



Electric Power Development
Koide Power Administration Office

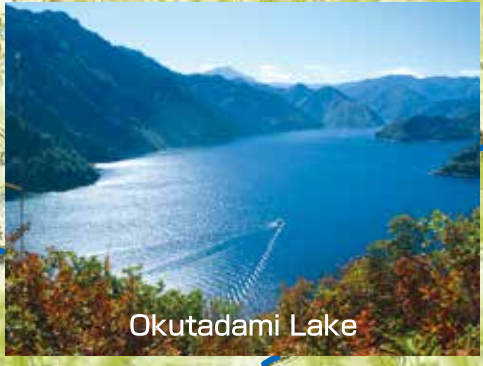
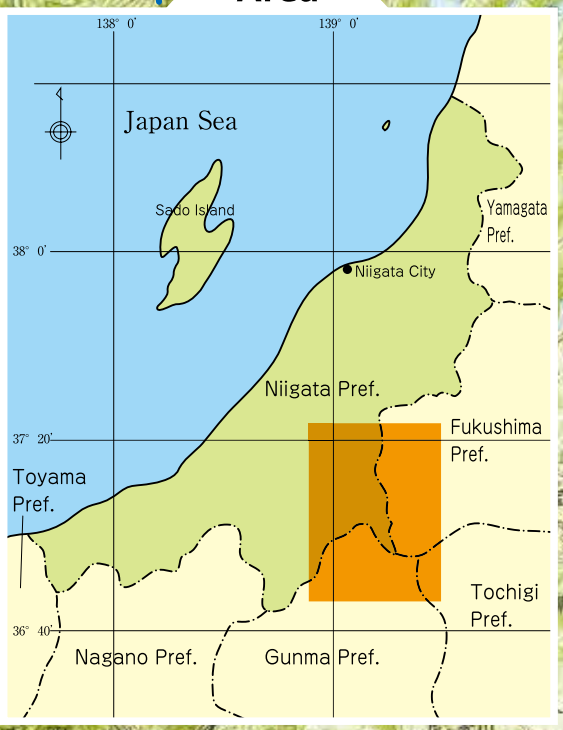
电源开发 小出电力所

LOCATION MAP



Unuma City

Area



※この地図は、国土地理院長の承認を得て、同院発行の20万分の1地勢図を複製したものである。(承認番号 平24情復、第915号)

Agano River system

阿贺野川水系

Koide Power Administration Office



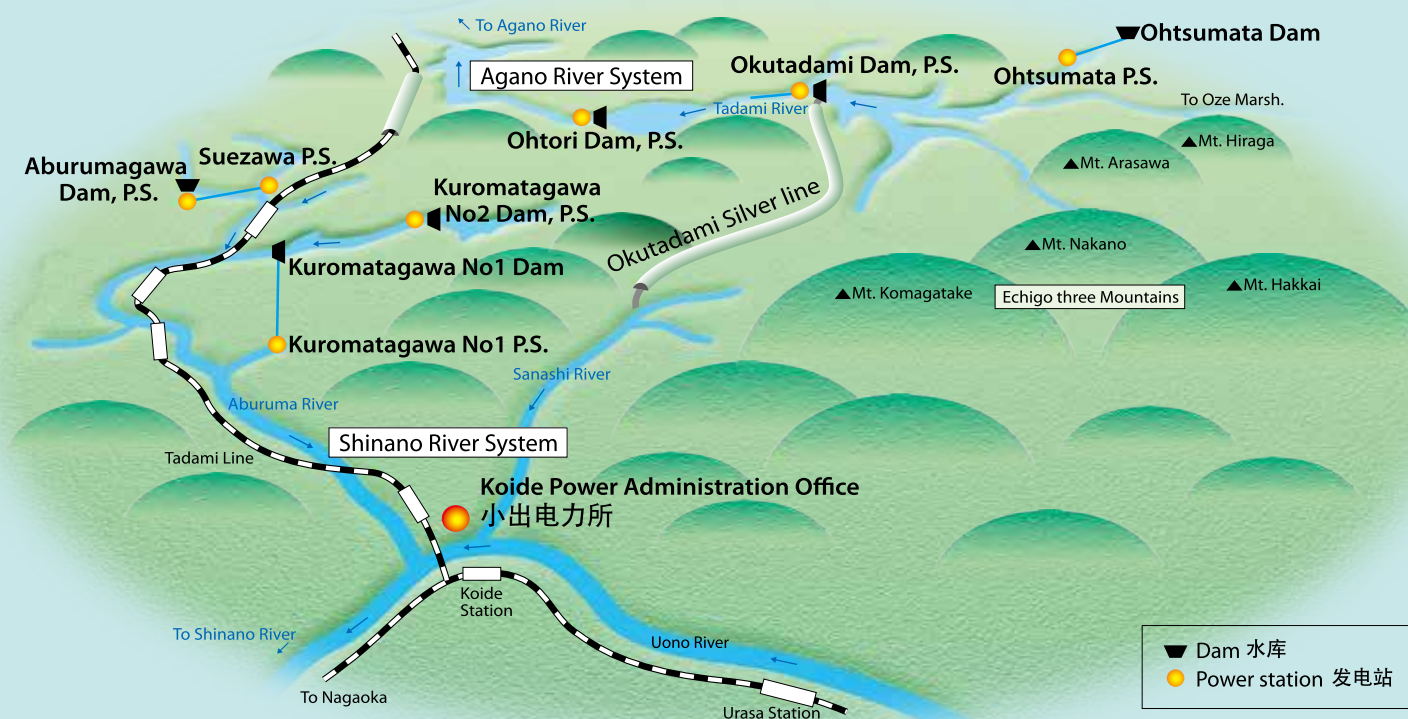
Koide Power Administration Office is located in Uonuma City, Niigata Prefecture, and maintains the facilities of 22 dams that include torrent intake dams and 8 power stations. Among these are Kuromatagawa No.1, Kuromatagawa No.2, Suezawa, and Aburumagawa in the Shinano River system, and Ohtsumata, Okutadami, which has the largest storage capacity in Japan, Okutadami (ecological flow), and Ohtori in the Agano River system, whose water source is the Oze Marsh. These power stations have 14 generators with a maximum output of 867,900 kW in total, which are remotely operated from the "eastern control center" in Kawagoe City, Saitama Prefecture. Generated power is transmitted to Tokyo Electric Power Co., Inc. and Tohoku Electric Power Co., Inc. Every power station in both water systems, over which Koide Power Administration Office have jurisdiction, makes the most of water resources in harmony with the rich natural environment, and plays an important role in the stable supply of electricity.

List of facilities of dams and power stations (Agano River system)

水库、发电站设备一览表（阿贺野川水系）

Power station	Item	Maximum output (kW)	Maximum discharge (m³/s)	Maximum effective head (m)	Reservoir		Dam			Water turbine type	Starting date of operation
					Full capacity (10,000m³)	Available depth(m)	Type	Crest length x height(m)	Volume (10,000m³)		
Ohtsumata		38,000 (1 unit)	22	205.6	182.5	5	Rock-fill	165×52	36.2	Francis	December 1968
Okutadami		560,000 (120,000 × 3 units, 200,000 × 1 unit)	Units No.1 to 3: 249 Unit No.4: 138	Units No.1 to 3: 170 Unit No.4: 164.2	60,100	Units No.1 to 3: 60 Unit No.4: 25	Concrete gravity	480×157	165.7	Francis	December 1960 Units No.1 to 3
											Unit No.4 June 2003
Okutadami (ecological flow)		2,800 (1 unit)	2.75	130.3		60				Francis	June 2003
Ohtori		182,000 (95,000 × 1 unit, 87,000 × 1 unit)	Unit No.1: 220 Unit No.2: 207	Unit No.1: 50.8 Unit No.2: 48.1	1,580	6	Semiarch	188×83	16.0	Kaplan	Unit No.1 November 1963
											Unit No.2 June 2003

Overview of Koide Power Administration Office premises



Shinano River system

信浓川水系

小出电力所



小出电力所位于新潟县鱼沼市，对以号称拥有日本最大蓄水量的奥只見水库为首，以尾濑沼为水源的阿贺野川水系（包括大津岐、奥只见、奥只见（流量维持）和大鸟发电站）和信浓川水系（包括黑又川第一、黑又川第二、末泽和破间川发电站）这两大水系的8座发电站和包括溪流取水在内的22座水库的各类设备进行维护管理。

在这些发电站设有14台发电机，最大输出功率总计达到867,900kW，由位于埼玉县川越市的“东部地区控制所”进行远程遥控运行。另外，所发的电分别被输送至东京电力和东北电力。

小出电力所管辖的两大水系的各电站，在与美丽的大自然保持协调的同时，最大限度地利用水资源，担负着保证电力稳定供应的重任。

List of facilities of dams and power stations (Shinano River system)

水库、发电站设备一览表（信浓川水系）

Power station	Item	Maximum output (kW)	Maximum discharge (m³/s)	Maximum effective head (m)	Reservoir		Dam			Water turbine type	Starting date of operation
					Full capacity (10,000m³)	Available depth(m)	Type	Crest length x height(m)	Volume (10,000m³)		
Kuromatagawa No.1		61,500 (30,750 × 2 units)	42.4	167.7	4,285	30	Concrete gravity	276×91	28.9	Francis	February 1958
Kuromatagawa No.2		17,000 (1 unit)	28	72	6,000	37	Arch	235×83	9.1	Diagonal flow	January 1964
Suezawa		1,500 (750 × 2 units)	6.2	32.2	—	—	Concrete gravity	39×11	0.5	Francis	February 1958
Aburumagawa		5,100 (1 unit)	8	77.5	1,580	32	※Concrete gravity	280×94	41.0	Francis	December 1985

※ The Aburumagawa Dam is managed by Niigata Prefecture. ※ 破间川水库由新潟县管理

Water intake facility in Koide Power Administration Office premises



Dams and power stations in the Shinano River system

信浓川水系的水库、发电站

Kuromatagawa No.1 Power Station

This is a straight concrete gravity dam with a height of 91 meters, and is located at approximately 3 kilometers upstream of the confluence of Hiraishi River and Kuromata River. This dam supplies water to the power station through a penstock and a pressure tunnel with an inside diameter of 4.5 meters and a total length of approximately 4.5 kilometers.

黑又川第一发电站

在黑又川与平石川的合流点上游约3公里处建造的、坝高91米的混凝土直线重力式坝。

通过内径4.5米、总长约4.5公里的压力隧道和水压铁管从该水库向发电站引水。



Kuromatagawa No.1 Dam



Generator of Kuromatagawa No.1 Power Station



Kuromatagawa No.2 Dam and Power Station

Kuromatagawa No.2 Power Station

This dam is a dome-type arch dam with a height of 92.5 meters, and takes water from the upstream region of Suezawa River and 3 streams in order to make good use of rivers.

The power station is located directly below the right bank of the dam.

黑又川第二发电站

该坝为坝高92.5米的穹顶形拱坝。取末泽川上游和3处溪流的水，充分地利用河流资源。

发电站建造在坝右岸的正下方。



Generator of Kuromatagawa No.2 Power Station

Suezawa Power Station

An intake dam is located in the Aburuma River, and water of up to 10 tons/second is transmitted from the Hiraishi Dam through a gravity flow tunnel with an inside diameter of 2.5 meters and a total length of approximately 2.4 kilometers.

末泽发电站

在破间川建造取水水库，通过内径2.5米、总长约2.4公里的自然下流式隧道从平石水库将最大取水量为每秒10吨的水引入。



Generator of Suezawa Power Station



Suezawa Power Station



Hiraishi Water Intake Facility

Aburumagawa Power Station

A gravity dam with a height of 93.5 meters was established by Niigata Prefecture for the purpose of flood control, and the power station is located directly below the dam.

This power station takes water of up to 8 tons/second from the dam through a penstock with a length of 113 meters.

破间川发电站

在新潟县为治水而建造的坝高93.5米的重力式坝正下方，建有此发电站。

该发电站通过总长113米的水压铁管从水库以每秒8吨的最大取水量进行引水。



Aburumagawa Dam and Power Station



Generator of the Aburumagawa Power Station

Dams and power stations in the Agano River system

阿贺野川水系的水库、发电站



Okutadami Dam



Generator of the Okutadami Power Station

Okutadami Power Station

The development of Okutadami Power Station was decided by the Electric Power Development Coordination Council in July 1953, and preparatory work was carried out through Route 352 crossing Shiore Pass (1,062 meters above sea level). "Okutadami Silver Line" was established as a construction road by our company.

The main construction of the power station was started in May 1957, and power generation was partially started in December 1960. Units 1 to 3 were brought into full operation in July 1961. This construction employed approximately 6 million people in total, and cost approximately 39 billion yen.

After that, expansion of the power station was planned for peak power demand, and Unit 4 was brought into operation in June 2003.

奥只见发电站

自从1953年7月的电源开发调整审议会决定兴建奥只见发电站之后，着手开展了翻越海拔1062米的枝折岭、穿越国道352号线的准备工程建设。现在的“奥只见银色之路”就是当时作为工程作业用的由本公司修建的道路。

发电站的主体工程于1957年5月正式开工，1960年12月开始进行部分发电，1961年7月1#3号机全部投入运转。工程总计投入600万劳务人员，耗资约390亿日元。

其后，该发电站作为应对用电高峰期的供电电源被纳入发电站增设计划，4号机于2003年6月正式开始运转。

Okutadami Ecological flow Power Station

In connection with the expansion work of the Okutadami Power Station, ecological flow is discharged directly below the dam.

Electricity is generated by making good use of this flow.

奥只见流量维持发电站

伴随奥只见增建工程，为维持河流流量实施向堤坝正下方的放流。



Generator of Okutadami Power Station (ecological flow)



Water discharge from temporary drainage channel (discharged about 200m upstream when power is generated)



Ohtsumata Dam



Generator of Ohtsumata Power Station

Ohtsumata Power Station

The dam of this power station is an asphalt face rock-fill dam with a volume of 360 thousand cubic meters, and is the largest one of this type in Japan.

Water is collected from Ohtsumata River upstream of Tadami River and nearby streams, and is diverted from the upstream region of Hinoemata River into Ohtsumata Regulating Reservoir. The water is then supplied to a circular underground power station through a pressure tunnel with a length of approximately 5 kilometers.

大津岐发电站

该发电站的堤坝为体积36万立方米的表面沥青隔水墙型填石坝。是该方式中目前日本最大的堤坝。

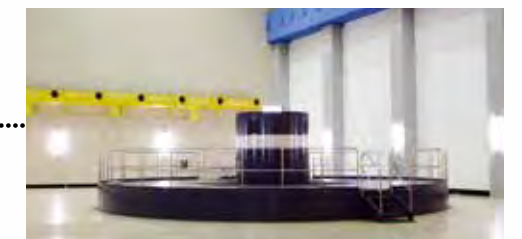
取只见川上流的大津岐川和其附近溪流之水，并从桧枝岐川上游变更流域，引水至大津岐调整池，再经过约5公里的压力隧道将水引入圆型地下发电站。



Ohtori Dam



Generator No.1 of Ohtori Power Station



Generator No.2 of Ohtori Power Station

Ohtori Power Station

A semiarch gravity dam is located between Okutadami Power Station on the upstream side and Tagokura Power Station on the downstream side, and the power station is located directly below the dam.

In the same period as Okutadami Power Station, expansion of the power station was planned for peak power demand, and Unit 2 was brought into operation in June 2003.

The Kaplan turbine of this power station is the largest one in Japan, and its maximum discharge is 220 tons/second.

大鸟发电站

在上游的奥只见发电站和下游的田子仓发电站之间建造了半拱形重力坝，发电站建在坝的正下方。

作为应对用电高峰期的供电电源，与奥只见发电站同时期被纳入发电站增设计划，2号机于2003年6月正式开始运转。

该电站的卡普兰式水轮机其最大用水量为每秒220吨，是日本最大的大容量水轮机。

Construction to expand the Okutadami and Ohtori power plants (1999~2003)

奥只見发电站、大鸟发电站增建工程



Intake Work

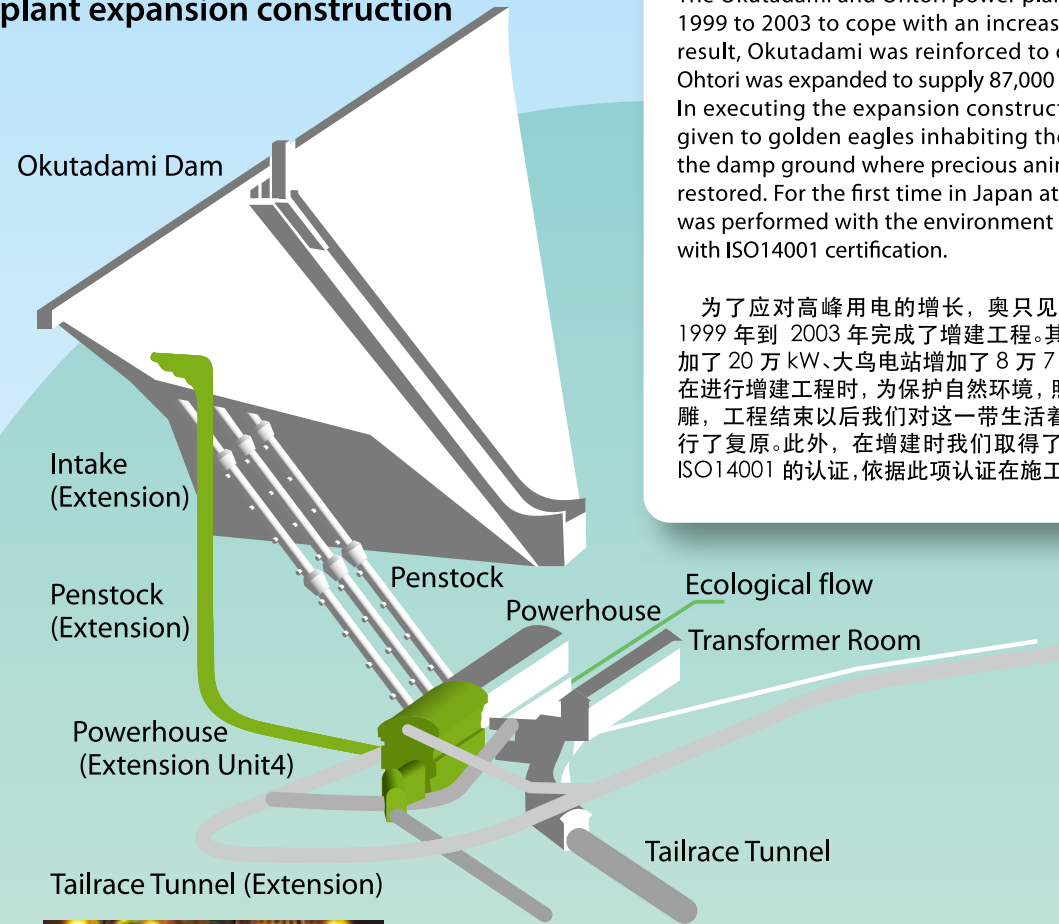


Golden Eagle in near the site



Restored Marshland

Bird's eye view of Okutadami power plant expansion construction



The Okutadami and Ohtori power plants were expanded from 1999 to 2003 to cope with an increase in peak demand. As a result, Okutadami was reinforced to output 200,000 kW and Ohtori was expanded to supply 87,000 kW. In executing the expansion construction, consideration was given to golden eagles inhabiting the surrounding area and the damp ground where precious animals and plants live was restored. For the first time in Japan at that time, construction was performed with the environment managed in accordance with ISO14001 certification.

为了应对高峰用电的增长，奥只見发电站和大鸟发电站从1999年到2003年完成了增建工程。其中奥只見电站的出力增加了20万kW、大鸟电站增加了8万7千kW。在进行增建工程时，为保护自然环境，照顾生息在周边地带的金雕，工程结束以后我们对这一带生活着贵重动植物的湿地还进行了复原。此外，在增建时我们取得了日本工程建设界第一个ISO14001的认证，依据此项认证在施工的同时进行环境管理。



Power Station Work



Runner installation Work



Extension outlet

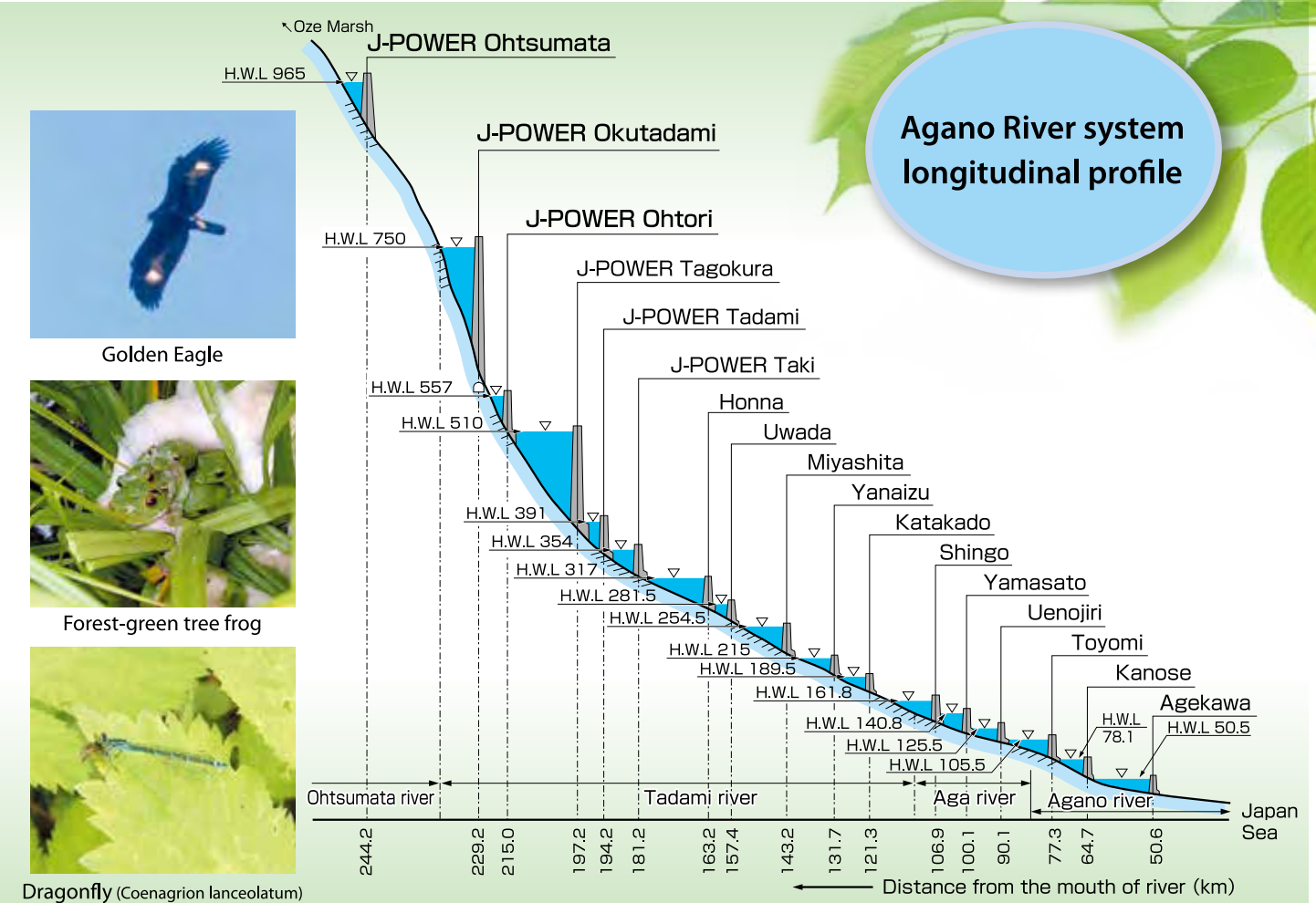
Eastern region control station 东部地区控制所

Eastern region control station (Kawagoe-city.)



Situated in Kawagoe City, Saitama Prefecture, the eastern region control station monitors and controls 18 hydroelectric power stations (41 power generators), two transformer substations, and transmission lines connected to these stations within the jurisdiction of the East Japan Office. These stations and transmission lines are operated to efficiently utilize precious water resources, while making adjustments with the central load dispatching office of the main office.

东部地区控制所位于埼玉县川崎市，负责控制和管理东日本支店下属地区18座水电站（41台发电机），2座变电站以及联结上述设备输电线的正常运行。为了更好地利用宝贵的水力资源，东部地区控制所通过和公司本部的中央调度室进行协调来运行下属的电站设备。



Agano River system longitudinal profile

ACCESS

- Time from Koide Interchange by car: 50 minutes
- Time from Urasa Station by car: 1 hour 20 minutes



Okutadami Lake



Okutadami Maruyama Ski Resort



Okutadami PR building



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