



Elena SAPOZHNIKOVA
Chief adjuster and Head
of financial analysis,
Loss Adjusters Bureau
(LABB)

Business interruption insurance in Russian power industry

Long terms of recovery after big incidents often bring policyholders to considerable financial losses due to equipment downtime. In these cases the necessity of business interruption (BI) insurance becomes obvious.

Many companies in Russia have decided to enhance their insurance protection by including the coverage against the time element. Unfortunately, Russian power industry remains an exception of those. The main reason of that is a complicated system of interaction between participants of the electricity market. Many of the potential policyholders do not understand how BI coverage will work in certain circumstances. Taking into account comparatively high price of BI insurance it is purchased only by selected Russian companies, most of which having a foreign investor.

The major customers of BI insurance are generating enterprises, most of which in Russia are thermal power plants. The distribution between different types of generation (thermal / hydro / nuclear) in Russia is shown in the scheme below.

What are the risks?

The peculiarities of risks in Russian power industry worth a separate article. As an example, one of the major causes of damage to power equipment is normal tear and wear. There is a lot of outdated equipment especially at the heat power plants. The effective regulatory documents do not limit its operating lifetime; it may be prolonged numerous times after technical maintenance if it passes the tests.

Methods of testing the power equipment are constantly improving, but, in most

cases, they are still quite far from predicting the exact time when tear and wear become critical. **The loss caused by tear and wear is the standard exclusion from property damage (PD) insurance coverage.** The insurers, however, make concessions and cover the wear-related loss under machinery breakdown (MB) section, in part (excluding the worn element itself) or even in full.

We note that nowadays the state of the art makes it possible to get down to a specific cause in those cases where only tear and wear could have been attributable not much time ago.

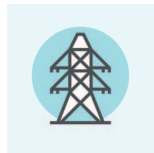
Example: Power transformer manufactured in 1979. During a maintenance damages to the low-voltage wiring of all three phases were observed. Considering the age of the transformer normal tear and wear were

The electric power industry comprises a lot of enterprises of various kinds which assets and risks vary essentially.



Production

Power plants (heat, hydro, nuclear, renewable energy)



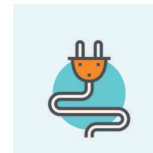
Transfer and distribution

Transmission and distribution grids and substations



Consumption

Distributing companies and consumers



Infrastructure

System operator, trading system administrator, "Market council" (non-profit partnership)

initially supposed to be the cause of the wiring damage. The investigation revealed, however, that the damage had been caused by electrodynamic effect of an incoming short circuit (PD loss = Euro 1.6M, BI loss = Euro 5.6M).

BI losses

The occurrence of a minor damage to power equipment can lead to a long downtime period and a big consequential loss.

Losses with BI component usually call for complex investigation not only into a root cause of an incident but also into a general impact on production. Every relation between the initial incident and further losses should be scrutinized along with available mitigation measures.

Power sector has some intrinsic features that limit application of mitigation means while common for other types of losses:

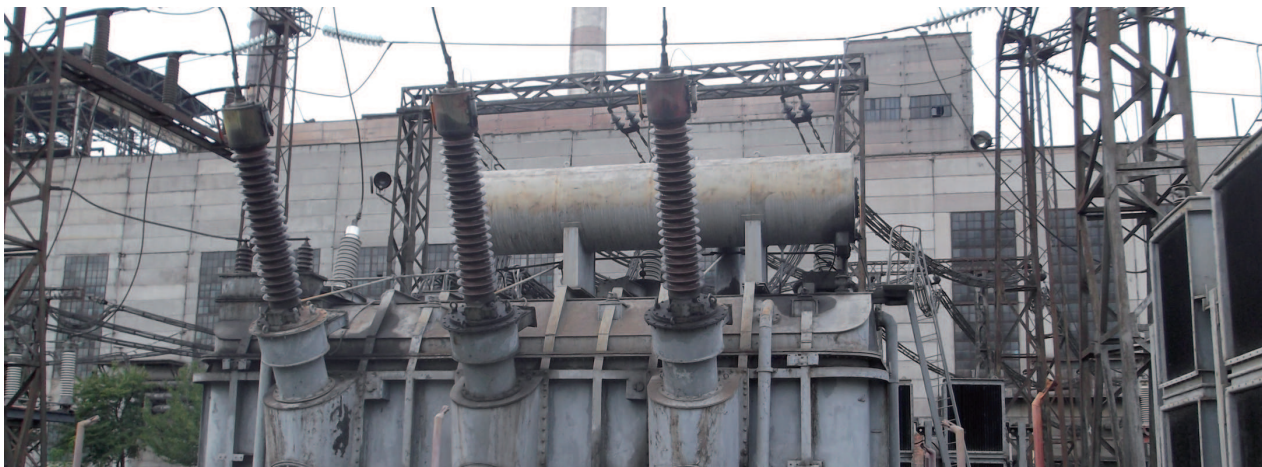
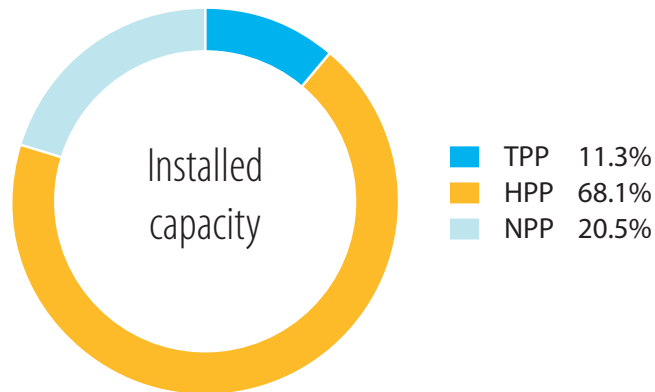
- ▶ Continuous power production-and-consumption process
- ▶ There is no stock available for loss mitigation
- ▶ Underproduction cannot be compensated in the following period
- ▶ Final production schedule is worked out in real-time mode depending on the actual consumption
- ▶ Orders for loading and releasing the generating capacity are given by the system operator depending on numerous factors (air temperature, water level at HPP, actual equipment repairs, grid limitations etc.) that complicates long-term planning of production volumes.

Example: Power plants operate within the united system, thus operating mode of one plant often directly depends on the load of the nearest ones. On 1 February 2016, one 800-MW power unit of Berezovskaya TPP suffered a heavy fire that may need about a year for rectification. The very next day after the incident the prices at the wholesale electricity market of Siberia rose for more than 10 % due to re-distribution of the load among the neighbouring power plants.

Apart from the technical peculiarities of the power sector, the legal basis of its operation is of the importance. Electricity in Russia is traded on two markets – wholesale and retail. The wholesale market is represented by generating companies, electricity import/export operators, retail companies, grid companies (which purchase electricity to cover transmission losses) and big consumers. The players of the wholesale market may act as sellers or

buyers (sometimes both sellers and buyers) of electric power and energy. The power is a specific commodity. When purchased, it gives the wholesale market participant the right to demand that the power seller maintains the capacity to generate electricity of defined quality and in the volume required to meet the participant's needs. The wholesale market is divided into several segments according to transaction terms and delivery periods: the regulated prices segment and the competitive prices segment, the latter comprising of the day-ahead market, the balancing market and the free contracts market.

The retail electricity market trades only the energy purchased on the wholesale market or produced by generators that are participants of the retail market. According to the Retail Market Rules the supply of electric energy to population and to the consumer categories equated to population is carried out at regulated prices (tariffs) established by the regional regulating authority.



The interrelation between all the participants of the wholesale and retail electricity markets is rather complicated. Each sector has its own rules of operation and pricing that influences the calculation of possible BI losses. Close attention should also be paid to rather frequent changes in the relevant legislation and regulations.

As a result, while calculating BI losses in power industry we face the following challenges:

- calculation of anticipated electricity prices (but for an incident, would the price bid of the policyholder be accepted at the day-ahead market and what price would then form);
- possibility of loading additional capacities of other units and plants of a company or a group as the loss mitigation measure;
- distribution of fixed and variable costs among electrical energy, power and heat;
- distribution of profit between the electrical energy and power;
- possible cost savings (e.g. postponing maintenance of intact units for the downtime period);

➤ documentary confirmation of the loss.

All referred factors make BI insurance a black box for the client: it is not obvious what is covered and how the indemnity would be calculated. The most evident option to clear up the matter is to develop a procedure for calculating BI losses and to agree it between the policyholder and the insurer. This option has its pros and cons.

- + Simplification of claim settlement: fixed documents set to be requested, settlement terms decrease.
- Nobody can foresee every possible situation; thus, a loss may occur which would be incompletely indemnified.
- The documents entered into the procedure may change in form or name. This is especially typical for power industry, where the forms of the reports provided by the market operator are constantly changing.
- Regulations in respect of electricity markets operation may change (as an example, under debates for quite a long time has been the abandonment of trading power and return to the single commodity – the electrical energy).

Example: When the procedure did not work.

The preagreed method of BI calculation was based on designed equipment performance and did not consider factors helpful for estimation of the actual loss (the actual load of the equipment prior to the loss, presence of the similar units at the plant and their operating modes, possibility of their additional load etc.). BI loss calculated according to the policy procedure was Euro10,1M, the rectified BI loss came to Euro 5,6M.

A procedure of calculating BI losses should not be limited with a closed non-flexible formula.

In spite of the challenges which policyholders and insurers confront when arranging BI coverage in the Russian power industry, we observe the positive trend of increasing the quantity of relevant policies. Professional estimation of risks along with qualified claim settlement and calculation of losses is a linchpin of further successful growth and development of this sector of insurance which is of prime importance for the whole state economy.



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