

Default Fund Calculation

Electricity Spot Market

Document classification

Public

Document Information	
Document owner	Chief Risk Officer
Document reviewer	Risk Management Team
Document approver	General Management

Document review cycle:

Annually

Change log:

Version	Effective date	Change description
V 1.0	09.11.2021	Initial document
V 1.1	13.10.2022	Annual review
V 1.2	29.12.2023	Annual review: Change of look-back period for historic observations

Table of contents

1	Relevant risks and stress scenarios	2
1.1	Counterparty default risk.....	2
1.2	Credit risk.....	2
1.3	Stress scenarios	2
2	Default fund calculation.....	4
2.1	Determination of the default fund size	4
2.2	Minimum size of default fund	4
2.3	Individual contributions of clearing members.....	4
2.3.1	Minimum contribution to the default fund.....	5
2.3.2	Dynamic contribution to the default fund.....	5
2.4	Additional, dedicated financial resources by CCPA.....	5
2.5	Parameters needed	5

Introduction

To limit its credit exposures arising from clearing of electricity spot market products, CCPA maintains a prefunded default fund to cover losses that exceed the losses covered by the margin requirements in case of a clearing member's default, including the opening of an insolvency procedure.

The default fund for the electricity spot market is held separately from the default fund installed for the clearing of securities transactions. CCPA has determined the size, below which the default fund shall not fall under any circumstances. In order to determine the size of the default fund on the electricity spot market, CCPA has developed scenarios of extreme but plausible market conditions. Such scenarios of extreme events include historical as well as hypothetical events.

This document describes the calculation of the default fund size considering the stress scenarios, and the calculation of the default fund contribution for clearing members as well as the additional, dedicated financial resources to be provided by CCPA to the default waterfall for clearing of electricity spot market products.

CCPA publishes details of the default waterfall such as total size of the default fund and the additional resources of CCPA (skin-in-the-game) in the CPMI-IOSCO templates for CCPs on its website:

<https://www.ccpa.at/cpmi-iosco/>.

1 Relevant risks and stress scenarios

CCPA has identified the following risks as relevant and developed scenarios of extreme but plausible market conditions for calculating the size of the default fund on the electricity spot market.

1.1 Counterparty default risk

The main risk for CCPA arises when a clearing member defaults. In extreme circumstances, a clearing member default may have a domino effect and spread to other market participants. Therefore, CCPA performs stress testing under the assumption of multiple clearing members defaulting simultaneously.

1.2 Credit risk

Electricity spot market products are commodities with special characteristics. Electricity cannot be stored and, unlike financial instruments or other commodities, realised in case of clearing member's default on payment. The main risk in case of a clearing member's default arises from the defaulting clearing member's open payment positions not being fully covered by the clearing member's collateral.

Stressed conditions on the electricity spot market may be caused by extreme prices or by unusual trading behaviour of the members. Therefore, the trading volume fluctuation resulting in net payment obligations to CCPA, is considered relevant for the calculation of the default fund. Whilst under normal conditions, the margin requirement is calculated at 99% confidence level, during stress testing CCPA applies a higher confidence interval.

1.3 Stress scenarios

The stress testing is performed under the assumption that the three largest clearing members (in terms of payment obligations) would default simultaneously.

In order to determine its exposure caused by uncovered payment obligations under extreme but plausible conditions, CCPA uses historic and hypothetical scenarios:

Historic observation method

In the historic scenario, stress events are represented by trading days on which the actually observed value of the clearing member's open payment obligations was not entirely covered by its margin requirement calculated on the previous day. For this purpose, the clearing members' calculated margins are compared with their actual payment obligation, uncovered losses are identified and the total of the three clearing members with the largest uncovered amounts with the same value date within the predefined look-back period represents the maximum shortfall under stressed conditions.

Hypothetical exposure factor method

In the hypothetical scenario, the loss arising from uncovered payment obligations is modelled by computing the difference between hypothetical margin and margin in normal conditions. For this purpose, the calculated margin requirement under normal conditions is multiplied by a constant factor (K-times the size of the current margin requirement calculated under normal conditions). The highest calculated value in case of

default of the three clearing members on the same value date within the predefined look-back period is taken.

2 Default fund calculation

2.1 Determination of the default fund size

CCPA maintains a default fund for all electricity spot market products held separately from the default fund for the clearing of financial instruments. The default fund shall at least enable CCPA to withstand, under extreme but plausible market conditions, the simultaneous default of the three clearing members with the largest exposure.

To determine the size of the default fund for electricity spot market products (*NormSize*), CCPA applies the following procedure on a regular basis (at least monthly).

1. Calculation of the daily difference between open payment obligation (historical scenario) and margin in normal conditions per clearing member. If positive, the difference represents the potential uncovered loss of each clearing member per day.
2. For each day, identification of the maximum loss per clearing member by sorting in descending order and selection of the three clearing members with the largest maximum loss.
3. Calculation of the total sum of the maximum loss of the three selected clearing members (“cover-3-historical”) on daily basis.
4. Calculation of the daily difference between hypothetical margin and margin in normal conditions per clearing member.
5. For each day, identification of the maximum hypothetical loss per clearing member by sorting in descending order and selection of the three clearing members with the largest maximum loss.
6. Calculation of the total sum of the maximum hypothetical loss of the three selected clearing members (“cover-3-hypothetical”) on daily basis.
7. Determination of the default fund size (*NormSize*) by identifying the maximum between cover-3-historical amount and cover-3-hypothetical amount during a predefined period, further referred to as “look-back period stress test”.

2.2 Minimum size of default fund

CCPA sets a sound limit for the minimum size of the default fund (*MinSize*). The default fund shall never fall below that limit under any circumstances.

This amount is calculated at least once a year taking into account the number of clearing members and the minimum contribution per clearing member (*MinCon*):

$$MinSize = \sum_i MinCon_i$$

2.3 Individual contributions of clearing members

The default fund contribution (*DFC*) of a given clearing member (*i*) is calculated based on a minimum amount (*MinCon*) and a dynamic component (*DyCon*):

$$DFC_i = \max (MinCon_i ; DyCon_i)$$

Whereas the total size of the default fund is

$$DF\ Size = \sum_i DFC_i$$

2.3.1 Minimum contribution to the default fund

The minimum contribution (*MinCon*) to the default fund amounts to EUR 10.000 per clearing member on the electricity spot market.

2.3.2 Dynamic contribution to the default fund

The dynamic contribution component (*DyCon*) of clearing members is recalculated at least on a quarterly basis.

Subsequently, CCPA compares the dynamic contribution component with the minimum contribution and calculates the total contribution to be requested from each individual clearing member.

The amount debited/credited to each clearing member is the difference between the current calculation and the previous calculation.

The dynamic component is calculated according to the following specifications:

1. Computing the necessary default fund size according to section 2.1
2. The default fund size is allocated to the clearing members according to their exposure during the margin look-back period L pursuant to section 2.5. The exposure ratio per member is calculated by dividing the average individual margin requirement by the sum of the margin requirement of all members.
3. *DyCon* of a clearing member is computed by multiplying the resulting percentage with the total default fund size.
4. The contributions DFC_i of each clearing member to the default fund is the maximum of the minimum contribution amount *MinCon* and the respective dynamic contribution *DyCon*.

2.4 Additional, dedicated financial resources by CCPA

CCPA maintains dedicated financial resources which amount to at least 25% of the minimum capital as additional resource in the default waterfall facility and to cover its own “skin-in-the-game”.

CCPA has reserved 25% of EUR 7,5 Mio = EUR 1.875.000 as dedicated resources in its balance sheet. These dedicated financial resources are allocated to CCPA's two default funds (for the clearing of securities and the clearing of electricity spot markets products) in proportion to their size. The allocation is performed on quarterly basis.

2.5 Parameters needed

The following parameters are used for calculating the default fund and the contributions per clearing member:

Process	Parameter	Effective Value	Last update	Last review
Stress Scenarios				
Historical scenario	Look-back period for historic observations	since 10.11.2021 (go-live)	Oct 2023	Oct 2023
	Quantile for observed uncovered payment position	100%	Oct 2021	Oct 2023
Hypothetical scenario	Look-back period for hypothetical scenarios observations	365 days	Oct 2021	Oct 2023
	Multiplier for normal margin	1.5	Oct 2021	Oct 2023
Default Fund computation				
	Number of Clearing Members defaulting simultaneously	3	Oct 2021	Oct 2023
	Look-back period for margin under normal conditions	6 months	Oct 2021	Oct 2023
	Look-back period stress test	1/3 months	Oct 2021	Oct 2023
	Frequency of Default Fund size update	at least quarterly	Oct 2021	Oct 2023
	Default Fund min contribution in EUR	EUR 10.000	Oct 2021	Oct 2023

Table 1: Parameters for calculating DF and DF contributions