

Costs for using the Swiss transmission grid

This guide describes the basic principles for calculating grid utilisation costs and the amounts to be paid for ancillary services (AS). The underlying data exchange processes for electrical volumes are described in the [Metering Code](#) as well as in the documents relating to [standardised data exchange](#).

General ancillary services

The tariff for general ancillary services covers the costs for system and metering data management, ensuring black start and island operation capability, shares of the costs for voltage support, primary control, power provision for secondary and tertiary control as well as the costs for grid reinforcement.

The amount to be paid by each distribution grid operator is calculated as the volume of energy used by end consumers in its grid area multiplied by the published 'General AS tariff'. In the case of an end consumer directly connected to the transmission grid, the basis for the calculation is the volume of energy used by the end consumer.

For exceptions to grid access as stipulated in Art. 17 Para. 6 of the Electricity Supply Act, the costs for general ancillary services are calculated in accordance with the respective decree of the Swiss Federal Electricity Commission (ElCom).

Individual ancillary services

Active power losses

The tariff for individual ancillary services active power losses covers the costs of compensating active power losses, which are incurred by grid operators and end consumers directly connected to the transmission grid and charged to these parties individually.

The amount payable for active power losses in the

transmission grid is calculated based on the volume of active energy (in kWh) discharged from the transmission grid. This volume is multiplied by the published 'Individual ancillary services active power losses tariff'. The energy required for a power plant's own consumption and the pump energy of pumped storage power plants in the grid operator's distribution grid or at lower levels of the downstream grids is taken into account and deducted, if reported by the grid operator directly connected to the transmission grid.

In addition to the distribution grid operators and end consumers directly connected to the transmission grid, merchant line operators (Art. 17 Para. 6 of the Electricity Supply Act) are also classed as payers. Revenues generated from the ITC mechanism (Inter TSO Compensation mechanism) are used to reduce costs.

Reactive energy

The tariff for individual ancillary services reactive energy covers the costs for the supply of reactive energy, which are incurred by grid operators and end consumers directly connected to the transmission grid and charged to these parties individually.

The amount payable is calculated based on the volume of reactive energy measured when the power factor is below 0.9, multiplied by the published 'Individual ancillary services reactive energy tariff'. A differentiation is made between active and passive participants, who are each charged a separate tariff for individual reactive energy ancillary services.

Grid utilisation

The tariff for grid usage covers the capital and operating costs of the transmission grid's power infrastructure, such as pylons, power lines, substations and their maintenance, as well as of operation and monitoring via the control centres. It consists of an energy component, a power component and a basic component, and is charged to both grid operators and end consumers directly connected to the transmission grid.

Energy component

The energy component amount is calculated based on the active energy used by end consumers directly connected to the transmission grid and, in the case of a grid operator, the active energy in kWh used by end consumers in its grid and all lower-level grids (Art. 15 Para. 3a of the Electricity Supply Ordinance). This is multiplied by the published working tariff.

Power component

The power component is calculated based on the annual mean of the actual monthly quarterly-hour peak demand values used by each end consumer directly connected to the transmission grid and each grid at the lower grid level of the transmission grid. The energy required for a power plant's own consumption and the pump energy from pumped storage power plants in the grid operator's distribution grid or at lower levels of the downstream grids is taken into account and deducted, if declared by the grid operator directly connected to the transmission grid.

If a customer (end customer, distribution system operator) has several feed-out points into an operationally connected grid, then the calculation is based on the

quarter-hourly netted values. These are determined based on the quarter-hourly time series for all feed-out points, which are netted in the feed-out and feed-in direction. Here too, the energy required for a power plant's own consumption and the pump energy of pumped storage power plants in the grid user's distribution grid or at lower levels of the downstream grids is taken into account and deducted, if declared by the grid operator directly connected to the transmission grid.

The reference point for calculating the power is usually the high-voltage side of the transformation.

Fixed basic tariff

To calculate the amount based on the Fixed basic tariff, each feed-out point for a grid operator is weighted using the so-called K factor, whereby the share of energy being fed out is considered in relation to the sum of energy being fed in and out. The K factor is 0 up to a share of 0.2 of feed-out energy, and 1 for a share of 0.8 or higher; it is linear for any values in between. The calculation is based on the sum over the past 12 months.

The grid utilisation costs are therefore the result of

- » multiplying the energy volume by the working tariff,
- » multiplying the monthly peak output by 1/12 of the power price, and
- » multiplying the number of weighted feed-out points by the fixed basic tariff per weighted feed-out point.

Balance groups

Registration fee for new balance groups

A one-off registration fee is charged to register new balance groups.

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