earthquake of maximum seismic intensity of 6 occurred in Fukushima offshore.

Table 2-10: Actual Employment of the	Transmission Margin
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Table 2-11: Actual Employment of Transmission Margin (FY 2016 to FY 2020)

[days]

					[uuys]
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Nationwide	0	3	15	1	16

6. Actual Available Transfer Capabilities of Each Cross-regional Interconnection Line

The actual ATC values calculated and published are shown in Figures 2-10 to 2-19. (Figures 2-9 and Table 2-12 explain how to interpret the ATC graphs.)



Figure 2-9: How to Interpret an ATC graph

Table 2-12: Ex	planation	of ATC	graph	com	onents

	By the end of September, 2018	After October, 2018 (introduction of implicit auction scheme)
(i) Calculated TTC	The maximum electricity that can be sent to the distribution facilities while securing supply reliability without damaging the transmission and distribution facilities	The same as the left
(ii) Calculated Transmission Margin	The amount of electricity managed by the Organization as a part of total TTC by the directions of scheduled power flows of the interconnection lines to receive electricity from other regional service areas through interconnection lines under abnormal situations of electric network, supply shortage or other emergent situations, to keep stabilizing the electric network, or to develop an environment of market trading of electricity, or to procure balancing capacity from other regional service areas. Power flows of allocation plans utilizing transmission margin and those employing transmission margin shall be deducted.	The amount of electricity managed by the Organization as a part of total transfer capability of the interconnection lines to receive electricity from other regional service areas through interconnection lines under abnormal situations of electric network, supply shortage or other emergent situations, to keep stabilizing the electric network, or to procure balancing capacity from other regional service areas. Scheduled power flows employing transmission margin shall be deducted.
(iii) Registered SPF	Sum of the registered power flows stated below: 1) allocation plans in "first come, first seerved" principle 2) trade in day-ahead spot market 3) trade in 1 hour-ahead market	Sum of the registered power flows stated below: 1) trade in day-ahead spot market 2) trade in 1 hour-ahead market
(iv) Calculated ATC	(iv) = (i) - (ii) - (iii) The necessary capability for long-cycle cross-regional frequency control shall be immediately deducted from ATC at the decision of its implementation.	The same as the left

The actual flows on the transmission lines are offset in each direction. Therefore, the scheduled power flow is the offset value between the forward and counter flows, not the simple sum of both directions. In addition, offset values on the graphs are observed as SPF, rather than observing the capacity of each forward flow and counter flow.

(Reference) Publishing actual ATC

Detailed network system information including actual ATC is available at the URL below. URL <u>http://occtonet.occto.or.jp/public/dfw/RP11/OCCTO/SD/LOGIN_login#</u>



Figure 2-10: Actual ATC for Interconnection Facilities between Hokkaido and Honshu (Hokkaido–Honshu HVDC Link, and New Hokkaido–Honshu HVDC Link)

Note: Hokkaido to Tohoku is considered a forward (positive) flow, with Tohoku to Hokkaido being a counter (negative) flow.



Figure 2-11: Actual ATC for Interconnection Lines between Tohoku and Tokyo (Soma–Futaba Bulk Line and Iwaki Bulk Line)

Note: Tohoku to Tokyo is considered a forward (positive) flow, with Tokyo to Tohoku being a counter (negative) flow.


(Sakuma, Shin Shinano and Higashi Shimizu and Hida-Shinano F.C.)

Note: Tokyo to Chubu is considered a forward (positive) flow, with Chubu to Tokyo being a counter (negative) flow.



Figure 2-13: Actual ATC for the Interconnection Line between Chubu and Kansai (Mie–Higashi Omi Line) Note: Chubu to Kansai is considered a forward (positive) flow, with Kansai to Chubu being a counter (negative) flow.

The Organization has enlarged the TTC of interconnection line between Chubu and Kansai (Mie– Higashi Omi Line) as an emergency transaction according to the provisions of Article 153 of the Operational Rules. During the supply-demand tightness nationwide in the winter of 2020/2021, the ATC of the corresponding line was insufficient to issue instructions of power exchange to GT&D companies, and the electricity supply-demand would have degraded without a power exchange. The Organization has considered the possible risk of blackout caused by accidents to transmission lines on rare occasions, and has enlarged the TTC of the corresponding line. The periods and average capabilities in the enlargement are as below.

Interconnection Line between Chubu and Kansai (Mie-Higashi Omi Line) [Flow to Kansai area]

- 1) From 4:30 to 24:00 on Januaryuary 8 (1330 MW at most)
- 2) From 3:00 to 24:00 on Januaryuary 9 (1070 MW on average)
- 3) From 0:00 to 24:00 on Januaryuary 10 (1060 MW on average)
- 4) From 0:00 to 24:00 on Januaryuary 11 (1060 MW on average)
- 5) From 0:00 to 24:00 on Januaryuary 12 (1110 MW on average)
- 6) From 0:00 to 24:00 on Januaryuary 13 (1150 MW on average)







Figure 2-15: Actual ATC for the Interconnection Line between Hokuriku and Kansai (Echizen–Reinan Line) Note: Hokuriku to Kansai is considered a forward (positive) flow, with Kansai to Hokuriku being a counter (negative) flow.



Figure 2-16: Actual ATC for Interconnection Lines between Kansai and Chugoku (Seiban-Higashi Okayama Line and Yamazaki-Chizu Line)





Figure 2-17: Actual ATC for Interconnection Facilities between Kansai and Shikoku (Interconnection facilities between Kihoku and Anan AC/DC Converter Station)

Note: Kansai to Shikoku is considered a forward (positive) flow, with Shikoku to Kansai being a counter (negative) flow. *The ATC for the forward flow is calculated and chosen as the smaller from the following. •TTC-transfer margin-SPF.

[•]TTC of Minami Awa Bulk Line– (Supply Capacity of Tachibanawan Thermal Power Station–SPF of Anan–Kihoku DC Bulk Line).



Figure 2-18: Actual ATC for the Interconnection Line between Chugoku and Shikoku (Honshi Interconnection Line) Note: Chugoku to Shikoku is considered a forward (positive) flow, with Shikoku to Chugoku being a counter (negative) flow.



Figure 2-19: Actual ATC for the Interconnection Line between Chugoku and Kyushu (Kanmon Interconnection Line)

Note: Chugoku to Kyushu is considered a forward (positive) flow, with Kyushu to Chugoku being a counter (negative) flow.

7. Actual Constraints on Cross-regional Interconnection Lines Nationwide

For the constraints on each regional service area of the 10 GT&Ds, please see the links below.

* Constraints maps are published on the websites below (in Japanese only).

Hokkaido Electric Power Network, Inc.: http://www.hepco.co.jp/network/con_service/public_document/bid_info.html Tohoku Electric Power Network Co., Inc.: https://nw.tohoku-epco.co.jp/consignment/system/announcement/ TEPCO Power Grid, Incorporated: http://www.tepco.co.jp/pg/consignment/system/index-j.html Chubu Electric Power Grid Co., Inc.: https://powergrid.chuden.co.jp/takuso_service/hatsuden_kouri/takuso_kyokyu/rule/map/ Hokuriku Electric Power Transmission & Distribution Company: http://www.rikuden.co.jp/nw_notification/U_154seiyaku.html#akiyouryu Kansai Transmission and Distribution, Inc.: https://www.kansai-td.co.jp/consignment/disclosure/distribution-equipment/index.html Chugoku Electric Power Transmission & Distribution Company, Incorporated: https://www.energia.co.jp/nw/service/retailer/keitou/access/ Shikoku Electric Power Transmission & Distribution Company, Incorporated: https://www.yonden.co.jp/nw/line_access/index.html Kyushu Electric Power Transmission & Distribution Co., Inc.: https://www.kyuden.co.jp/td_service_wheeling_rule-document_disclosure The Okinawa Electric Power Company Incorporated: http://www.okiden.co.jp/business-support/service/rule/plan/index.html

CONCLUSION

Actual Electricity Supply-Demand

For the actual electricity supply-demand, data on the peak demand, the electric energy requirement, the load factor, and supply-demand status during the peak demand period and the lowest demand period, and peak daily energy supply have been collected. In addition, instructions with respect to power exchanges (according to the provisions of paragraph 1 of Article 28-44 of the Electricity Business Act,) and actual output shedding of renewable-energy-generating facilities (according to the provisions of the Ministerial Ordinance of the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electric Utilities) have been aggregated.

Actual Utilization of Cross-regional Interconnection Lines

For the actual utilization of cross-regional interconnection lines, data on the utilization, the maintenance work, the forced outages, the employment of transmission margin, and the ATC have been collected.

<Reference> Detailes of the Actual Power Exchange Instructions, with Instructions and Requests to Generation Companies and Retail Companies Issued by the Oraganization.

Details of the actual power exchange instructions, with instructions and requests to generation companies and retail companies issued by the Organization in FY 2020 are listed below. They include measures for avoiding a repeat of the supply-demand tightness during the winter of 2020/2021.

		6 , 6
1	Issued at	15:13 on August 28, 2020
	T	•Tokyo PG shall supply 400 MW of electricity at most to Tohoku NW from 16:00 to 17:30 on August 28.
	Instruction	•Tohoku NW shall be supplied 400 MW of electricity at most by Tokyo PG from 16:00 to 17:30 on August 28.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Васкдгоила	because of unexpected demand growth caused by higher temperature.
	Issued at	09:24 on September 24, 2020
		•Chubu PG shall supply 300 MW of electricity to Kyushu T&D from 10:00 to 12:00.
2	Instruction	・ChugokuNW shall ネ supply 400 MW of electricity to Kyushu T&D from 10:00 to 12:00.
2		·Kyushu T&D shall be supplied 700 MW of electricity by Chubu PG and Chugoku NW from 10:00 to 12:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of Decemberreased output of solar power and demand increase caused by change in weather.
	Issued at	10:19 on September. 24, 2020
	Instruction	•Kansai T&D shall supply 500 MW of electricity at most to Kyushu T&D from 11:00 to 12:00.
3	Instruction	·Kyushu T&D shall be supplied 500 MW of electricity at most by Kansai T&D from 11:00 to 12:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Dackground	because of Decemberreased output of solar power and demand increase caused by change in weather.
	Issued at	11:19 on September 24, 2020
		•Chubu PG shall supply 800 MW of electricity at most to Kyushu T&D from 12:00 to 17:00 on September 24.
		•Kansai T&D shall supply 500 MW of electricity at most to Kyushu T&D from 12:00 to 17:00 on September 24.
4	Instruction	•Chugoku NW shall supply 700 MW of electricity at most to Kyushu T&D from 12:00 to 17:00 on September 24.
		•Kyushu T&D shall be supplied 1600 MW of electricity at most by Chubu PG, Kansai T&D, and Chugoku NW from
		12:00 to 17:00 on September 24.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of Decemberreased output of solar power and demand increase caused by change in weather.
	Issued at	09:22 on November 25, 2020
	Instruction	•Chugoku NW shall supply 400 MW of electricity at most to Shikoku T&D from 10:00 to 11:30.
5		•Shikoku T&D Chugoku NW shall be supplied 400 MW of electricity at most by Chugoku NW from 10:00 to 11:30.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of Decemberreased output of solar power and demand increase caused by change in weather.
	Issued at	09:05 on December 15, 2020
		•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 09:30 to 12:00.
		•Chugoku NW shall supply 500 MW of electricity to Kansai T&D from 09:30 to 12:00.
	Instruction	•Shikoku T&D shall supply 400 MW of electricity to Kansai T&D from 09:30 to 12:00.
6	Instruction	·Kyushu T&D shall supply 50 MW of electricity to Kansai T&D from 09:30 to 12:00.
		•Kansai T&D shall supply 1000 MW of electricity by Hokuriku T&D, Chugoku NW, Shikoku T&D, and Kyushu T&D
		from 09:30 to 12:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of unexpected demand growth and expected Decemberrease of supply capacity in some generation
		plants caused by lower temperature.

Actual Power Exchange Instructions by the Organization

	Issued at	11:41 on December 15, 2020
7		•Tokyo PG shall supply 350 MW of electricity at most to Kansai T&D from 15:00 to 16:00.
		•Chubu PG shall supply 9 MW of electricity to Kansai T&D from 13:30 to 14:00.
		•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 12:00 to 16:00.
		•Chugoku NW shall supply 30 MW of electricity to Kansai T&D from 12:00 to 16:00.
	Instruction	•Shikoku T&D shall supply 30 MW of electricity at most to Kansai T&D from 12:00 to 15:30.
		•Kyushu T&D shall supply 80 MW of electricity at most to Kansai T&D from 12:00 to 16:00.
		•Kansai T&D shall supply 1300 MW of electricity at most by Tokyo PG, Chubu PG, Hokuriku T&D, Chugoku NW,
		Shikoku T&D and Kyushu T&D from 12:00 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of unexpected demand growth and expected Decemberrease of supply capacity in some generation
		plants caused by lower temperature.
	Issued at	15:40 on December 15, 2020
		•Tokyo PG shall supply 500 MW of electricity at most to Kansai T&D from 16:00 to 19:30.
		•Chubu PG shall supply 2 MW of electricity to Kansai T&D from 19:30 to 20:00.
		•Hokuriku T&D shall supply 20 MW of electricity at most to Kansai T&D from 16:00 to 20:30.
		•Chugoku NW shall supply 30 MW of electricity to Kansai T&D from 16:00 to 20:30.
0	Instruction	•Shikoku T&D shall supply 190 MW of electricity at most to Kansai T&D from 16:00 to 20:30.
0		•Kyushu T&D shall supply 600 MW of electricity at most to Kansai T&D from 16:00 to 20:30.
		·Kansai T&D shall be supplied 1000 MW of electricity at most by Tokyo PG, Chubu PG, Hokuriku T&D, Chugoku
		NW, Shikoku T&D and Kyushu T&D from 16:00 to 20:30.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of unexpected demand growth and expected Decemberrease of supply capacity in some generation
		plants caused by lower temperature.
	Issued at	19:37 on December 15, 2020
		•Hokuriku T&D shall supply 20 MW of electricity at most to Kansai T&D from 20:30 to 24:00.
		•Chugoku NW shall supply 10 MW of electricity to Kansai T&D from 20:30 to 21:30.
	Instruction	•Shikoku T&D shall supply 400 MW of electricity at most to Kansai T&D from 20:30 to 24:00.
9		·Kyushu T&D shall supply 500 MW of electricity at most to Kansai T&D from 20:30 to 23:00.
5		•Kansai T&D shall be supplied 900 MW of electricity at most by Tokyo PG, Chubu PG, Hokuriku T&D, Chugoku
		NW, Shikoku T&D and Kyushu T&D from 20:30 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of unexpected demand growth and expected Decemberrease of supply capacity in some generation
		plants caused by lower temperature.
	Issued at	22:23 on December 15, 2020
		•Tokyo PG shall supply 1490 MW of electricity at most to Kansai T&D from 00:00 to 08:30 on December 16.
		•Hokuriku T&D shall supply 100 MW of electricity at most to Kansai T&D from 00:00 to 03:00 on December 16.
	Instruction	•Shikoku T&D shall supply 40 MW of electricity at most to Kansai T&D from 00:00 to 00:30 on December 16.
10		•Kyushu T&D shall supply 200 MW of electricity at most to Kansai T&D from 03:00 to 08:00 on December 16.
		•Kansai T&D shall be supplied 1500 MW of electricity at most by Tokyo PG, Chubu PG, Hokuriku T&D, Chugoku
		NW, Shikoku T&D and Kyushu T&D from 00:00 to 08:00 on December 16.
	Background	Securng supply capacity for the day is necessary by the power exchange through cross-regional interconnection
		lines due to Decemberreaseof supply capacity in some generation plants.
	Issued at	07:00 on December 16, 2020
		•Tokyo PG shall supply 600 MW of electricity at most to Kansai T&D from 08:00 to 11:00.
		•Hokuriku T&D shall supply 100 MW of electricity to Kansai T&D from 08:00 to 12:00.
		•Chugoku NW shall supply 100 MW of electricity to Kansai T&D from 11:00 to 12:00.
11	Instruction	•SNIKOKU 1&D Shall supply 150 MW of electricity at most to Kansai 1&D from 10:00 to 12:00.
		•Kyusnu 1&D shall supply 300 MW of electricity at most to Kansai 1&D from 08:00 to 11:00.
		•Kansai Tao shall be supplied 870 MW or electricity at most by Tokyo PG, Hokuriku Tao, Chugoku NW, Shikoku
	Background	Securing supply capacity for the day is necessary by the power exchange through cross-regional interconnection
		lines due to Decemberreaseor supply capacity in some generation plants.

	Issued at	16:02 on December 16, 2020
12		•Tokyo PG shall supply 430 MW of electricity at most to Chubu PG from 16:30 to 18:00.
		•Hokuriku T&D shall supply 150 MW of electricity at most to Chubu PG from16:30 to 18:30.
	Instruction	•Chugoku NW shall supply 60 MW of electricity at most to Chubu PG from17:00 to 18:30.
		·Chubu PG shall be supplied 600 MW of electricity at most by Tokyo PG, Hokuriku T&D and Chugoku NW
		from16:30 to 18:30.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of generator shutdown due to transmission line outage in the regional service area.
	Issued at	11:41 on December 27, 2020
		•Hokkaido NW shall supply 30 MW of electricity at most to Kansai T&D from 16:30 to 17:30.
		•Chubu PG shall supply 150 MW of electricity at most to Kansai T&D from 12:00 to 24:00.
		•Hokuriku T&D shall supply 500 MW of electricity at most to Kansai T&D from 12:00 to 24:00.
	Instruction	•Chugoku NW shall supply 50 MW of electricity to Kansai T&D from 12:00 to 24:00.
		•Kyushu T&D shall supply 100 MW of electricity at most to Kansai T&D from 12:00 to 23:00.
13		·Kansai T&D shall be supplied 2000 MW of electricity at most by Hokkaido NW, Chubu PG, Chugoku NW, and
		Kyushu T&D from 12:00 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators in the regional service area of Kansai T&D which
	Background	is necessary for supply-demand balance due to prolonged cold weather.
		Further, the Organization shall implement additional instructions to supply capacity of balancing generators is
	Territed	continuousiy saveu.
	issued at	20:11 on December 27, 2020
		•Hokkaldo NW shall supply 300 MW of electricity at most to Kansal 1&D from 08:00 to 12:00 on December 28.
		•Chubu PG shall supply 1750 MW of electricity at most to Kansal 1&D from 00:00 to 14:00 on December 28.
	Instruction	Churacky NW chall supply 250 MW of electricity to Kansai T&D from 10:00 to 14:00 on December 28.
		• Chugoku NW shall supply 50 MW of electricity to Kansal T&D from 10:00 to 14:00 on December 28.
14		-Shikoku T&D shall supply 100 MW of electricity at most to Kansai T&D from 00:30 to 11:30 on December 28
		-Kydshu T&D shall be supplied 2000 MW of electricity at most by Hokkaido NW. Chubu PG. Hokuriku T&D. Chugoku
		NW Shikoku T&D and Kvushu T&D from 00:00 to 14:00 on December 28
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	01:36 on January 3, 2021
		•Chubu PG shall supply 600 MW of electricity at most to Tokyo PG from 02:00 to 08:00.
		•Hokuriku T&D shall supply 200 MW of electricity to Tokyo PG from 07:30 to 10:00.
	Instruction	•Chugoku NW shall supply 30 MW of electricity to Tokyo PG from 09:00 to 10:00.
15	Instruction	·Kyushu T&D shall supply 300 MW of electricity at most to Tokyo PG from 07:30 to 09:30.
_		•Tokyo PG shall be supplied 600 MW of electricity at most by Chubu PG, Hokuriku T&D, Chugoku NW, and Kyushu
		T&D from 02:00 to 10:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Teguad at	
	issued at	Heldzide NW shall supply 100 MW of electricity to Televo PC from 11:20 to 22:00
		Tobaku NW shall supply 200 MW of electricity to Tokyo PG from 11:30 to 16:30
		·Chubu PG shall supply 600 MW of electricity at most to Tokyo PG from 11:30 to 22:00
		Hokuriku T&D shall supply 200 MW of electricity to Tokyo PG from 11:30 to 21:30
	Instruction	•Chugoku NW shall supply 50 MW of electricity to Tokyo PG from 11:30 to 12:30
16	instruction	•Shikoku T&D shall supply 50 MW of electricity to Tokyo PG from 11:30 to 12:30.
10		•Kyushu T&D shall supply 100 MW of electricity to Tokyo PG from 16:30 to 21:00.
		•Tokyo PG shall be supplied 900 MW of electricity at most by Hokkaido NW. Tohoku NW. Chubu PG. Hokuriku T&D.
		Chugoku NW, Shikoku T&D, and Kyushu T&D from 11:30 to 22:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Tokyo PG due to prolonged cold weather.

	Issued at	21:08 on January 3, 2021
17		•Hokkaido NW shall supply 100 MW of electricity to Tokyo PG from 00:00 to 14:00 on January 4.
		•Tohoku NW shall supply 300 MW of electricity at most to Tokyo PG from 0:00 to 01:30 on January 4.
		•Chubu PG shall supply 900 MW of electricity at most to Tokyo PG from 00:00 to 14:00 on January 4.
	Instruction	•Hokuriku T&D shall supply 100 MW of electricity at most to Tokyo PG from 07:00 to 10:00 on January 4
		•Tokyo PG shall be supplied 1000 MW of electricity at most by Hokkaido NW. Tohoku NW. Chubu PG, and Hokuriku
		T&D from 00:00 to 14:00 on January 4
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Packground	hecause of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Backyrounu	in the regional service area of Tokyo PC due to prolonged cold weather
-	Issued at	13:18 on January 4, 2021
	135000 00	Hokkaido NW shall supply 100 MW of electricity to Tokyo PG from 18:00 to 24:00
		Tobaku NW shall supply 500 MW of electricity at most to Takyo PG from 14:00 to 24:00.
		- Chubu DC shall supply 500 MW of electricity at most to Tokyo PC from 21:20 to 24:00.
		Chubu PG shall supply 500 MW of electricity at most to Tokyo PG from 14:20 to 24:00.
	Instruction	•Hokuriku T&D shall supply 100 MW of electricity to Tokyo PG from 14:30 to 24:00.
18		•Shikoku T&D shall supply 100 MW of electricity to Tokyo PG from 15:30 to 16:00.
		•Kyushu T&D shall supply 250 MW of electricity at most to Tokyo PG from 15:30 to 21:30.
		• Tokyo PG shall be supplied 600 MW of electricity at most by Hokkaido NW, Tohoku NW, Chubu PG, Hokurku T&D,
		Shikoku T&D, and Kyushu T&D from 14:00 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Tokyo PG due to prolonged cold weather.
	Issued at	20:39 on January 5, 2021
		•Hokkaido NW shall supply 100 MW of electricity to Kansai T&D from 22:00 to 23:00.
	Instruction	•Tohoku NW shall supply 150 MW of electricity at most to Kansai T&D from 22:30 to 24:00.
		•Hokuriku T&D shall supply 200 MW of electricity to Kansai T&D from 21:30 to 24:00.
19		•Kansai T&D shall be supplied 350 MW of electricity at most by Hokkaido NW, Tohoku NW, and Hokuriku T&D from
		21:30 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	23:13 on January 5, 2021
		•Tohoku NW shall supply 350 MW of electricity at most to Kansai T&D from 03:00 to 05:30 on January 6.
		·Hokuriku T&D shall supply 200 MW of electricity to Kansai T&D from 00:00 to 06:00 on January 6.
	.	•Shikoku T&D shall supply 140 MW of electricity to Kansai T&D from 00:00 to 04:30 on January 6.
20	Instruction	•Kyushu T&D shall supply 100 MW of electricity to Kansai T&D from 00:00 to 02:30 on January 6.
20		·Kansai T&D shall be supplied 690 MW of electricity at most by Tohoku NW, Hokuriku T&D, Shikoku T&D, and
		Kyushu T&D from 00:00 to 06:00 on January 6.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	04:17 on January 6, 2021
	_	•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 06:00 to 08:00.
21	Instruction	•Kansai T&D shall be supplied 50 MW of electricity at most by Hokuriku T&D from 06:00 to 08:00.
21		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	07:12 on January 6, 2021
		•Kyushu T&D shall supply 100 MW of electricity to Tohoku NW from 08:00 to 09:00.
22	Instruction	•Tohoku NW shall be supplied 100 MW of electricity by Kyushu T&D from 08:00 to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of increasing demand by cold temperature in the regional service area of Tohoku NW.

	Issued at	10:21 on January 6, 2021
23		•Chugoku NW shall supply 30 MW of electricity to kansai T&D from 11:00 to 16:00.
	Instruction	•Kyushu T&D shall supply 100 MW of electricity to kansai T&D from 11:00 to 13:00.
		•Kansai T&D shall be supplied 130 MW of electricity by Chugoku NW and Kyushu T&D from 11:00 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	15:43 on January 6, 2021
		•Hokkaido NW shall supply 140 MW of electricity at most to Kansai T&D from 16:30 to 20:00.
		•Shikoku T&D shall supply 110 MW of electricity to Kansai T&D from 17:00 to 20:00.
24	Instruction	•Kyushu T&D shall supply 100 MW of electricity at most to Kansai T&D from 16:00 to 20:00.
		•Kansai T&D shall be supplied 310 MW of electricity at most by Hokkaido NW, Shikoku T&D, and Kyushu T&D from
		16:00 to 20:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
-		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	18:50 on January 6, 2021
	Instruction	•Hokkaido NW shall supply 140 MW of electricity at most to Kansai T&D from 20:00 to 22:00.
25		•Kansai T&D shall be supplied 140 MW of electricity at most by Hokkaido NW from 20:00 to 22:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	22:29 on January 6, 2021
		· Tohoku NW shall supply 100 MW of electricity to Tokyo PG from 03:00 to 04:00 on January 7.
	Instruction	•Chubu PG shall supply 210 MW of electricity to Tokyo PG from 00:00 to 06:00 on January 7.
26		• Tokyo PG shall be supplied 310 MW of electricity at most by Tonoku NW, and Chubu PG from 00:00 to 06:00 on
		January 7.
	De elseversed	he supply demand status may degrade without power exchanges through cross-regional interconnection lines
	васкдгоипо	in the regional sorvice area of Tokyo PC due to prolonged cold weather
	Issued at	04:38 on January 7, 2021
	155464 46	•Chubu PG shall supply 100 MW of electricity at most to Tokyo PG from 06:00 to 11:00
	Instruction	•Tokyo PG shall be supplied 100 MW of electricity at most by Chubu PG from 06:00 to 11:00.
27		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	<u>9</u>	in the regional service area of Tokyo PG due to prolonged cold weather.
	Issued at	10:18 on January 7, 2021
		•Chubu PG shall supply 180 MW of electricity at most to Kansai T&D from 11:00 to 14:00.
• •	Instruction	•Kansai T&D shall be supplied 180 MW of electricity at most by Chubu PG from 11:00 to 14:00.
28		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	11:22 on January 7, 2021
		•Kyushu T&D shall supply 100 MW of electricity to Kansai T&D from 12:00 to 13:00.
20	Instruction	•Kansai T&D shall be supplied 100 MW of electricity by Kyushu T&D from 12:00 to 13:00.
29		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	11:58 on January 7, 2021
	Instruction	·Kyushu T&D shall supply 100 MW of electricity at most to Kansai T&D from 13:00 to 14:30.
30	mscruction	•Kansai T&D shall be supplied 100 MW of electricity at most by Kyushu T&D from 13:00 to 14:30.
30		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.

31	Issued at	13:46 on January 7, 2021
	Instruction	·Chubu PG shall supply 180 MW of electricity to Hokuriku T&D from 14:00 to 15:00.
	Instruction	•Hokuriku T&D shall be supplied 180 MW of electricity by Chubu PG from 14:00 to 15:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	14:28 on January 7, 2021
32	Instruction	·Chubu PG shall supply 210 MW of electricity to Hokuriku T&D from 15:00 to 16:00.
		•Hokuriku T&D shall be supplied 210 MW of electricity by Chubu PG from 15:00 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	15:37 on January 7, 2021
		•Hokkaido NW shall supply 50 MW of electricity to Hokuriku T&D from 16:00 to 17:00.
22	Instruction	•Chubu PG shall supply 250 MW of electricity to Hokuriku 1&D from 16:00 to 17:00.
33		•Hokuriku T&D shall be supplied 300 MW of electricity by Hokkaldo NW and Chubu PG from 16:00 to 17:00.
		he supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	васкдгоипо	in the regional service area of Hokuriku T&D due to prolonged cold weather
-	Iccued at	16:26 on January 7, 2021
	issueu at	•Hokkaido NW shall supply 190 MW of electricity to Chugoku NW from 17:00 to 18:00
	Instruction	·Chugoku NW shall be supplied 190 MW of electricity by Hokkaido NW from 17:00 to 18:00
34		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	g	in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	16:35 on January 7, 2021
		•Kansai T&D shall supply 350 MW of electricity to Hokuriku T&D from 17:00 to 18:00.
25	Instruction	•Hokuriku T&D shall be supplied 300 MW of electricity by Kansai T&D from 17:00 to 18:00.
35		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	16:39 on January 7, 2021
	Instruction	•Kansai T&D shall supply 50 MW of electricity to Shikoku T&D from 17:00 to 18:00.
36		•Shikoku T&D shall be supplied 50 MW of electricity by Kansai T&D from 17:00 to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
-		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	17:39 on January 7, 2021
	Instruction	•Chubu PG shall supply 250 MW of electricity to Hokuriku T&D from 18:00 to 19:00.
37		•Hokuriku T&D shall be supplied 250 MW of electricity by Chubu PG from 18:00 to 19:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional convice area of Holywilly TSP, due to prolonged cold weather
	Icould at	
	issued at	Holdside NW shall supply 100 MW of electricity to Churchy NW from 18:00 to 10:00
	Instruction	Takya PC shall supply 400 MW of electricity to Chugaku NW from 18:00 to 19:00.
38	Instruction	·Churoku NW shall be supplied 590 MW of electricity by Hokkaido NW and Tokyo PG from 18:00 to 19:00
50		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Ducity: ourid	in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	17:39 on January 7, 2021
		•Chubu PG shall supply 100 MW of electricity to Shikoku T&D from 18:00 to 19:00.
~~	Instruction	•Shikoku T&D shall be supplied 100 MW of electricity by Chubu PG from 18:00 to 19:00.
39	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.

	Issued at	18:38 on January 7, 2021
40		•Hokkaido NW shall supply 190 MW of electricity at most to Hokuriku T&D from 19:00 to 20:00
	Instruction	Hokuriku T&D shall be supplied 190 MW of electricity at most by Hokkaido NW from 19:00 to 20:00.
		The supply demand status may degrade without never exchanges through cross regional interconnection lines
	De elsevessed	hecause of chertage of cumply capacity for balancing generators which is necessary for supply demand balance
	васкдгоипо	in the regional convice area of Helduriku TVD due to prelenged cold weather
	Teerredet	
	issued at	To So off Jahlad y 7, 2021
	.	• Tokyo PG shall supply 600 MW of electricity to Chugoku NW from 19:00 to 20:00.
	Instruction	•Chubu PG shall supply 700 MW of electricity to Chugoku NW from 19:00 to 20:00.
41		Chugoku NW shall be supplied 1500 MW of electricity by Tokyo PG and Chubu PG from 19.00 to 20.00.
		here supply demand status may degrade without power exchanges through cross-regional interconnection lines
	васкдгоипо	in the regional convice area of Churchy NW due to prelonged cold weather
	Teguad at	
	issued at	19:41 OII Jaliudi y 7, 2021
	Instruction	-Hokkaldo NW Shall supply 50 MW of electricity to Hokuliku T&D from 20:00 to 21:00.
42		The surplu descend status new descends without general such as a through such as a single interest int
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional convice area of Helkuriku T&D due to prelenged cold weather
	Territori	
	issued at	19:41 Oli Jaliudi y 7, 2021
	.	• Hokkaldo NW Shall supply 140 MW of electricity at most to Chugoku NW from 20:00 to 21:00.
12	Instruction	•Chubu PG shall supply 700 MW of electricity to Chugoku NW from 20:00 to 21:00.
43		The supply demand status may degrade without power systemate through grace regional interconnection lines.
	De elseves d	hecause of chertage of cumply capacity for balancing generators which is necessary for supply demand balance
	васкдгоипо	in the regional convice area of Churchy NW due to prelonged cold weather
	Iccued at	
	issued at	20.52 OII Jailually 7, 2021
	To a town at it as	-Chubu DC shall supply 190 MW of electricity to Chugoku NW from from 21:00 to 24:00.
44	Instruction	-Chuddu PG shall supply 1000 MW of electricity to Chuddoku NW from from 21.00 to 24.00.
		The supply-domand status may degrade without power exchanges through cross-regional interconnection lines
	Packground	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Backyrounu	in the regional service area of Chugoku NW due to prolonged cold weather
	Issued at	22:25 on January 7, 2021
	155000 00	Hokkaido NW shall supply 140 MW of electricity to Chugoku NW from 23:00 to 24:00
	Instruction	•Chugoku NW shall be supplied 140 MW of electricity by Hokkaido NW from 23:00 to 24:00
45		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is peressary for supply-demand balance
	Dackground	in the regional service area of Chugoku NW due to prolonged cold weather
	Issued at	23:35 on January 7, 2021
	155000 00	•Hokkaido NW shall supply 140 MW of electricity at most to Chugoku NW from 00:00 to 04:00 on January 8
		•Toboku NW shall supply 250 MW of electricity at most to Chugoku NW from 03:00 to 04:00 on January 8
		•Chubu PG shall supply 200 MW of electricity to Chugoku NW from 00:00 to 04:00 on January 8.
	Instruction	•Hokuriku T&D shall supply 30 MW of electricity to Chugoku NW from 00:00 to 04:00 on January 8.
46		·Chuqoku NW shall be supplied 550 MW of electricity at most by Hokkaido NW, Tohoku NW, Chubu PG, and
		Hokuriku T&D from 00:00 to 04:00 on January 8.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	00:36 on January 8, 2021
	_	•Tohoku NW shall supply 680 MW of electricity at most to Tokyo PG from 01:00 to 02:00.
47	Instruction	•Tokyo PG shall be supplied 680 MW of electricity at most by Tohoku NW from 01:00 to 02:00.
47		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Tokyo PG due to prolonged cold weather.

48	Issued at	01:15 on January 8, 2021
		•Tohoku NW shall supply 1260 MW of electricity at most to Tokyo PG from 02:00 to 04:00.
	Instruction	•Tokyo PG shall be supplied 1260 MW of electricity at most by Tohoku NW from 02:00 to 04:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	buongi bunu	in the regional service area of Tokyo PG due to prolonged cold weather.
-	Issued at	03:16 on January 8, 2021
	155ucu ut	•Hokkaido NW shall supply 140 MW of electricity to Chugoku NW from 04:00 to 05:30
	Instruction	•Chubu PG shall supply 400 MW of electricity to Chugoku NW from 04:00 to 05:30
49	instruction	•Chugoku NW shall be supplied 540 MW of electricity by Hokkaido NW, and Chubu PG from 04.00 to 05.30
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Duckground	in the regional service area of Chugoku NW due to prolonged cold weather
-	Issued at	03·25 on January 8, 2021
	155ucu ut	•Toboku NW shall supply 1570 MW of electricity at most to Tokyo PG from 04:00 to 05:30
	Instruction	•Tokyo PG shall be supplied 1570 MW of electricity at most by Tohoku NW from 04:00 to 05:30.
50		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	hecause of shortage of supply capacity for balancing generators which is peressary for supply-demand balance
	Duckground	in the regional service area of Tokyo PG due to prolonged cold weather
	Issued at	04·34 on January 8, 2021
	155000 00	•Chubu PG shall supply 500 MW of electricity to Chugoku NW from 05:00 to 06:30
	Instruction	•Chugoku NW shall be supplied 500 MW of electricity by Chubu PG from 05:00 to 06:30
51		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	hecause of shortage of supply capacity for balancing generators which is peressary for supply-demand balance
	Duckground	in the regional service area of Chugoku NW due to prolonged cold weather
-	Issued at	05:04 on January 8, 2021
	100000 ut	•Hokkaido NW shall supply 140 MW of electricity to Chugoku NW from 05:30 to 08:00
	Instruction	•Tohoku NW shall supply 590 MW of electricity at most to Chugoku NW from 05:30 to 08:00.
52		•Chugoku NW shall be supplied 730 MW of electricity at most by Hokkaido NW and Tohoku NW from 05:30 to 08:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	06:40 on January 8, 2021
		•Chubu PG shall supply 1200 MW of electricity to Kansai T&D from 8:00 to 10:00.
52	Instruction	•Kansai T&D shall be supplied 1200 MW of electricity by Chubu PG from 8:00 to 10:00.
53		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	08:17 on January 8, 2021
	.	·Hokkaido NW shall supply 140 MW of electricity at most to Chugoku NW from 09:00 to 11:00.
54	Instruction	•Chugoku NW shall be supplied 140 MW of electricity at most by Hokkaido NW from 09:00 to 11:00.
74		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	09:39 on January. 8, 2021
	Instruction	•Chubu PG shall supply 700 MW of electricity to Kansai T&D from 10:00 to 11:00.
55		•Kansai T&D shall be supplied 700 MW of electricity by Chubu PG from 10:00 to 11:00.
55		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	09:39 on January 8, 2021
	Instruction	•Chubu PG shall supply 1000 MW of electricity to Chugoku NW from 10:00 to 11:00.
56		•Chugoku NW shall be supplied 1000 MW of electricity by Chubu PG from 10:00 to 11:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.

	Issued at	09:44 on January 8, 2021
57		•Shikoku T&D shall supply 50 MW of electricity to Chugoku NW from 10:00 to 11:00.
	Instruction	•Chugoku NW shall be supplied 50 MW of electricity by Chubu PG from 10:00 to 11:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	5	in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	10:40 on January 8, 2021
		•Chubu PG shall supply 150 MW of electricity to Hokuriku T&D from 11:00 to 12:00.
	Instruction	•Hokuriku T&D shall be supplied 50 MW of electricity by Chubu PG from 11:00 to 12:00.
58		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	5	in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	10:40 on January 8, 2021
		•Hokkaido NW shall supply 50 MW of electricity to Kansai T&D from 11:00 to 12:00.
	Instruction	•Chubu PG shall supply 50 MW of electricity to Kansai T&D from 11:00 to 12:00.
59	instruction	•Kansai T&D shall be supplied 100 MW of electricity by Hokkaido NW and Chubu PG from 11:00 to 12:00
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Duckground	in the regional service area of Kansai T&D due to prolonged cold weather
	Issued at	10:40 on January 8, 2021
	155000 00	Chubu PC shall supply 1700 MW of electricity to Chugoku NW from 11:00 to 12:00
	Instruction	•Shikoku T&D shall supply 50 MW of electricity to Chugoku NW from 11:00 to 12:00.
60	Instruction	Chugoku NW shall be supplied 1750 MW of electricity by Chubu PG and Shikoku T&D from 11:00 to 12:00
00		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Churchu NW due to prolonged cold weather
	Iccued at	
	ISSUEU at	·Chubu PC shall supply 150 MW of electricity to Hokuriku T&D from 12:00 to 13:00
	Instruction	Hokuriku T&D shall be supplied 150 MW of electricity by Chubu PC from 12:00 to 13:00
61		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Packaround	he supply demand status may degrade without power exchanges through closs-regional interconnection lines
	Dackground	in the regional service area of Hokuriku T&D due to prolonged cold weather
	Iccued at	11:43 on January 8, 2021
	155000 00	•Chubu PC shall supply 100 MW of electricity to Kansai T&D from 12:00 to 13:00
	Instruction	•Kansai T&D shall be supplied 100 MW of electricity by Chubu PG from 12:00 to 13:00
62		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	11:43 on January 8, 2021
	ISSUEU at	·Chubu PC shall supply 1650 MW of electricity at most to Chugoku NW from 12:00 to 13:00
	Instruction	•Shikoku T&D shall supply 50 MW of electricity to Chugoku NW from 12:00 to 13:00.
63	Instruction	• Chugoku NW shall be supplied 1700 MW of electricity at most by Chubu PC and Shikoku T&D from 12:00 to 13:00
00		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Packaround	he supply demand status may degrade without power exchanges through closs-regional interconnection lines
	backyrounu	in the regional service area of Churchu NW due to prolonged cold weather
	Iccued at	12:32 on January 8, 2021
	ISSUEU at	•Chubu PC shall supply 150 MW of electricity to Hokuriku T&D from 13:00 to 14:00
	Instruction	Hokuriku T&D shall be supplied 150 MW of electricity by Chubu PG from 13:00 to 14:00
64		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Duckground	in the regional service area of Hokuriku T&D due to prolonged cold weather
	Issued at	12:32 on January 8, 2021
		•Chubu PG shall supply 200 MW of electricity to Hokuriku T&D from 13:00 to 14:00
	Instruction	•Kansai T&D shall be supplied 200 MW of electricity by Chubu PG from 13:00 to 14:00
65		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Lackground	in the regional service area of Kansai T&D due to prolonged cold weather.

	Issued at	12:32 on January 8, 2021
66		·Hokkaido NW shall supply 50 MW of electricity to Chugoku NW from 13:00 to 14:00.
		•Chubu PG shall supply 1350 MW of electricity to Chugoku NW from 13:00 to 14:00.
	Instruction	•Shikoku T&D shall supply 50 MW of electricity to Chugoku NW from 13:00 to 14:00.
		•Chugoku NW shall be supplied 1450 MW of electricity Hokkaido NW, Chubu PG, and Shikoku T&D from 13:00 to 14:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	13:37 on January 8, 2021
		•Chubu PG shall supply 250 MW of electricity to Hokuriku T&D from 14:00 to 15:00.
67	Instruction	·Hokuriku T&D shall be supplied 250 MW of electricity by Chubu PG from 14:00 to 15:00.
07		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	13:37 on January 8, 2021
		•Hokkaido NW shall supply 50 MW of electricity to Kansai T&D from 14:00 to 15:00.
	Instruction	•Chubu PG shall supply 250 MW of electricity to Kansai T&D from 14:00 to 15:00.
68		•Kansai T&D shall be supplied 300 MW of electricity by Hokkaido NW and Chubu PG from 14:00 to 15:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	13:37 on January 8, 2021
		·Chubu PG shall supply 500 MW of electricity to Chugoku NW from 14:00 to 15:00.
	Instruction	•Shikoku T&D shall supply 50 MW of electricity to Chugoku NW from 14:00 to 15:00.
69		•Chugoku NW shall be supplied 550 MW of electricity by Chubu PG, and Shikoku T&D from 14:00 to 15:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	14:02 on January 8, 2021
	Instruction	•Tokyo PG shall supply 700 MW of electricity to Kansai T&D from 14:30 to 15:00.
70		•Kansai T&D shall be supplied /00 MW of electricity by Chubu PG from 14:30 to 15:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	.	In the regional service area of Kansal T&D due to prolonged cold weather.
	Issued at	14:41 on January 8, 2021
	.	• Tokyo PG shall supply 100 MW of electricity to Hokuriku T&D from 15:00 to 16:00.
71	Instruction	 Chubu PG shall supply 200 MW of electricity to Hokuliku T&D from 15:00 to 16:00. Kansai T&D shall be supplied 200 MW of electricity by Televe PC and Chubu PC from 15:00 to 16:00.
/1		The supply demand status may degrade without never exchanges through erece regional interconnection lines
	Packaround	hereis of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Hokuriku T&D due to prolonged cold weather
	Issued at	14:41 on January 8, 2021
	155000 00	•Chubu PG shall supply 150 MW of electricity to Hokuriku T&D from 15:00 to 16:00
	Instruction	•Kansai T&D shall be supplied 150 MW of electricity by Chubu PG from 15:00 to 16:00
72		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	hecause of shortage of supply capacity for balancing generators which is peressary for supply-demand balance
	Duckground	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	14:41 on January 8, 2021
		•Tokyo PG shall supply 560 MW of electricity at most to Chugoku NW from 15:00 to 16:00.
73	Instruction	•Shikoku T&D shall supply 50 MW of electricity to Chugoku NW from 15:00 to 16:00.
		•Chugoku NW shall be supplied 610 MW of electricity at most by Tokyo PG and Shikoku T&D from 15:00 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.

	1	
74	Issued at	14:41 on January 8, 2021
	Instruction	•Tokyo PG shall supply 200 MW of electricity to Kyushu T&D from 15:30 to 16:00.
	Instruction	•Kyushu T&D shall be supplied 200 MW of electricity by Tokyo PG from 15:30 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	15:36 on January 8, 2021
	Instruction	•Chubu PG shall supply 250 MW of electricity to Hokuriku T&D from 16:00 to 17:00.
75		•Hokuriku T&D shall be supplied 250 MW of electricity by Chubu PG from 16:00 to 17:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	15:36 on January 8, 2021
		•Tokyo PG shall supply 150 MW of electricity at most to Kansai T&D from 16:00 to 17:00.
76	Instruction	•Chubu PG shall supply 450 MW of electricity at most to Kansai T&D from 16:00 to 17:00.
76		•Kansai T&D shall be supplied 600 MW of electricity at most by Tokyo PG and Chubu PG from 16:00 to 17:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	15:36 on January 8, 2021
	Instruction	•Chubu PG shall supply 300 MW of electricity at most to Chugoku NW from 16:00 to 1/:00.
77		•Chugoku NW shall be supplied 300 MW of electricity at most by Chubu PG from 16:00 to 17:00.
		I ne supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Teerredet	15.26 op Japuary 9, 2021
	issued at	13.30 OII Jaliualy 6, 2021
	Instruction	Tokkaluo NW Shall supply 50 MW of electricity to Kyushu T&D from 16:00 to 17:00.
78	Instruction	• Kyushu T&D shall be supplied 500 MW of electricity at most by Hokkaido NW and Tokyo PC from 16:00 to 17:00
/0		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	hecause of shortage of supply capacity for balancing generators which is peressary for supply-demand balance
	Dackground	in the regional service area of Kyushu T&D due to prolonged cold weather
	Issued at	16:39 on January 8, 2021
	155000 00	•Chubu PG shall supply 100 MW of electricity to Hokuriku T&D from 17:00 to 18:00
	Instruction	•Hokuriku T&D shall be supplied 100 MW of electricity by Chubu PG from 17:00 to 18:00.
79		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	16:39 on January 8, 2021
		•Tokyo PG shall supply 450 MW of electricity at most to Kansai T&D from 17:00 to 18:00.
	Instruction	•Chubu PG shall supply 300 MW of electricity at most to Kansai T&D from 17:00 to 18:00.
80		•Kansai T&D shall be supplied 500 MW of electricity by Tokyo PG and Chubu PG from 17:00 to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	16:39 on January 8, 2021
	_	•Tokyo PG shall supply 400 MW of electricity to Chugoku NW from 17:00 to 18:00.
0.1	Instruction	•Chugoku NW shall be supplied 400 MW of electricity by Tokyo PG from 17:00 to 18:00.
81	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.

82	Issued at	16:39 on January 8, 2021
		·Hokkaido NW shall supply 140 MW of electricity at most to Kyushu T&D from 17:00 to 18:00.
	Instruction	•Tokyo PG shall supply 350 MW of electricity at most to Kyushu T&D from 17:00 to 18:00.
		•Kyushu T&D shall be supplied 440 MW of electricity at most by Hokkaido NW and Tokyo PG from 17:00 to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	17:41 on January 8, 2021
		•Tokyo PG shall supply 320 MW of electricity at most to Kansai T&D from 18:00 to 19:00.
	Instruction	•Chubu PG shall supply 170 MW of electricity at most to Kansai T&D from 18:00 to 19:00.
83		•Kansai T&D shall be supplied 500 MW of electricity at most by Tokyo PG and Chubu PG from 18:00 to 19:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
-		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	1/:41 on January 8, 2021
	Instruction	• Lokyo PG shall supply 400 MW of electricity to Chugoku NW from 18:00 to 19:00.
84		•Chugoku NW shall be supplied 400 MW of electricity by Tokyo PG from 18:00 to 19:00.
		I ne supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional service area of Churchu NW due to prolonged cold weather
	Icould at	
	issued at	Hokkaida NW shall supply 170 MW of electricity at most to Kyushu T&D from 18:00 to 19:00
	Instruction	•Tokyo PG shall supply 500 MW of electricity to Kyushu T&D from 18:00 to 19:00.
85	Instruction	•Kyushu T&D shall be supplied 670 MW of electricity at most by Hokkaido NW and Tokyo PG from 18:00 to 19:00
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	g	in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	18:31 on January 8, 2021
		•Chubu PG shall supply 200 MW of electricity to Kansai T&D from 19:00 to 20:00.
00	Instruction	•Kansai T&D shall be supplied 200 MW of electricity by Chubu PG from 19:00 to 20:00.
80		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	18:31 on January 8, 2021
		•Tokyo PG shall supply 900 MW of electricity at most to Chugoku NW from 19:00 to 20:00.
	Instruction	•Chubu PG shall supply 100 MW of electricity to Chugoku NW from 19:00 to 20:00.
87		•Chugoku NW shall be supplied 1000 MW electricity at most by Tokyo PG and Chubu PG from 19:00 to 20:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	18:31 on January 8, 2021
		•Hokkaido NW shall supply 190 MW of electricity at most to Kyushu T&D from 19:00 to 20:00.
	.	• Tohoku NW shall supply 220 MW of electricity at most to Kyushu T&D from 19:00 to 20:00.
88	Instruction	• Yokyo PG shall supply 190 MW of electricity at most to Kyushu T&D from 19:00 to 20:00.
00		19.00 to 20.00
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	hecause of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	19:26 on January 8, 2021
		•Tokyo PG shall supply 500 MW of electricity to Kansai T&D from 20:00 to 21:00.
89	Instruction	•Kansai T&D shall be supplied 500 MW of electricity by Tokyo PG from 20:00 to 21:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.

	Issued at	19:26 on January 8, 2021
		•Tohoku NW shall supply 240 MW of electricity at most to Chugoku NW from 20:00 to 21:00.
90	Instruction	•Tokyo PG shall supply 630 MW of electricity at most to Chugoku NW from 20:00 to 21:00.
		•Chugoku NW shall be supplied 670 MW electricity at most by Tohoku NW and Tokyo PG from 20:00 to 21:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	19:26 on January 8, 2021
		•Hokkaido NW shall supply 190 MW of electricity at most to Kyushu T&D from 20:00 to 21:00.
	Instruction	•Tohoku NW shall supply 2 MW of electricity to Kyushu T&D from 20:00 to 21:00.
91		•Kyushu T&D shall be supplied 200 MW of electricity at most by Hokkaido NW and Tohoku NW from 20:00 to 21:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	
	Instruction	•Chubu PG shall supply 660 MW of electricity at most to Kansal 1&D from 21:00 to 22:00.
92		•Kansal T&D shall be supplied 660 MW of electricity at most by Chubu PG from 21:00 to 22:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	
	Issueu at	Hokkaido NW shall supply 190 MW of electricity at most to Chugoku NW from 21:00 to 22:00
		•Toboku NW shall supply 500 MW of electricity at most to Chugoku NW from 21:00 to 22:00.
		•Tokyo PG shall supply 990 MW of electricity at most to Chugoku NW from 21:00 to 22:00.
	Instruction	•Chubu PG shall supply 360 MW of electricity at most to Chugoku NW from 21:00 to 22:00.
93		•Hokuriku T&D shall supply 50 MW of electricity at most to Chugoku NW from 21:00 to 22:00.
		•Chugoku NW shall be supplied 1800 MW of electricity at most by Hokkaido NW, Tohoku NW, Tokyo PG, Chubu
		PG, and Hokuriku T&D from 21:00 to 22:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	21:41 on January 8, 2021
		•Hokkaido NW shall supply 120 MW of electricity at most to Chugoku NW from 22:00 to 23:00.
	Instruction	•Chubu PG shall supply 750 MW of electricity at most to Chugoku NW from 22:00 to 23:00.
94		•Hokuriku T&D shall supply 50 MW of electricity to Chugoku NW from 22:00 to 23:00.
		•Chugoku NW shall be supplied 920 MW of electricity at most by Chubu PG and Hokuriku 1&D from 22:00 to 23:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
-	Teerredet	
	issued at	Hokkaida NW shall supply 190 MW of electricity to Churchy NW from 23:00 to 24:00
		•Chubu PG shall supply 200 MW of electricity to Chugoku NW from 23:00 to 24:00.
	Instruction	Hokuriku T&D shall supply 200 MW of electricity to Chugoku NW from 23:00 to 24:00.
95	instruction	•Chugoku NW shall be supplied 500 MW of electricity by Hokkaido NW. Chubu PG and Hokuriku T&D from 23:00
55		to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	23:21 on January 8, 2021
		•Hokuriku T&D shall supply 100 MW of electricity to Chugoku NW from 0:00 to 01:00 on January 9.
06	Instruction	•Chugoku NW shall be supplied100 MW of electricity by Hokuriku T&D from 0:00 to 01:00 on January 9.
90		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.

97	Issued at	00:29 on January 9, 2021
		•Hokuriku T&D shall supply 150 MW of electricity to Chugoku NW from 1:00 to 01:30.
	Instruction	•Chugoku NW shall be supplied150 MW of electricity by Hokuriku T&D from 1:00 to 01:30.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	00:52 on January 9, 2021
	100000 00	•Toboku NW shall supply 500 MW of electricity at most to Chugoku NW from 01:30 to 02:30
	Instruction	•Tokyo PG shall supply 1000 MW of electricity at most to Chugoku NW from 01:30 to 03:00
98	instruction	•Chugoku NW shall be supplied 1000 MW of electricity at most by Toboku NW and Tokyo PG from 01:30 to 03:00
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Ducity: ourid	in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	02:29 on January 9, 2021
	155464 40	•Tokyo PG shall supply 1500 MW of electricity at most to Chugoku NW from 03:00 to 04:00
	Instruction	•Churoku NW shall be supplied 1500 MW of electricity at most by Tokyo PG from 03:00 to 04:00
99		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Backyrounu	in the regional service area of Churchu NW due to prolonged cold weather
	Tanualat	
	Issued at	
		• Tokyo PG shall supply 1000 MW of electricity at most to Chugoku NW from 04:00 to 05:00.
100	Instruction	•Chubu PG shall supply 500 MW of electricity to Chugoku NW from 04:00 to 05:00.
100		•Chugoku NW shall be supplied 1500 MW of electricity at most by Tokyo PG and Chubu PG from 04:00 to 05:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Issued at	04:20 ON January 9, 2021
	Instruction	• Tokyo PG shall supply 630 MW of electricity at most to Kansal T&D from 05:00 to 06:00.
101		•Kansai T&D shall be supplied 630 MW of electricity at most by Tokyo PG from 05:00 to 06:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional convice area of Kanazi T&D due to prelenged cold weather
	Tanadak	
	Issued at	04:20 ON January 9, 2021
	Instruction	• Lokyo PG shall supply 500 MW of electricity to Chugoku NW from 05:00 to 06:00.
102		•Chugoku NW shall be supplied 500 MW of electricity by Tokyo PG from 05:00 to 06:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	04:20 on January 9, 2021
	Instruction	•Chubu PG shall supply 500 MW of electricity to Kyushu 1&D from 05:00 to 06:00.
103		•Kyushu 1&D shall be supplied 500 MW of electricity by Chubu PG from 05:00 to 06:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Issued at	05:08 on January 9, 2021
		• IONOKU NW SNAII SUPPLY 120 MW of electricity to Kansai 1&D from 10:30 to 11:00.
		• Tokyo PG shall supply 660 MW of electricity at most to Kansal T&D from 06:00 to 09:00.
104	Instruction	•Chubu PG shall supply 500 MW of electricity at most to Kansal T&D from 09:00 to 11:00.
104		יאמוזאו ואט snall be supplied איז פופכדוכודע at most by Tonoku NW, Tokyo PG and Chugoku PG from 06:00
		the supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		III LIE TEGIOTAL SERVICE AREA OF KANSAFTAD QUE LO DIOIONDEO COIO WEATNER.

	Issued at	05:08 on January 9, 2021
		•Tohoku NW shall supply 320 MW of electricity at most to Chugoku NW from 9:00 to 11:00.
		•Tokyo PG shall supply 450 MW of electricity at most to Chugoku NW from 6:00 to 10:00.
	Instruction	•Chubu PG shall supply 100 MW of electricity at most to Chugoku NW from 9:00 to 10:30.
105		•Chugoku NW shall be supplied 500 MW of electricity at most by Tohoku NW. Tokyo PG and Chubu PG from 06:00
		to 11:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Duckground	in the regional service area of Chugoku NW due to prolonged cold weather
	Issued at	05:08 on January 9, 2021
	155464 40	•Toboku NW shall supply 500 MW of electricity at most to Kyushu T&D from 6:00 to 11:00
	Instruction	•Tokyo PG shall supply 370 MW of electricity at most to Kyushu T&D from 6.00 to 19.00
106	Instruction	•Kvushu T&D shall be supplied 610 MW of electricity by Toboku NW and Tokyo PG from 6:00 to 11:00
100		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackyrounu	in the regional convice area of Kyushu T&D due to prolonged cold weather
	Teguad at	
	issueu at	Holymius T&D shall supply 200 MW of electricity to Kanasi T&D from 07:00 to 00:00
	.	• Hokuliku T&D shall supply 200 MW of electricity to Kalisal T&D from 09:00 to 09:00.
107	Instruction	 Shikoku T&D shall supply 60 MW of electricity at most to Kalisal T&D from 06.00 to 09.00. Kansai T&D shall be supplied 260 MW of electricity at most by Helwrity T&D and Shikoku T&D from 07.00 to 00.00
107		• Kalisal T&D shall be supplied 200 MW of electricity at most by Hokuliku T&D and Shikoku T&D from 07:00 to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Issued at	
	Instruction	•Hokuriku T&D shall supply 100 MW of electricity to Kansal T&D from 09:00 to 10:00.
108		•Kansai T&D shall be supplied 100 MW of electricity by Hokuriku T&D from 09:00 to 10:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of snortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Teerredet	
	Issued at	Usizu oli Jaliual y 9, 2021
	Instruction	• HOKULIKU T&D Shall supply 50 MW of electricity to Kalisal T&D from 10:00 to 11:00. • Kansai T&D shall be supplied EQ MW of electricity by Helgurity T&D from 10:00 to 11:00.
109		•Kalisal T&D shall be supplied 50 MW of eleculcity by Hokuliku T&D from 10.00 to 11.00.
	Background	because of shortage of supply capacity for balancing generators which is percessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	
	155ueu at	• Toboku NW shall supply 200 MW of electricity at most to Kansai T&D from 14:00 to 15:00
	Instruction	•Chubu PG shall supply 200 MW of electricity to Kansai T&D from 11:30 to 15:00
110	Instruction	Kansai T&D shall be supply 700 HW of electricity to Kansai T&D Holly NW and Chubu PC from 11:30 to 15:00
110		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackyrounu	in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	
	Issueu at	Tobaku NW shall supply 200 MW of electricity at most to Kyushy T&D from 11:20 to 15:00
		• Tohoku NW shall supply 300 MW of electricity to Kyushu T&D from 13:00 to 13:30
	Instruction	• Chubu PG shall supply 100 MW of electricity at most to Kyushu T&D from 11:30 to 14:00
111	Instruction	-Chubu FG shall supply 100 HW of electricity at most by Tobeku NW. Takyo PC and Chubu PC from 11:30
		to 15:00
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Background	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	11:11 on January 9, 2021
		•Shikoku T&D shall supply 70 MW of electricity at most to Kansai T&D from 11:30 to 15:00.
1.1.7	Instruction	 Shikoku T&D shall supply 70 MW of electricity at most to Kansai T&D from 11:30 to 15:00. Kansai T&D shall be supplied 50 MW of electricity at most by Shikoku T&D from 11:30 to 15:00.
112	Instruction	 Shikoku T&D shall supply 70 MW of electricity at most to Kansai T&D from 11:30 to 15:00. Kansai T&D shall be supplied 50 MW of electricity at most by Shikoku T&D from 11:30 to 15:00. The supply-demand status may degrade without power exchanges through cross-regional interconnection lines.
112	Instruction Background	 Shikoku T&D shall supply 70 MW of electricity at most to Kansai T&D from 11:30 to 15:00. Kansai T&D shall be supplied 50 MW of electricity at most by Shikoku T&D from 11:30 to 15:00. The supply-demand status may degrade without power exchanges through cross-regional interconnection lines because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance

113	Issued at	13:41 on January 9, 2021
		•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 15:00 to 17:00.
	Instruction	•Kansai T&D shall be supplied 50 MW of electricity by Hokuriku T&D from 15:00 to 17:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	14:19 on January 9, 2021
		•Tokyo PG shall supply 770 MW of electricity at most to Kansai T&D from 15:00 to 17:00.
	Instruction	•Chubu PG shall supply 500 MW of electricity to Kansai T&D from 15:00 to 16:00.
114		•Kansai T&D shall be supplied 900 MW of electricity at most by Tokyo PG and Chubu PG from 15:00 to 17:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	14:19 on January 9, 2021
		•Tohoku NW shall supply 500 MW of electricity at most to Kyushu T&D from 15:00 to 17:00.
	Instruction	•Tokyo PG shall supply 650 MW of electricity at most to Kyushu T&D from 15:00 to 17:00.
115		•Kyushu T&D shall be supplied 900 MW of electricity at most by Tohoku NW and Tokyo PG from 15:00 to 17:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	16:08 on January 9, 2021
		•Tokyo PG shall supply 520 MW of electricity at most to Kansai T&D from 17:00 to 19:00.
116	Instruction	•Kansai T&D shall be supplied 520 MW of electricity at most by Tokyo PG from 17:00 to 19:00.
110		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	16:08 on January 9, 2021
	Instruction	•Tokyo PG shall supply 570 MW of electricity at most to Kyushu T&D from 17:00 to 19:00.
117		•Kyushu T&D shall be supplied 570 MW of electricity at most by Tokyo PG from 17:00 to 19:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	18:39 on January 9, 2021
	Instruction	•Tokyo PG shall supply 570 MW of electricity at most to Kansai T&D from 19:00 to 21:00.
118		•Kansai T&D shall be supplied 570 MW of electricity at most by Tokyo PG from 19:00 to 21:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansal T&D due to prolonged cold weather.
	Issued at	
		• FOROKU NWY SHAILSUPPLY 330 MWY OF electricity at most to Kyushu T&D from 20:00 to 21:00.
110	Instruction	• Tokyo PG shall supply 570 MW of electricity at most to kyushu T&D from 19:00 to 21:00.
119		• Kydshu 1&D shall be supplied 570 MW of electricity at most by Tonoku NW and Tokyo PG from 19:00 to 21:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional convice area of Kuushu T&D due to prolonged cold weather
	Iccued at	
	Issued at	- Tobaku NW chall cumply 450 MW of electricity at most to Kansai T&D from 21:00 to 24:00
		•Takyo PG shall supply 350 MW of electricity at most to Kansai T&D from 21:00 to 24:00.
	Instruction	Hokuriku T&D shall supply 500 MW of electricity to Kansai T&D from from 21:00 to 24:00.
120	mound	•Kansai T&D shall be supplied 850 MW of electricity at most by Toboku NW. Tokyo PG and Hokuriku T&D from 21.00
120		to 24:00.
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply capacity for balancing
	J ALL	in the regional service area of Kansai T&D due to prolonged cold weather.

121	Issued at	20:42 on January 9, 2021
		•Tohoku NW shall supply 430 MW of electricity at most to Kyushu T&D from 21:00 to 24:00.
	Instruction	•Kyushu T&D shall be supplied 430 MW of electricity at most by by Tohoku NW from 21:00 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	-	in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	23:25 on January 9, 2021
		•Tokyo PG shall supply 600 MW of electricity at most to Kansai T&D from 00:00 to 06:00 on January 10.
		•Hokuriku T&D shall supply 100 MW of electricity to Kansai T&D from from 00:00 to 06:00 on January 10.
100	Instruction	•Kansai T&D shall be supplied 700 MW of electricity at most by Tokyo PG and Hokuriku T&D from 00:00 to 06:00 on
122		January 10.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	23:25 on January 9, 2021
	Turatur atian	•Tokyo PG shall supply 250 MW of electricity at most to Kyushu T&D from 03:00 to 06:00.
173	Instruction	•Kyushu T&D shall be supplied 250 MW of electricity at most by by Tokyo PG from 03:00 to 06:00.
125		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	03:15 on January 10, 2021
	Instruction	•Hokuriku T&D shall supply 100 MW of electricity to Kansai T&D from from 05:00 to 06:00.
124		•Kansai T&D shall be supplied 100 MW of electricity by Hokuriku T&D from 05:00 to 06:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	05:38 on January 10, 2021
		•Tokyo PG shall supply 410 MW of electricity at most to Kansai T&D from 06:00 to 09:00.
		•Chubu PG shall supply 550 MW of electricity to Kansai T&D from 07:00 to 09:00.
105	Instruction	•Hokuriku 1&D shall supply 50 MW of electricity to Kansai 1&D from from 06:00 to 09:00.
125		•Kansai T&D shall be supplied 970 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 06:00
		to 09:00.
		he supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	васкдгоипо	in the regional convice area of Kansai T&D due to prolonged cold weather
	Iccued at	05:38 op January 10, 2021
	issueu at	• Tokyo PC shall supply 440 MW of electricity at most to Kyushu T&D from 06:00 to 00:00
	Instruction	•Kyushu T&D shall be supplied 440 MW of electricity at most by by Tokyo PG from 06:00 to 09:00
126		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Baenground	in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	06:23 on January 10, 2021
		•Tokyo PG shall supply 370 MW of electricity at most to Kansai T&D from 08:00 to 09:00.
	Instruction	•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from from 08:00 to 09:00.
127		•Kansai T&D shall be supplied 420 MW of electricity at most by Tokyo PG and Hokuriku T&D 08:00 to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	-	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	06:23 on January 10, 2021
	Turat	•Hokuriku T&D shall supply 50 MW of electricity to Kyushu T&D from from 07:00 to 08:00.
120	Instruction	•Kyushu T&D shall be supplied 50 MW of electricity by Hokuriku T&D 07:00 to 08:00.
128		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.

	Issued at	07:43 on January 10, 2021
129		•Tokyo PG shall supply 180 MW of electricity to Kansai T&D from 09:00 to 09:30.
		•Chubu PG shall supply 550 MW of electricity at most to Kansai T&D from 09:00 to 10:00.
	Instruction	•Hokuriku T&D shall supply 200 MW of electricity to Kansai T&D from from 09:00 to 09:30.
		·Kansai T&D shall be supplied 930 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 09:00
		to 10:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	07:43 on January 10, 2021
		•Tokyo PG shall supply 690 MW of electricity at most to Kyushu T&D from 09:00 to 12:00.
		•Chubu PG shall supply 550 MW of electricity at most to Kyushu T&D from 09:30 to 12:00.
	Instruction	•Hokuriku T&D shall supply 200 MW of electricity to Kyushu T&D from from 09:30 to 12:00.
130		•Kyushu T&D shall be supplied 1440 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 09:00
		to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	08:20 on January 10, 2021
	Instruction	•Shikoku T&D shall supply 140 MW of electricity to Kansai T&D from 09:30 to 10:00.
131		•Kansai T&D shall be supplied 140 MW of electricity by Shikoku T&D from 09:30 to 10:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	09:02 on January 10, 2021
	Instruction	•Hokuriku T&D shall supply 100 MW of electricity to Kyushu T&D from from 11:00 to 12:00.
132		•Kyushu 1&D shall be supplied 100 MW of electricity by Hokuriku 1&D 11:00 to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional convice area of Kuushu T&D due to prelenged cold weather
	Iccued at	
	155000 00	•Tokyo PG shall supply 340 MW of electricity at most to Kyushu T&D from 12:00 to 15:00
		•Chubu PG shall supply 550 MW of electricity to Kyushu T&D from 12:00 to 15:00
	Instruction	•Hokuriku T&D shall supply 250 MW of electricity to Kyushu T&D from from 12:00 to 15:00
133	1100 00001	•Kvushu T&D shall be supplied 1140 MW of electricity at most by Tokyo PG. Chubu PG and Hokuriku T&D from 12:00
		to 15:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	-	in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	12:05 on January 10, 2021
	_	•Shikoku T&D shall supply 140 MW of electricity at most to Kansai T&D from 14:30 to 16:00.
124	Instruction	·Kansai T&D shall be supplied 140 MW of electricity at most by Shikoku T&D from 14:30 to 16:00.
154		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	14:13 on January 10, 2021
		•Tokyo PG shall supply 670 MW of electricity at most to Kyushu T&D from 15:00 to 16:00.
		•Chubu PG shall supply 550 MW of electricity to Kyushu T&D from 15:00 to 16:00.
	Instruction	•Hokuriku T&D shall supply 350 MW of electricity to Kyushu T&D from from 15:00 to 16:00.
135		•Kyushu T&D shall be supplied 1570 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 15:00
		to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.

136	Issued at	15:10 on January 10, 2021
		•Tokyo PG shall supply 290 MW of electricity at most to Kansai T&D from 16:00 to 18:00.
		•Chubu PG shall supply 550 MW of electricity to Kansai T&D from 16:00 to 18:00.
	Instruction	•Hokuriku T&D shall supply 350 MW of electricity at most to Kansai T&D from from 16:00 to 18:00.
		•Kansai T&D shall be supplied 1000 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 16:00
		to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	15:10 on January 10, 2021
	Instruction	•Tokyo PG shall supply 1090 MW of electricity at most to Kyushu T&D from 16:00 to 18:00.
137		•Kyushu 1&D shall be supplied 1090 MW of electricity at most by by Tokyo PG from 16:00 to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of snortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Teerredet	17-22 op Japuary 10, 2021
	issued at	Talua PC shall supply 640 MW of electricity at most to Kansai T&D from 18:00 to 21:00
	Instruction	• Tokyo PG shall supply 640 MW of electricity at most to Kalisal T&D from 16:00 to 21:00.
138		The supply-domand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Kansai T&D due to prolonged cold weather
	Issued at	17:22 on January 10, 2021
	155000 00	•Tokyo PG shall supply 590 MW of electricity at most to Kyushu T&D from 18:00 to 21:00
	Instruction	•Kyushu T&D shall be supplied 590 MW of electricity at most by Tokyo PG from 18:00 to 21:00.
139		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	20:38 on January 10, 2021
		•Hokuriku T&D shall supply 50 MW of electricity to Kyushu T&D from from 22:00 to 24:00.
140	Instruction	•Kyushu T&D shall be supplied 50 MW of electricity at most by Hokuriku T&D from 22:00 to 24:00.
140		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	22:51 on January 10, 2021
	Instruction	•Tokyo PG shall supply 600 MW of electricity to Kansai T&D from 23:30 to 24:00.
141		•Kansai T&D shall be supplied 600 MW of electricity by Tokyo PG from 23:30 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	23:09 on January 10, 2021
	Instruction	• Tokyo PG shall supply 600 MW of electricity to Kansai T&D from 00:00 to 01:00 on January 11.
142		•Kansai T&D shall be supplied 600 MW of electricity by Tokyo PG from 00:00 to 01:00 on January 11.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional convice area of Kanazi T&D due to prelenged cold weather
	Iccued at	
	issued at	• Tobaku NW shall supply 600 MW of electricity to Kansai T&D from 01:00 to 02:00
	Instruction	•Kansai T&D shall be supplied 600 MW of electricity by Toboku NW from 01:00 to 02:00
143		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	00:47 on January 11, 2021
	Inchast	•Hokkaido NW shall supply 140 MW of electricity at most to Kansai T&D from 02:00 to 08:00.
144	Instruction	·Kansai T&D shall be supplied 140 MW of electricity at most by Hokkaido NW from 02:00 to 08:00.
144		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		In the regional service area of Kansal 18D due to prolonged cold weather.

145	Issued at	00:55 on January 11, 2021
	_	•Chubu PG shall supply 470 MW of electricity to Kansai T&D from 01:30 to 02:00.
	Instruction	•Kansai T&D shall be supplied 470 MW of electricity by Chubu PG from 01:30 to 02:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	-	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	01:26 on January 11, 2021
		•Tohoku NW shall supply 450 MW of electricity to Kansai T&D from 02:00 to 03:00.
	Instruction	•Chubu PG shall supply 660 MW of electricity at most to Kansai T&D from 02:00 to 03:00.
146		•Kansai T&D shall be supplied 1110 MW of electricity at most by Tohoku NW and Chubu PG from 02:00 to 03:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	01:53 on January 11, 2021
		•Tohoku NW shall supply 450 MW of electricity at most to Kansai T&D from 03:00 to 06:00.
		•Tokyo PG shall supply 300 MW of electricity at most to Kansai T&D from 03:00 to 04:00.
	Instruction	•Chubu PG shall supply 790 MW of electricity at most to Kansai T&D from 03:00 to 06:00.
147	1100 00001	•Kansai T&D shall be supplied 1240 MW of electricity at most by Tohoku NW. Tokyo PG and Chubu PG from 03:00
,		
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Duckground	in the regional service area of Kansai T&D due to prolonged cold weather
	Issued at	04·54 on January 11, 2021
	155000 00	•Toboku NW shall supply 720 MW of electricity at most to Kansai T&D from 06:00 to 08:00
		•Tokyo PG shall supply 900 MW of electricity at most to Kansai T&D from 08:00 to 09:00
	Instruction	•Chubu PG shall supply 1170 MW of electricity at most to Kansai T&D from 06:00 to 09:00.
148	Instruction	•Kansai T&D shall be supplied 1670 MW of electricity at most by Toboku NW. Tokyo PC and Chubu PC from 06:00
140		to 00.00
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	
	155000 00	•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 05:30 to 07:00
	Instruction	•Kansai T&D shall be supplied 50 MW of electricity by Hokuriku T&D from 05.30 to 07.00 .
149		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Packground	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	
	issued at	Tobaku NW shall supply 280 MW of electricity at most to Kansai T&D from 00.30 to 12:00
		• Tohoku NW shall supply 200 NW of electricity at most to Kansai T&D from 09:00 to 12:00.
	Instruction	•Chubu PG shall supply 400 MW of electricity at most to Kansai T&D from 09:00 to 12:00.
150	Instruction	•Kansai T&D shall be supplied 1590 MW of electricity at most by Toboku NW. Tokyo PG and Chubu PG from 09:00
150		to 12:00
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	11:38 on January 11, 2021
	issued al	• Toboku NW shall supply 950 MW of electricity at most to Kansai T&D from 12:00 to 15:00
		•Tokyo PC shall supply 790 MW of electricity at most to Kansai T&D from 12:00 to 14:00
	Instruction	Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 12:00 to 15:00
151	manuction	•Kansai T&D shall be supplied 1340 MW of electricity at most by Toboku NW. Tokyo PG and Hokuriku T&D from
131		12:00 to 15:00
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
		The suppry demand status may degrade manour power exchanges anough closs regional method method method
	Background	pecause of shortage of supply capacity for balancing generators which is necessary for supply-demand balance

152	Issued at	12:51 on January 11, 2021
		•Tohoku NW shall supply 250 MW of electricity at most to Kansai T&D from 13:30 to 15:00.
	Instruction	•Kansai T&D shall be supplied 250 MW of electricity at most by Tohoku NW from 13:30 to 15:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	5	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	14:20 on January 11, 2021
		•Tohoku NW shall supply 800 MW of electricity at most to Kansai T&D from 15:00 to 18:00.
		•Chubu PG shall supply 400 MW of electricity to Kansai T&D from 15:00 to 16:00.
	Instruction	•Hokuriku T&D shall supply 200 MW of electricity at most to Kansai T&D from 15:00 to 17:00.
153		•Kansai T&D shall be supplied 1400 MW of electricity at most by Tohoku NW. Chubu PG and Hokuriku T&D from
		15:00 to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	g	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	16:52 on January 11, 2021
	100000 00	•Toboku NW shall supply 250 MW of electricity at most to Kansai T&D from 18:00 to 21:00
	Instruction	•Chubu PG shall supply 550 MW of electricity to Kansai T&D from 20:00 to 21:00
154	instruction	•Kansai T&D shall be supplied 750 MW of electricity at most by Toboku NW and Chubu PG from 18:00 to 21:00
10 .		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackground	in the regional service area of Kansai T&D due to prolonged cold weather
	Iccued at	19:47 on January 11, 2021
	issueu at	Tobaku NW shall supply 780 MW of electricity at most to Kansai T&D from 21:00 to 24:00
		• Tokyo PC shall supply 630 MW of electricity at most to Kansai T&D from 22:00 to 23:00
	Instruction	•Chubu PC shall supply 550 MW of electricity to Kansai T&D from 21:00 to 24:00
155	Insu ucuon	•Kansai T&D shall be supplied 1590 MW of electricity at most by Toboky NW. Tokyo PC and Chuby PC from 21:00
155		to 24.00
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	background	in the regional service area of Kansai T&D due to prolonged cold weather
	Issued at	23:21 on January 11, 2021
	155000 00	•Tokyo PG shall supply 1320 MW of electricity to Kansai T&D from 00:00 to 00:30 on January 12
		•Chubu PG shall supply 500 MW of electricity to Kansai T&D from 00:00 to 00:30 on January 12
	Instruction	•Hokuriku T&D shall supply 500 mW of electricity to Kansai T&D from 00:00 to 00:30 on January 12
156	instruction	•Kansai T&D shall be supplied 1890 MW of electricity by Tokyo PG. Chubu PG and Hokuriku T&D from 00:00 to 00:30
100		on January 12
		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Buckground	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	23:21 on January 11, 2021
		•Tokyo PG shall supply 410 MW of electricity to Shikoku T&D from 00:00 to 00:30 on January 12
	Instruction	•Shikoku T&D shall be supplied 410 MW of electricity by Tokyo PG from 00:00 to 00:30 on January 12.
157		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Baenground	in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	23:54 on January 11, 2021
		•Tokyo PG shall supply 640 MW of electricity at most to Kansai T&D from 00.30 to 03.00
		•Chubu PG shall supply 500 MW of electricity to Kansai T&D from 00:30 to 03:00.
	Instruction	•Hokuriku T&D shall supply 70 MW of electricity to Kansai T&D from 00:30 to 03:00.
158		•Kansai T&D shall be supplied 1210 MW of electricity at most by Tokyo PG. Chubu PG and Hokuriku T&D from 00:30
		to 03:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.

	Issued at	23:54 on January 11, 2021
		•Tokvo PG shall supply 400 MW of electricity at most to Shikoku T&D from 00:30 to 03:00.
	Instruction	•Shikoku T&D shall be supplied 400 MW of electricity at most by Tokyo PG from 00:30 to 03:00.
159		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Ducity	in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	00:56 on January 12, 2021
	1000.00	•Tohoku NW shall supply 130 MW of electricity at most to Shikoku T&D from 01:30 to 03:00.
	Instruction	•Shikoku T&D shall be supplied 130 MW of electricity at most by Chugoku NW from 01:30 to 03:00.
160		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Duckyrean	in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	01:16 on January 12, 2021
		•Hokuriku T&D shall supply 100 MW of electricity to Kansai T&D from 02:00 to 03:00.
	Instruction	•Kansai T&D shall be supplied 100 MW of electricity by Hokuriku T&D from 02:00 to 03:00.
161		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	02:04 on January 12, 2021
		•Tokvo PG shall supply 830 MW of electricity at most to Kansai T&D from 03:00 to 06:00.
		•Chubu PG shall supply 500 MW of electricity to Kansai T&D from 03:00 to 06:00.
	Instruction	•Hokuriku T&D shall supply 100 MW of electricity to Kansai T&D from 03:00 to 06:00.
162		•Kansai T&D shall be supplied 1430 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 03:00
		to 06:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	02:04 on January 12, 2021
		•Tokyo PG shall supply 190 MW of electricity at most to Shikoku T&D from 03:00 to 06:00.
162	Instruction	•Shikoku T&D shall be supplied 190 MW of electricity at most by Tokyo PG from 03:00 to 06:00.
105		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	02:04 on January 12, 2021
	Lectruction	•Tokyo PG shall supply 130 MW of electricity at most to Chugoku NW from 04:30 to 06:00.
164	Instruction	•Chugoku NW shall be supplied 130 MW of electricity at most by Tokyo PG from 04:30 to 06:00.
104		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	04:16 on January 12, 2021
	Instruction	•Tohoku NW shall supply 430 MW of electricity at most to Kansai T&D from 06:00 to 08:00.
165	Instruction	•Kansai T&D shall be supplied 430 MW of electricity at most by Tohoku NW from 06:00 to 08:00.
100		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	04:16 on January 12, 2021
	Instruction	•Tohoku NW shall supply 540 MW of electricity at most to Shikoku T&D from 06:00 to 08:00.
166	Instruction.	•Shikoku T&D shall be supplied 540 MW of electricity at most by Tohoku NW from 06:00 to 08:00.
100		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	04:16 on January 12, 2021
	Instruction	•Tohoku NW shall supply 500 MW of electricity to Chugoku NW from 06:00 to 08:00.
167	instruction	•Chugoku NW shall be supplied 500 MW of electricity by Tohoku NW from 06:00 to 08:00.
107		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	1 1	In the regional service area of Chugoku NW que to projonged cold weather.

168	Issued at	08:52 on January 12, 2021
	Instruction	•Chubu PG shall supply 300 MW of electricity to Kansai T&D from 09:30 to 11:00.
	msuucuom	•Kansai T&D shall be supplied 300 MW of electricity by Chubu PG from 09:30 to 11:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	09:51 on January 12, 2021
	Instruction	•Tohoku NW shall supply 130 MW of electricity at most to Shikoku T&D from 10:30 to 12:00.
169		•Shikoku T&D shall be supplied 130 MW of electricity at most by Tohoku NW from 10:30 to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	11:20 on January 12, 2021
		•Chubu PG shall supply 150 MW of electricity to Shikoku 1&D from 12:00 to 14:00.
170	Instruction	•Kyushu T&D shall supply 300 MW of electricity to Snikoku T&D from 12:00 to 14:00.
170		•Snikoku T&D shall be supplied 450 MW of electricity by Chubu PG and Kyushu T&D from 12:00 to 14:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	in the regional convice area of Shikeku T&D due to prelonged cold weather
	Teguad at	
	Issued at	Tobaku NW shall supply 110 MW of electricity at most to Kapsai T&D from 12:00 to 12:20
	Instruction	• Kansai T&D shall be supplied 110 MW of electricity at most by Toboku NW from 12:00 to 13:30
171		The supply-demand status may degrade without nower exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Duckground	in the regional service area of Kansai T&D due to prolonged cold weather
	Issued at	13:10 on January 12, 2021
		•Chubu PG shall supply 500 MW of electricity to Kansai T&D from 14:00 to 16:00.
	Instruction	•Kansai T&D shall be supplied 500 MW of electricity by Chubu PG from 14:00 to 16:00.
1/2		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	13:22 on January 12, 2021
	Turation	•Tohoku NW shall supply 160 MW of electricity at most to Shikoku T&D from 14:00 to 16:00.
173	Instruction	•Shikoku T&D shall be supplied 160 MW of electricity at most by Tohoku NW from 14:00 to 16:00.
175		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	14:05 on January 12, 2021
	Instruction	•Tohoku NW shall supply 380 MW of electricity at most to Kansai T&D from 14:30 to 16:00.
174		•Kansai T&D shall be supplied 380 MW of electricity at most by Tohoku NW from 14:30 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	15:19 on January 12, 2021
		•Hokkaido NW shall supply 140 MW of electricity at most to kansal 1&D from 16:00 to 20:00.
175	Instruction	• TOROKU NW Shall Supply 400 MW of electricity to Kansal T&D from 16:00 to 10:30.
		The supply demand status may degrade without power exchanges through cross regional interconnection lines
	Packground	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Dackyrounu	in the regional service area of Kansai T&D due to prolonged cold weather
	Issued at	15:19 on January 12, 2021
	155ucu at	•Hokkaido NW shall supply 140 MW of electricity to Shigoku T&D from 20:00 to 24:00
	Instruction	•Shikoku T&D shall be supplied 140 MW of electricity by Hokkaido NW from 20:00 to 24:00.
176		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.

	Issued at	16:16 on January 12, 2021
177		•Hokkaido NW shall supply 300 MW of electricity at most to Kansai T&D from 17:00 to 19:00.
		•Tokyo PG shall supply 500 MW of electricity to Kansai T&D from 17:00 to 19:00.
	Instruction	•Chubu PG shall supply 300 MW of electricity to Kansai T&D from 17:00 to 19:00.
		•Kansai T&D shall be supplied 830 MW of electricity at most by Hokkaido NW, Tokyo PG and Chubu PG from 17:00
		to 19:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	18:23 on January 12, 2021
		•Tohoku NW shall supply 410 MW of electricity at most to Chugoku NW from 20:00 to 22:00.
	Instruction	•Chubu PG shall supply 300 MW of electricity at most to Chugoku NW from 19:00 to 22:00.
178		•Chugoku NW shall be supplied 710 MW of electricity at most by Tohoku NW and Chubu PG from 19:00 to 22:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	18:23 on January 12, 2021
		•Tohoku NW shall supply 130 MW of electricity at most to Shikoku T&D from 19:00 to 22:00.
	Instruction	•Chubu PG shall supply 80 MW of electricity at most to Shikoku T&D from 19:00 to 20:00.
179		•Shikoku T&D shall be supplied 190 MW of electricity at most by Tohoku NW and ChubuPG from 19:00 to 22:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	21:19 on January 12, 2021
		•Tohoku NW shall supply 1010 MW of electricity at most to Chugoku NW from 22:00 to 24:00.
		•Tokyo PG shall supply 830 MW of electricity at most to Chugoku NW from 22:00 to 24:00.
		•Chubu PG shall supply 30 MW of electricity at most to Chugoku NW from 22:00 to 24:00.
100	Instruction	•Hokuriku T&D shall supply 110 MW of electricity to Chugoku NW from 23:00 to 24:00.
100		·Chugoku NW shall be supplied 1880 MW of electricity at most by Tohoku NW, Tokyo PG, Chubu PG, and Hokuriku
		T&D from 22:00 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	21:19 on January 12, 2021
	Instruction	•Tohoku NW shall supply 400 MW of electricity at most to Shikoku T&D from 22:00 to 24:00.
181		•Shikoku T&D shall be supplied 400 MW of electricity at most by Tohoku NW from 22:00 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	23:34 on January 12, 2021
		•Tokyo PG shall supply 800 MW of electricity at most to Kansai T&D from 00:00 to 06:00 on January 13.
		•Chubu PG shall supply 500 MW of electricity at most to Kansai T&D from 00:00 to 06:00 on January 13.
	Instruction	•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 00:00 to 01:30 on January 13.
182		•Kansai T&D shall be supplied 1350 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 00:00
		to 06:00 on January 13.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	23:34 on January 12, 2021
	Instruction	•Chubu PG shall supply 1000 MW of electricity at most to Chugoku NW from 00:00 to 06:00 on January 13.
183		• Cnugoku NW shall be supplied 1000 MW of electricity at most by Chubu PG from 00:00 to 06:00 on January 13.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.

10/	Issued at	23:34 on January 12, 2021
		•Tohoku NW shall supply 700 MW of electricity at most to Shikoku T&D from 00:00 to 06:00 on January 13.
	Instruction	•Tokyo PG shall supply 300 MW of electricity at most to Shikoku T&D from 00:30 to 06:00 on January 13.
		·Shikoku T&D shall be supplied 700 MW of electricity at most by Tohoku NW and Tokyo PG from 00:00 to 06:00
104		on January 13.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
185	Issued at	05:11 on January 13, 2021
	Instruction	•Chubu PG shall supply 410 MW of electricity at most to Shikoku T&D from 06:00 to 09:00.
		•Kansai T&D shall be supplied 410 MW of electricity at most by Chubu PG from 06:00 to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	05:11 on January 13, 2021
		•Tohoku NW shall supply 470 MW of electricity at most to Chugoku NW from 06:00 to 08:00.
		•Tokyo PG shall supply 1240 MW of electricity at most to Chugoku NW from 06:00 to 09:00.
	Instruction	•Chubu PG shall supply 550 MW of electricity at most to Chugoku NW from 06:00 to 09:00.
186		·Chugoku NW shall be supplied 1500 MW of electricity at most by Tohoku NW, Tokyo PG, and Chubu PG from 06:00
		to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	05:11 on January 13, 2021
		•Tohoku NW shall supply 700 MW of electricity at most to Shikoku T&D from 06:00 to 08:00.
	Instruction	•Tokyo PG shall supply 150 MW of electricity at most to Shikoku T&D from 08:00 to 09:00.
187		·Shikoku T&D shall be supplied 700 MW of electricity at most by Tohoku NW and Tokyo PG from 06:00 to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	05:44 on January 13, 2021
		•Tokyo PG shall supply 150 MW of electricity to Shikoku T&D from 08:00 to 09:00.
188	Instruction	•Shikoku T&D shall be supplied 150 MW of electricity by Tokyo PG from 08:00 to 09:00.
100		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	08:01 on January 13, 2021
		•Tokyo PG shall supply 810 MW of electricity at most to Kansai T&D from 10:00 to 12:00.
	Instruction	•Chubu PG shall supply 800 MW of electricity at most to Kansai T&D from 09:00 to 12:00.
189		•Kansai T&D shall be supplied 1210 MW of electricity at most by Tokyo PG and Chubu PG from 09:00 to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	08:01 on January 13, 2021
		•Tokyo PG shall supply 1360 MW of electricity at most to Chugoku NW from 09:00 to 10:30.
	Instruction	•Chubu PG shall supply 200 MW of electricity at most to Chugoku NW from 09:00 to 10:00.
190		•Chugoku NW shall be supplied 1500 MW of electricity at most byTokyo PG, and Chubu PG from 09:00 to 10:30.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	08:01 on January 13, 2021
	Instruction	•Tokyo PG shall supply 460 MW of electricity at most to Shikoku T&D from 09:00 to 12:00.
191		•Shikoku T&D shall be supplied 460 MW of electricity at most by Tokyo PG from 09:00 to 12:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather

	Issued at	08:53 on January 13, 2021
192	_	•Tokyo PG shall supply 340 MW of electricity at most to Shikoku T&D from 10:30 to 12:00.
	Instruction	•Shikoku T&D shall be supplied 340 MW of electricity at most by Tokyo PG from 10:30 to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
193	Issued at	10:20 on January 13, 2021
	.	•Kyushu T&D shall supply 400 MW of electricity to Kansai T&D from 11:30 to 12:00.
	Instruction	•Kansai T&D shall be supplied 400 MW of electricity by Kyushu T&D from 11:30 to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	11:16 on January 13, 2021
		•Tokyo PG shall supply 1320 MW of electricity at most to Kansai T&D from 12:00 to 15:00.
		•Chubu PG shall supply 1280 MW of electricity at most to Kansai T&D from 12:00 to 14:30.
	Instruction	•Kyushu T&D shall supply 350 MW of electricity at most to Kansai T&D from 12:00 to 13:30.
194		•Kansai T&D shall be supplied 2040 MW of electricity at most by Tokyo PG, Chubu PG and Kyushu T&D from 12:00
		to 15:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	11:16 on January 13, 2021
		•Tokyo PG shall supply 60 MW of electricity at most to Shikoku T&D from 14:30 to 15:00.
		•Chubu PG shall supply 200 MW of electricity at most to Shikoku T&D from 12:00 to 15:00.
105	Instruction	•Kyushu 1&D shall supply 4/0 MW of electricity at most to Shikoku 1&D from 12:00 to 14:00.
195		•Shikoku T&D shall be supplied 470 MW of electricity at most by Tokyo PG, Chubu PG and Kyushu T&D from 12:00
		to 15:00.
	De elseves ad	he supply demand status may degrade without power exchanges through cross-regional interconnection lines
	васкдгоипо	in the regional service area of Shikoku T&D due to prolonged cold weather
	Issued at	14:10 on January 13, 2021
	155000 00	•Tokyo PG shall supply 130 MW of electricity at most to Shikoku T&D from 16:00 to 18:00
	Instruction	•Chubu PG shall supply 470 MW of electricity at most to Shikoku T&D from 15:00 to 16:00.
196		•Shikoku T&D shall be supplied 470 MW of electricity at most by Tokyo PG and Chubu PG from 15:00 to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	14:10 on January 13, 2021
		•Tokyo PG shall supply 1580 MW of electricity at most to Kyushu T&D from 15:00 to 18:00.
	Instruction	•Chubu PG shall supply 100 MW of electricity at most to Kyushu T&D from 15:00 to 16:00.
197		•Kyushu T&D shall be supplied 1600 MW of electricity at most by Tokyo PG and Chubu PG from 15:00 to 18:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kyushu T&D due to prolonged cold weather.
	Issued at	19:28 on January 13, 2021
		•Tokyo PG shall supply 400 MW of electricity at most to Chugoku NW from 21:00 to 23:00.
		•Chubu PG shall supply 1000 MW of electricity at most to Chugoku NW from 21:00 to 24:00.
198	Instruction	•Hokuriku T&D shall supply 50 MW of electricity at most to Chugoku NW from 22:00 to 23:00.
		•Chugoku NW shall be supplied 1000 MW of electricity at most by Tokyo PG, Chubu PG and Hokuriku T&D from 21:00
		to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		In the regional service area of Chugoku NW due to prolonged cold weather.

199	Issued at	19:28 on January 13, 2021
		•Tokyo PG shall supply 460 MW of electricity at most to Shikoku T&D from 20:30 to 24:00.
	Instruction	•Shikoku T&D shall be supplied 460 MW of electricity at most by Tokyo PG from 20:30 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	5	in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	19:54 on January 13, 2021
200		•Tohoku NW shall supply 800 MW of electricity at most to Kansai T&D from 20:30 to 24:00.
	Instruction	•Tokyo PG shall supply 780 MW of electricity at most to Kansai T&D from 20:30 to 24:00.
		•Kansai T&D shall be supplied 1130 MW of electricity at most by Tohoku NW and Tokyo PG from 20:30 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	22:32 on January 13, 2021
		•Chubu PG shall supply 400 MW of electricity at most to Kansai T&D from 00:00 to 08:00 on January 14.
		•Hokuriku T&D shall supply 50 MW of electricity at most to Kansai T&D from 00:00 to 01:00 on January 14.
	Instruction	•Kansai T&D shall be supplied 450 MW of electricity at most by Chubu PG and Hokuriku T&D from 00:00 to 08:00 on
201		January 14.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	5	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	01:54 on January 14, 2021
		•Hokuriku T&D shall supply 100 MW of electricity at most to Kansai T&D from 02:30 to 06:00.
	Instruction	•Kansai T&D shall be supplied 100 MW of electricity at most by Hokuriku T&D from 02:30 to 06:00.
202		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	08:12 on January 14, 2021
		•Chubu PG shall supply 740 MW of electricity at most to Kansai T&D from 09:00 to 11:30.
	Instruction	•Kyushu T&D shall supply 1040 MW of electricity at most to Kansai T&D from 09:00 to 12:00.
203		·Kansai T&D shall be supplied 1680 MW of electricity at most by Chubu PG and Kyushu T&D from 09:00 to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	11:22 on January 14, 2021
		•Chubu PG shall supply 740 MW of electricity at most to Kansai T&D from 12:00 to 16:00.
		•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 12:30 to 13:30.
	Turaturatian	•Shikoku T&D shall supply 200 MW of electricity to Kansai T&D from 12:00 to 13:00.
204	Instruction	·Kyushu T&D shall supply 810 MW of electricity at most to Kansai T&D from 12:00 to 16:00.
204		·Kansai T&D shall be supplied 1520 MW of electricity at most by Chubu PG, Hokuriku T&D, Shikoku T&D and Kyushu
		T&D from 12:00 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	14:37 on January 14, 2021
	Instruction	•Hokuriku T&D shall supply 100 MW of electricity to Kansai T&D from 15:30 to 16:00.
205		•Kansai T&D shall be supplied 100 MW of electricity by Hokuriku T&D from 15:30 to 16:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	issued at	15:20 OII January 14, 2021
		•ποκυτικα τω shall supply 100 MW of electricity at most to Kansal T&D from 16:00 to 21:00.
206	Instruction	- NYUSHU TAD SHALL SUPPLY ODD MWY OF ELECTICITY AT MOST TO KANSAL TAD FROM 16:00 TO 17:00.
		The supply-demand status may degrade without newer exchanges through cross regional interconnection lined
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	_u.uground	in the regional service area of Kansai T&D due to prolonged cold weather.

	Issued at	19:58 on January 14, 2021
		•Chubu PG shall supply 800 MW of electricity at most to Kansai T&D from 22:30 to 24:00.
	Instruction	•Hokuriku T&D shall supply 50 MW of electricity to Kansai T&D from 21:00 to 23:00.
207		•Kansai T&D shall be supplied 800 MW of electricity at most by Chubu PG and Hokuriku T&D from 21:00 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
208	Issued at	22:17 on January 14, 2021
		•Tokyo PG shall supply 600 MW of electricity to Kansai T&D from 00:00 to 06:00 on January. 15.
	Instruction	•Chubu PG shall supply 400 MW of electricity at most to Kansai T&D from 00:00 to 06:00 on January. 15.
		•Kansai T&D shall be supplied 1000 MW of electricity at most by Tokyo PG and Chubu PG from 00:00 to 06:00 on
		January. 15.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	22:17 on January 14, 2021
		•Chubu PG shall supply 300 MW of electricity at most to Chugoku NW from 03:00 to 06:00 on January. 15.
	Instruction	•Kyushu T&D shall supply 500 MW of electricity to Chugoku from 00:00 to 03:00 on January. 15.
209	Instruction	•Chugoku NW shall be supplied 500 MW of electricity at most by Chubu PG and Kyushu T&D from 00:00 to 06:00 on
		January. 15.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Chugoku NW due to prolonged cold weather.
	Issued at	07:34 on January 15, 2021
	Instruction	•Kyushu T&D shall supply 9/0 MW of electricity at most to Kansai T&D from 09:00 to 11:30.
210		•Kansal T&D shall be supplied 970 MW of electricity at most by Kyushu T&D from 09:00 to 11:30.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of snortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Tequad at	11:12 on January 15, 2021
	issueu at	Takyo PC shall supply 1000 MW of electricity to Kansai T&D from 12:00 to 12:00
	Instruction	•Kyushu T&D shall supply 690 MW of electricity at most to Kansai T&D from 14:30 to 16:00
211	Instruction	•Kansai T&D shall be supplied 1000 MW of electricity at most by Tokyo PG and Kyushu T&D from 12:00 to 16:00
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	g	in the regional service area of Kansai T&D due to prolonged cold weather.
	Issued at	20:47 on January 15, 2021
		•Kyushu T&D shall supply 300 MW of electricity to Hokuriku T&D from 22:00 to 24:00.
	Instruction	•Hokuriku T&D shall be supplied 300 MW of electricity by Kyushu T&D from 22:00 to 24:00.
212		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	20:47 on January 15, 2021
	.	•Kyushu T&D shall supply 200 MW of electricity to Shikoku T&D from 22:00 to 24:00.
212	Instruction	•Shikoku T&D shall be supplied 200 MW of electricity by Kyushu T&D from 22:00 to 24:00.
215		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	22:29 on January 15, 2021
	Instruction	•Kyushu T&D shall supply 200 MW of electricity to Hokuriku T&D from 00:00 to 03:00 on January 16.
		•Hokuriku T&D shall be supplied 200 MW of electricity by Kyushu T&D from 00:00 to 03:00 on January 16.
214		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
	Background	in the regional service area of Hokuriku T&D due to prolonged cold weather.

	Issued at	22:29 on January 15, 2021
	1000000 00	•Kyushu T&D shall supply 150 MW of electricity at most to Shikoku T&D from 00:00 to 03:00 on January 16
	Instruction	·Shikoku T&D shall be supplied 150 MW of electricity at most by Kyushu T&D from 00:00 to 03:00 on January 16
215		The supply demand status may degrade without power exchanges through cross regional interconnection lines
		he supply demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		In the regional service area of Shikoku T&D due to prolonged cold weather.
216	Issued at	04:14 on January 16, 2021
	Instruction	•Kyushu T&D shall supply 200 MW of electricity to Hokuriku T&D from 08:30 to 09:00.
		•Hokuriku T&D shall be supplied 200 MW of electricity by Kyushu T&D from 08:30 to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
217	Issued at	06:49 on January 16, 2021
	Instruction	•Kyushu T&D shall supply 200 MW of electricity to Hokuriku T&D from 08:00 to 09:00.
		•Hokuriku T&D shall be supplied 200 MW of electricity by Kyushu T&D from 08:00 to 09:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	08:03 on January 16, 2021
		•Tokyo PG shall supply 250 MW of electricity at most to Hokuriku T&D from 10:30 to 12:00.
	Instruction	•Kyushu T&D shall supply 300 MW of electricity at most to Hokuriku T&D from 09:00 to 10:30.
218		•Hokuriku T&D shall be supplied 300 MW of electricity at most by Tokyo PG and Kyushu T&D from 09:00 to 12:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	11:01 on January 16, 2021
	_	•Tokyo PG shall supply 400 MW of electricity at most to Hokuriku T&D from 12:00 to 16:00.
210	Instruction	•Hokuriku T&D shall be supplied 400 MW of electricity at most by Tokyo PG from 12:00 to 16:00.
219		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	14:48 on January 16, 2021
		•Tokyo PG shall supply 200 MW of electricity to Hokuriku T&D from 17:00 to 20:00.
220	Instruction	•Hokuriku T&D shall be supplied 200 MW of electricity by Tokyo PG from 17:00 to 20:00.
220		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
	Issued at	14:48 on January 16, 2021
	_	•Tokyo PG shall supply 300 MW of electricity to Shikoku T&D from 16:00 to 20:00.
	Instruction	•Shikoku T&D shall be supplied 300 MW of electricity by Tokyo PG from 16:00 to 20:00.
221		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
	Issued at	20:17 on January 16, 2021
		•Kyushu T&D shall supply 250 MW of electricity at most to Hokuriku T&D from 21:30 to 24:00.
222	Instruction	•Hokuriku T&D shall be supplied 250 MW of electricity at most by Kyushu T&D from 21:30 to 24:00.
222		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Hokuriku T&D due to prolonged cold weather.
223	Issued at	20:17 on January 16, 2021
	-	•Kyushu T&D shall supply 100 MW of electricity to Shikoku T&D from 21:30 to 24:00.
	instruction	·Shikoku T&D shall be supplied 100 MW of electricity by Kyushu T&D from 21:30 to 24:00.
		The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
	Background	because of shortage of supply capacity for balancing generators which is necessary for supply-demand balance
		in the regional service area of Shikoku T&D due to prolonged cold weather.
224	Issued at	01:36 on February 14, 2021
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	Instruction	·Hokkaido NW shall supply 250 MW of electricity at most to Tohoku NW from 02:00 to 06:00.
		•Chubu PG shall supply 1000 MW of electricity at most to Tohoku NW from 02:00 to 06:00.
		•Kansai T&D shall supply 490 MW of electricity at most to Tohoku NW from 02:30 to 05:00.
		•Tohoku NW shall be supplied 1440 MW of electricity at most by Hokkaido NW, Chubu PG and Kansai T&D from
		02:00 to 06:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity in the regional service area of Tohoku NW due to earthquake.
	Issued at	02:23 on February 14, 2021
225	Instruction	•Tokyo PG shall supply 200 MW of electricity to Tohoku NW from 03:00 to 06:00.
		•Tohoku NW shall be supplied 200 MW of electricity by Tokyo PG from 03:00 to 06:00.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity in the regional service area of Tohoku NW due to earthquake.
226	Issued at	04:51 on February 14, 2021
	Instruction	•Tokyo PG shall supply 175 MW of electricity at most to Tohoku NW from 06:00 to 08:30.
		•Tohoku NW shall be supplied 175 MW of electricity at most by Tokyo PG from 06:00 to 08:30.
	Background	The supply-demand status may degrade without power exchanges through cross-regional interconnection lines
		because of shortage of supply capacity in the regional service area of Tohoku NW due to earthquake.

[1]	Issued on	January 6, 2021
	Areas	 Hokkaido NW Tohoku NW Tokyo PG Chubu PG Hokuriku T&D Kansai T&D Chugoku NW Shikoku T&D Kyushu T&D
	Period	From January 6 (ASAP) to January 8 at 24:00 (in case of extending the period, it shall be informed individually)
	Companies	Generation companies and retail companies in the above stated areas (9 of 10 areas except Okinawa EPCO) (Subject companies shall be individually informed by the Organization)
	Instructions and Requests	<subject and="" areas="" companies="" in="" kansai="" of="" pg="" regional="" t&d="" the="" tokyo=""> Generators shall be operated at their maximum power. Member companies of Japan Electric Power eXchange (JEPX) shall bring surplus power to the market which is generated by the instruction and request above. Further, generators shall be operated regardless of contract volume of the market. Operation of generators in actual condition shall be controlled by each transmission operating companies. Subject companies in other areas> Member companies of JEPX shall bring surplus power to the market which is generated by the instruction and request above. </subject>
[2]	Issued on	January 8, 2021
	Areas	 HOKKAIGO NW Tohoku NW Tokyo PG Chubu PG Hokuriku T&D Kansai T&D Chugoku NW Shikoku T&D Kyushu T&D
	Period	From January 8 (ASAP) to January 15 at 24:00 (in case of extending the period, it shall be informed ndividually)
	Companies	Generation companies and retail companies in the above stated areas (9 of 10 areas except Okinawa EPCO) (Subject companies shall be individually informed by the Organization)
	Instructions and Requests	<subject and="" areas="" chugoku="" companies="" hokuriku="" in="" kansai="" kyushu<br="" nw="" of="" pg,="" regional="" t&d,="" the="" tokyo="">T&D> •Generators shall be operated at their maximum power. •Member companies of Japan Electric Power eXchange (JEPX) shall bring surplus power to the market which is generated by the instruction and request above. Further, generators shall be operated regardless of contract volume of the market. •Operation of generators in actual condition shall be controlled by each transmission operating companies. <subject areas="" companies="" in="" other=""> •Member companies of JEPX shall bring surplus power to the market which is generated by the instruction and request above.</subject></subject>

Actual Instructions and Requests to Generation Companies and Retail Companies by the Organization

[3]	Issued on	January 14, 2021
	Areas	 Hokkaido NW Tohoku NW Tokyo PG Chubu PG Hokuriku T&D Kansai T&D Chugoku NW Shikoku T&D Kyushu T&D
	Period	From January 15 (ASAP) to January 31 at 24:00 ¹⁵ (in case of extending the period, it shall be informed individually)
	Companies	Generation companies and retail companies in the above stated areas (9 of 10 areas except Okinawa EPCO) (Subject companies shall be individually informed by the Organization)
	Instructions and Requests	<subject areas="" chugoku="" companies="" hokuriku="" in="" kansai="" nw,="" of="" pg,="" regional="" shikoku<br="" t&d,="" the="" tokyo="">T&D and Kyushu T&D> •Generators shall be operated at their maximum power. •Member companies of Japan Electric Power eXchange (JEPX) shall bring surplus power to the market which is generated by the instruction and request above. Further, generators shall be operated regardless of contract volume of the market. •Operation of generators in actual condition shall be controlled by each transmission operating companies. <subject areas="" companies="" in="" other=""> •Member companies of JEPX shall bring surplus power to the market which is generated by the instruction and request above.</subject></subject>

¹⁵ Following improvement in the supply-demand condition, the Organization has shortened and terminated the period for instructions and requests to 24:00 h on Januaryuary 26, which was originally issued for the period from Januaryuary 15 to Januaryuary 31. https://www.occto.or.jp/oshirase/shiji/2021_0126_jukyushiji.html

Organization for Cross-regional Coordination of Transmission Operators, Japan <u>http://www.occto.or.jp/en/index.html</u>