

< Appendix 3 > Preconditions for Fuel Cost Adjustment

- The preconditions for the fuel cost adjustment has been revised according to the changes of power generation composition and fuel price.
- As the standard unit price increased by approx. 16% due to the increase in the ratio of thermal power generation in the power generation composition, the sensitivity of fuel price fluctuations on fuel cost adjustment will be relatively higher than the current sensitivity.

			Previous	This time	Difference
Standard fuel price		Yen/kl	42,700	44,200	+1,500
Conversion coefficient	α	-	0.2782	0.1970	▲0.0812
	β	-	0.3996	0.4435	+0.0439
	γ	-	0.2239	0.2512	+0.0273
Standard unit price (Before tax, ave)		Yen/kWh	0.177	0.206	+0.029

* The standard unit price varies depending on voltage. (Current (after tax): 0.222yen/kWh (low), 0.214yen/kWh (high), 0.211yen/kWh (extra-high))

1. Standard fuel price (44,200yen/kl)

-The standard fuel price is the weighted average of crude oil, LNG and coal prices which are the precondition for setting the fuel price, and is the standard value for price fluctuations in fuel cost adjustment (the standard value used this time is the actual value from the foreign trade statistics of January to March of this year).

-Specifically, coefficients (α , β , γ) are calculated, taking into account the crude oil equivalent ratio and the power generation output composition of each fuel used in thermal power generation. Then the coefficients are multiplied by the price of each fuel and the weighted average is calculated.

$$\begin{array}{ccccccc}
 \text{[Calculation]} & 57,802 \text{ yen/kl} & \times & 0.1970 & + & 67,548 \text{ yen/t} & \times & 0.4435 & + & 11,452 \text{ yen/t} & \times & 0.2512 & = & 44,200 \text{ yen/kl} \\
 & \text{(Crude oil price)} & & (\alpha) & & \text{(LNG price)} & & (\beta) & & \text{(Coal price)} & & (\gamma) & & \text{(Standard fuel price)}
 \end{array}$$

2. Standard unit price (0.206 yen/kWh)

-The standard unit price is the amount of price change per 1kWh when the fuel price fluctuates (crude oil equivalent price, 1,000 yen/kl).

-In particular, multiply 1,000 yen/kl by the fuel consumption amount (crude oil equivalent kl) of thermal power generation to obtain the sensitivity of 1,000 yen/kl increase in crude oil equivalent price.

- The result is divided by the total electricity sales (kWh) to obtain the adjustment amount for the fuel price fluctuation per 1kWh according to 1,000 yen/kl fluctuation. The result is the standard unit price.

$$\begin{array}{ccccccc}
 \text{[Calculation]} & 57,066,000\text{kl} & \times & 1,000 \text{ yen/kl} & / & 277.3 \text{ billion kWh} & = & 0.206 \text{ yen/kWh} \\
 & \text{(Fuel consumption amount (crude oil equivalent))} & & & & \text{(Total electricity sales)} & & \text{(Standard unit price)}
 \end{array}$$

3. Average fuel price

- The average fuel price is the weighted average of foreign trade statistics prices of crude oil, LNG and coal prices of each month (weighted by α , β , γ mentioned above). Thus the average is subject to change every month.
- In particular, the actual foreign trade statistics prices of crude oil, LNG and coal (the averages from 3-5 months ago) are multiplied by α , β , γ respectively.
- The difference between the average fuel price of the past 3 months and the standard fuel price is the fluctuation range of fuel price. The adjustment amount for the fuel price fluctuation per 1kWh is calculated by multiplying the fluctuation range of fuel price by the standard unit price.

4. Fuel cost adjustment of the month

- The fuel cost adjusted unit price is calculated by multiplying the difference between the average fuel price (which changes every month) and the standard fuel price by the standard unit price.

$$\begin{array}{c}
 \text{[Calculation]} \quad (XX,XXX \text{ yen/kl} - 44,200 \text{ yen/kl}) / 1,000 \text{ yen/kl} \times 0.206 \text{ yen/kWh} = \text{Fuel cost adjusted unit price of the month} \\
 \text{(Average fuel price of the month)} \quad \text{(Standard fuel price)} \quad \quad \quad \text{(Standard unit price)}
 \end{array}$$

- The fuel cost adjustment amount of the month is calculated by multiplying the fuel cost adjusted unit price by the amount of electricity used.

(Note) Calculation of the conversion coefficients (α , β , γ)

	Power output composition: ①	Crude oil equivalent coefficient*: ②	Conversion coefficient:③= ①x②
Crude oil	0.1970	1.0000	0.1970
L N G	0.6340	0.6996	0.4435
Coal	0.1690	1.4864	0.2512
Total	1.0000	—	—

... α
 ... β
 ... γ

The preconditions for fuel cost adjustment has been revised according to the amendment order for applied fuel cost.

(Reference) Preconditions at the time of application
 α : 0.1989
 β : 0.4425
 γ : 0.2506
 Standard fuel price: 44,300 yen/kl
 Standard unit price: 0.206 yen/kWh

*Crude oil equivalent coefficient

LNG: Crude oil heat generation amount per 1L / LNG heat generation amount per 1kg

Coal: Crude oil heat generation amount per 1L / Coal heat generation amount per 1kg