

INFORMAL EXPLANATORY DOCUMENT

Full-cycle use cases for the Belgian Capacity Remuneration Mechanism

Based on the state of design of end of 2019

03/02/2020



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Disclaimer

This document provides different fictive examples, so-called use cases, related to the Capacity Remuneration Mechanism being developed in Belgium.

This document has, as sole purpose, to explain the design by means of examples. By no means, the document replaces the rules in the relevant laws, royal decrees, and regulatory approved documents.

The underlying idea of this document is to present full cycles use cases going through the entire process of the CRM for various kind of capacities and different time schedules. Given that the CRM process consists of several steps and for each of these steps several types of information and details are relevant, it is to be understood that this document focusses on the most pertinent aspects. Although very detailed examples are developed, this does not mean/imply in any case, that any parameters/figures regarding the CRM that are not mentioned in the examples are not or less relevant than those mentioned. The full set of rules is always to be followed. The choices in the examples are only made for illustrative purposes and do not imply any judgement.

All the figures and numbers used for these use cases are purely fictive. These numbers nor the use cases presented should be interpreted as representing a concrete case or a concrete situation of the Belgian Capacity Market or an implied proposal for any CRM parameter.

The use cases developed in this document are based on the design as known at the moment of writing. In concreto, the examples are based on the design proposals as published and available end of 2019, particularly the draft Market Rules and the Proposal of KB Methodology. It also builds on the proposals related to the minimum threshold and obviously follows the context set by the Electricity Law.



1. Introduction

As mentioned in the disclaimer, the goal of this document is to provide a detailed overview of the different process steps of the CRM. This document can help to better understand the functioning of the CRM.

Given that the amount of possibilities for possible use cases is large, a selection has been made aiming to best illustrate the different design aspects. The choice of examples does not imply any anticipation, preference, ... of Elia.

This document presents 4 use cases:

- 1) A new CCGT with a **Nominal Reference Power** of 300 MW and 2 different **CMUs** (a steam and a gas turbine);
- 2) A new DSR with a **Nominal Reference Power** of 15 MW;
- 3) An existing OCGT with a **Nominal Reference Power** of 200 MW which decides to partially opt-out;
- 4) A **Capacity Provider** with a **Nominal Reference Power** of 60 MW which decides to partially opt-out and gathers various **Delivery Points** (DSR, storage)

These use cases are always presented following the same process order:

- 1) Prequalification Process
- 2) Auction process
- 3) Pre-delivery monitoring
- 4) Secondary Market
- 5) Availability Monitoring & Penalties
- 6) Payback Obligation

Furthermore, each of these steps is always summarized with the relevant numbers in a table at its end.

Finally, all the terms indicated in **bold** in this document are the most relevant terms belonging to the list of definitions presented in the draft of the Market Rules available on Elia's website¹. Note that for maintaining readability and allowing to differentiate in relevance, not all the terms defined in the Market Rules have been highlighted in bold in this document. The terms indicated in bold in this document are terms considered as particularly important in understanding the use cases.

Note that the use cases do not go into details related to the assessment of investments with respect to the eligibility for multi-year contracts.

¹ https://www.elia.be/-/media/project/elia/elia-site/ug/crm/20191125_crm-market-rules-proposal_v2.pdf



2. Use case 1: a new CCGT production Capacity with a Nominal Reference Power of 300 MW

2.1 Prequalification Process

A **CRM Candidate** with a potential location is investigating to construct a new **Capacity** in the context of the Belgian CRM. The participant is considering in fact two different projects at the same location, i.e. either a CCGT or an OCGT configuration. The participant would like to express this desire through mutually exclusive **Bids** in the **Auction**. He is looking at the possibility to build:

- A CCGT project uniting a gas and a steam turbine at the same time (2 **CMUs**). These gas and steam turbines would be translated into a multi-year project requiring both a high degree of investments. This project requires its investment file to be sent to CREG to see whether it will be allowed by CREG to apply for a multi-year contract. Moreover, it will require also an EDS study and a technical agreement from Elia.
- An OCGT project for the gas turbine only (1 **CMU**). Building this new gas turbine must also be considered as a multi-year project which can be translated into a high degree of investment. It must therefore send its investment file to CREG to see whether it is allowed to apply for a multi-year contract. Furthermore, it requires an EDS study as well as a positive technical agreement from Elia.

As exposed above, the **CRM Candidate** will need a technical agreement from Elia for both configurations, indicating that the capacity can be connected to the Elia grid (and the price to do so).

Before starting their **Prequalification Process**, both **CRM Candidates** require to commit themselves on the following:

- An endorsement of the **Capacity Contract Framework**;
- Its compliance with the relevant legal and regulatory framework defined in the CRM framework;
- Its respect of the eligibility criteria's set by the Royal Decree for the FPS Economy (cumulative support and minimal participation threshold);

As a second step, the **CRM Candidate** can introduce its prequalification file, consisting in:

- ⇒ For the CCGT project, 2 separate **CMUs**:
 - **CMU 1** corresponding to the gas turbine with a declared **Nominal Reference Power** of 180 MW and;
 - **CMU 2** corresponding to the steam turbine with a declared **Nominal Reference Power** of 120 MW.
- ⇒ For the OCGT project, as it only consist in the gas turbine prequalified as **CMU 1** and concern the same declared **Nominal Reference Power** of 180 MW, no new **CMU** needs to be introduced in addition.

The **CRM Candidate** also indicates to Elia that both configuration are part of an investment file introduced to CREG. This notification is important as in that case Elia needs to communicate the prequalification results to CREG prior to the 1st of September.



It should also be mentioned that the steam turbine of the CCGT is technically dependent of the gas turbine as the gas turbine generates power and heat at the same time and the steam turbine uses this heat to generate power as well. The steam and the gas turbines are considered as ‘linked capacities’²: they are indeed located on the same geographical site. There is, furthermore, a technical link between them although they cannot be aggregated together as they must both provide a **Daily Schedule**. This means that this **CRM Candidate** must prequalify both the gas and the steam turbines as different entities if it makes the choice of building a new CCGT project and is willing to prequalify 300 MW of **Nominal Reference Power**. On the other hand, if it makes the choice of building a new OCGT project and wants to reach a **Nominal Reference Power** of 180 MW, it must only prequalify the gas turbine.

Given that this **Nominal Reference Power** is declared and cannot be measured based on a certified metering device, all related **CMUs** are additional and the **CRM Candidate** shall provide a project execution plan as exposed in the Market Rules.

The **Opt-Out Volume** related to these projects (both the CCGT and the OCGT) is, in any case, equal to 0 MW. Their respective **Reference Power** is equal to their respective **Nominal Reference Power** given that they did not opt-out:

- For the CCGT project to 300 MW including a **Reference Power** for one **CMU** of 180 MW (the gas turbine) and a **Reference Power** for the other **CMU** of 120 MW (a steam turbine)
- For the OCGT project to 180 MW including a **Reference Power** for this **CMU** of 180 MW only (the gas turbine).

The applicable **Derating Factor** for both of these projects is equal to 0.90. Therefore their respective **Eligible Volume** is equal to:

- For the CCGT project : **Reference Power** of the gas turbine 180 MW * **Derating Factor** of 0.9 + **Reference Power** of the steam turbine 120 MW * **Derating Factor** of 0.9 = 162 MW + 108 MW = 270 MW
- For OCGT project : **Reference Power** of 180 MW * **Derating Factor** of 0,9 = 162 MW

The total **Eligible Volume** of the CCGT project, if it is selected by the **CRM Candidate**, will be equal to 270 MW whereas the **Eligible Volume** of the OCGT project, again if selected, will be equal to 162 MW.

As part of its prequalification file, the **CRM Candidate** introduces a conditional bank guarantee signed by a recognized financial institution and covering an amount of 20 k€ multiplied by its **Eligible Volume** (270 MW). Considering that the two projects are exclusive (either the CCGT configuration will be selected, either the OCGT), one single bank guarantee covering the highest **Eligible Volume** (270 MW) is accepted for both projects.

² See the definition of the CREG for ‘linked capacities’ available at the following link: <https://www.creg.be/sites/default/files/assets/Publications/Propositions/C1907FR.pdf>



Moreover, each of these **CRM Candidates** present also the following specifications:

- ⇒ For each **DP**, it must provide the following information:
 - The technology of the related **Capacity**;
 - The CO2 emission of the related **Capacity**;
 - Its full technical injection **Capacity**;
 - A single line diagram with a specific identification of the exact location of the **CMUs** (as the CCGT project would gather both a gas and a steam turbine).
 - A valid **Grid User Declaration** as provided in the **Capacity Contract Framework**;

- ⇒ On **CMU** level:
 - This **CRM Candidate** has to submit a **Daily Schedule** because of its **Capacity** (independently from their participation to the CRM): this means that it cannot provide a **Declared Market Price** which could be used as correction for its **Strike Price**;
 - A selected **NEMO** for Reference Price definition: Day-Ahead EPEX Spot Market;

Finally, this CCGT project must also provide the following information:

- A related project execution plan (respecting identified milestones and key milestones as detailed in the **Capacity Contract Framework**);
- Its required interactions with 3rd parties : DSO, Fluxys, the FPS Economy (for production permit), the CREG (for the investment file), ...

As both of these projects require an important level of investments, they are applying to CREG for a multi-year contract. They have therefore sent their investment file to the CREG for review and have notified it to Elia. The CREG assigns these 2 projects (the CCGT project and the OCGT project) to a **Capacity Category** of maximally 8 years meaning that they can apply in the CRM **Auction** for a **Capacity Contract** up to 8 years. CREG notifies it to Elia. Both of these projects apply for a **Capacity Contract Duration** of 8 years.

As a reminder, given that the **CMUs** of this CCGT project are being prequalified as **Additional Capacities**, their respective **Nominal Reference Power** has been declared and could not be measured by a certified metering device at the moment of the **Prequalification Process**. This value will be verified by Elia as part of the pre-delivery monitoring process.

Both projects successfully pass the **Prequalification Process**.

As exposed in the disclaimer in the beginning of this document, we will not enter into all the details related to the **Prequalification Process** for each type of **Project/CMU/CRM Candidate/DPs**. The specific numbers provided can be considered as illustrative for the purpose of this exercise. Nevertheless, it is assumed that the **CRM Candidates/CMUs/DPs** comply with all requirements of the **Prequalification Process** mentioned above. This does not mean, in any case, that other figures are not important in the framework of the life-cycle of the CRM.



Summary of the main figures of the Prequalification Process

	Project 1 CCGT (gas & steam turbine)	Project 2 OCGT (steam turbine)
Nominal Reference Power	180 MW + 120 MW = 300 MW	180 MW
Opt-Out Volume	0 MW	0 MW
Reference Power	180 MW + 120 MW = 300 MW	180 MW
Derating Factor	0.9	0.9
Eligible Volume	$180 \text{ MW} * 0,9 + 120 \text{ MW} * 0,9 = 162 \text{ MW} + 108 \text{ MW} = 270 \text{ MW}$	$180 \text{ MW} * 0,9 = 162 \text{ MW}$
Reference Price selected	Day-Ahead EPEX Spot Market	Day-Ahead EPEX Spot Market
CMUs with a Daily Schedule	YES	YES
conditional bank guarantee	$20.000 \text{ €} * 270 \text{ MW} = 5.400.000 \text{ €}$	covered by bank guarantee of project 1 ; as they are mutually exclusive and indicated as such in the prequalification file

2.2 Auction process

This **CRM Candidate** has received the approval, during its **Prequalification Process**, to submit linked **Bids** for its CCGT project, as it consists of two CMUs technically dependent (steam turbine cannot function without the gas turbine)

Different **Bids** have therefore been submitted for these 2 projects:

- ⇒ 2 linked **Bids** for the CCGT project (steam and gas turbines) together with the **CMU 1** (gas turbine) with an **Eligible Volume** ((162MW) equal to its **Bid Volume** and the **CMU 2** (steam turbine) with an **Eligible Volume** (108 MW) equivalent to its **Bid Volume**. Both of these linked **Bids** are submitted for a **Capacity Contract Duration** of 8-year.
 - The **Bid Price** required for the CCGT project for these linked **Bids** are respectively equal to 35€/KW/year for the **CMU 1** (the gas turbine) and to 30€/kW/year for the **CMU 2** (the steam turbine).
- ⇒ The **Bid** of the OCGT covering only one **CMU** (gas turbine) with an **Eligible Volume** (162 MW) equivalent to its **Bid Volume**. This **Bid** is submitted for a **Capacity Contract Duration** of 8-year as well.
 - The **Bid Price** required for the OCGT project for the single Bid is equal to of 45 €/kW/year (the gas turbine alone).

As these linked **Bids** - the CCGT configuration and the single **Bid** - the OCGT configuration are mutually exclusive, only the linked **Bids** or the single **Bid** can be selected through this **Auction** with their associated **Capacity Contract Duration**.



The auction algorithm of the CRM selects the linked **Bids** – the CCGT configuration gathering the gas and the steam turbines together. Given that CREG has assigned the **CMUs** of this project to a **Capacity Category** of maximally 8 years based on their investment files (and the costs described in their respective files), both the gas turbine (**CMU 1**) and the steam turbine (**CMU 2**) are applying for a **Capacity Contract Duration** of 8 years.

As these **CMUs** have been declared eligible to apply for multi-years **Capacity Contracts**, the **Bids** related to these **CMUs** are not subject to the **Intermediate Price Cap** of this **Auction** which has currently been set to a value of 28 €/KW/year.

The yearly **Capacity Remuneration** of the gas turbine is equal to 35€/kW/year for the **CMU 1** (gas turbine: 162 MW) and 30 €/kW/year for the **CMU 2** (steam turbine: 108 MW). The total yearly **Capacity Remuneration** of the CCGT project amounts to $((35.000\text{€}/\text{MW} * 162 \text{ MW}) + ((30.000\text{€}/\text{MW} * 108 \text{ MW})) = (5.670.000 \text{ €} + 3.240.000 \text{ €}) = 8.910.000 \text{ €}$.

This yearly **Capacity Remuneration** of 8.910.000 €/year is therefore also equal to its **Stop-Loss Limit**. It is important to keep in mind that a **Stop-Loss Limit** is applicable for the **Availability Monitoring** & the **Payback Obligation** processes apart. This **Stop-Loss Limit** is applicable per **Delivery Period**.

Both the gas and the steam turbines have been granted a **Capacity Contract** of 8 years. Their respective **Eligible Volume** become a **Contracted Capacity** of respectively 162 and 108 MW each, 270 MW for the entire CCGT project.

Given that they are both **Non-Energy Constrained CMUs**, the **Obligated Capacity** of both **CMUs** of this **Prequalified CRM Candidate** are equal to their **Contracted Capacities** of 162 and 108 MW (respectively for the gas and the steam turbines). These **Contracted Capacities** are linked to a calibrated **Strike Price** of 400€/MWh which was published by the end of March the year preceding this **Auction**.

Given that both of these **CMUs** have received a **Capacity Contract**, they must provide their effective bank guarantee of equal to:

- ⇒ $20.000 \text{ €} * 162 \text{ MW} = 3.240.000 \text{ €}$ for the 1st **CMU** (the gas turbine)
- ⇒ $20.000 \text{ €} * 108 \text{ MW} = 2.160.000 \text{ €}$ for the 2nd **CMU** (the steam turbine)

The total amount of the effective CCGT bank guarantee is therefore equal to $3.240.000 \text{ €} + 2.160.000 \text{ €} = 5.400.000 \text{ €}$



Summary of the main figures of the Auction process

CMUs	CMU 1 : gas turbine	CMU 2 : steam turbine
Contracted Capacity	162 MW	108 MW
Obligated Capacity	162 MW	108 MW
yearly Capacity Remuneration	162 * 35.000 € = 5.670.000 €	108*30.000 € = 3.240.000 €
Contract Capacity Duration	8 years	8 years
Stop-Loss Limit	5.670.000 €	3.240.000 €
effective bank guarantee	162*20.000 € = 3.240.000 €	108*20.000 € = 2.160.000 €
initial Strike Price linked to Contracted Capacity	400 €/MWh	400 €/MWh

2.3 Pre-delivery monitoring

After the **Auction** and before the start of the 1st **Delivery Period** (2025-2026), the CCGT project and its **CMUs** are subject to a pre-delivery monitoring. The CCGT project had to deliver a quarterly monitoring reports to Elia as it was prequalified as “**Additional Capacity**”

In its last quarterly monitoring report, the **Capacity Provider** notifies Elia that the project suffered from a delay of several months for which no mitigation plan can be found. As this notification is made prior to the volume calculation of Y-1 **Auction** for the same **Delivery Period**, Elia increases the volume to be procured in Y-1 by the **Contracted Capacity** which will not be available (300 MW). The consequences for the **Capacity provider** are double:

- ⇒ Its **Capacity Contract Duration** is reduced by one year (start of delivery is delayed by one year as the related **Capacity** is contracted by Elia in the Y-1 **Auction**);
- ⇒ A penalty corresponding to 33 % of the amount covered by the bank guarantee (20 k€ * 270 MW) is due to Elia.

After paying this financial penalty and after the entire pre-delivery monitoring process, both **CMUs** finish their pre-delivery monitoring and finalize the **Prequalification Process** to become “**Existing Capacity**”. . This means that their **Nominal Reference Power** can be measured by Elia based on a certified metering device. From that moment, they are allowed to participate on the **Secondary Market** as “buyers”. Furthermore, related bank guarantee is released after start of first **Delivery Period**. .



Summary of the main figures of the pre-delivery monitoring in 2025-2026

CMUs	CMU 1 : gas turbine	CMU 2 : steam turbine
Available Capacity	0 MW	0 MW
Obligated Capacity	162 MW	108 MW
delayed volume with respect to initial Contracted Capacity	162 MW	108 MW
Contracted Capacity	162 MW	108 MW
volume to be (re)auctioned in Y-1	162 MW	108 MW
updated Secondary Market Capacity	0 MW	0 MW
financial penalty to be applied on the bank guarantee due to the delay of the project notified	financial penalty to be paid by the CCGT project : $0,33 \times 5.400.000 \text{ €} = 1.800.000 \text{ €}$	

2.4 Secondary Market

The **Secondary Market Capacity** each of these **CMUs** is able to offer to the **Secondary Market** in **Delivery Period** 2026-2027 is equal to:

Max (0; (Nominal Reference Power (CMU, t) – Total Contracted Capacity (CMU, t) – (Opt-Out Volume (CMU, t) * Last Published Derating Factor (CMU))).

- ⇒ **Secondary Market Capacity** of the **CMU 1** (gas turbine) is equal to: Max (0; (180 MW – 162 MW – (0 MW) = 18 MW.
- ⇒ **Secondary Market Capacity** of the **CMU 2** (steam turbine) is equal to: Max (0; (120 MW – 108 MW = 12 MW

In November 2026 (the 2nd **Delivery Period** of the **Capacity Contract** of this CCGT project), an unexpected incident occurs to the steam turbine. It causes a **Forced Outage** of 25 MW for a period of 3 months (01/11/2026 – 31/01/2027).

A solution is found on the **Secondary Market** for 5 MW of the **Missing Capacity** of the steam turbine due to the forced outage. The steam turbine has to transfer a part of its yearly **Capacity Remuneration** for the 5 MW sold on the **Secondary Market** for the period mentioned above for this **Secondary Market Transaction**. It also shares its **Availability Monitoring & Payback Obligations** for this **Capacity** transferred via the **Secondary Market**.

- ⇒ The **Capacity Remuneration** transferred to the **Buyer of the Obligation** from the steam turbine: $5 \text{ MW} * 30.000 \text{ €} * (92 * 24 / 8760) = 150.000 \text{ €} * 0,25 = 37.500 \text{ €}$.

The steam turbine still suffers from a **Missing Capacity** equal to 20 MW for which it does not find a solution on the **Secondary Market**.

Given that both turbines are technically interdependent (in CCGT mode), the **CMU 1** (gas turbine) will manage to adapt its running pattern with respect to the evolution of the **CMU 2** (steam turbine) technical capabilities. **Capacity Provider**



decides therefore to sell 5 MW of its **CMU 1** (gas turbine) **Contracted Capacity** on the **Secondary Market** to another **Capacity Provider CMU** so that the **Contracted Capacity** of the gas turbine evolves in the same direction than the one taken by the steam turbine. By doing so, the CCGT as a whole remains contractually in line with its technical capabilities. The gas turbine becomes therefore the **Seller of an Obligation** of 5 MW during the above mentioned period during the **Delivery Period 2026 - 2027**. As exposed above for the steam turbine, the gas turbine must also transfer a part of its **Capacity Remuneration** for the 5 MW sold on the **Secondary Market** for the period mentioned above.

- ⇒ The **Capacity Remuneration** transferred to the **Buyer of the Obligation** from the gas turbine: $5 \text{ MW} * 35.000 \text{ €} * (92 * 24 / 8760) = 175.000 \text{ €} * 0,25 = 43.750 \text{ €}$.

Moreover, it shares its **Availability Monitoring & Payback Obligations** for this **Capacity** transferred via the **Secondary Market** as well.

It is important to insist on the fact that selling a part of its **Contracted Capacity** is equal to reduce its **Contracted Capacity** by the amount of the part of the obligation sold on the **Secondary Market**, therefore the **Obligated Capacity** of the **CMU** selling some **Capacity** on the **Secondary Market** follows its **Contracted Capacity** which means that its **Obligated Capacity** is reduced. Therefore, it transfers a part of its **Capacity Remuneration** in function of the **Capacity** sold on the **Secondary Market**.

This means that the respective **Total Contracted Capacity** of the **CMUs** (1 and 2) of the CCGT project amounts, ex-post of this **Transaction**, to:

- ⇒ **CMU 1** (gas turbine): $162 \text{ MW} - 5 \text{ MW} = 157 \text{ MW}$
- ⇒ **CMU 2** (steam turbine): $108 \text{ MW} - 5 \text{ MW} = 103 \text{ MW}$

The applicable **Strike Price** for **Secondary Market Transactions** is communicated to the **Buyers of the Obligations** sold by the gas and the steam turbines.

After these **Secondary Market Transactions**, here are the figures for the **CMUs** of the CCGT project:

- ⇒ The **Available Capacity** of the gas turbine : 162 MW
- ⇒ The **Available Capacity** of the steam turbine : $108 \text{ MW} - 25 \text{ MW} = 83 \text{ MW}$
- ⇒ The **Total Contracted Capacity** of the gas turbine (after the **Forced Outage**) : $162 \text{ MW} - 5 \text{ MW} = 157 \text{ MW}$
- ⇒ The **Total Contracted Capacity** of the steam turbine (after the **Forced Outage**) : $108 \text{ MW} - 5 \text{ MW} = 103 \text{ MW}$

The **Obligated Capacity** of both **CMUs** is following the **Total Contracted Capacity** of these **CMUs**:

- ⇒ The updated **Obligated Capacity** of the gas turbine: 157 MW
- ⇒ The updated **Obligated Capacity** of the steam turbine: 103 MW

The steam turbine is only liable to a **Payback Obligation** for its **Available Capacity** for a maximum of its **Contracted Capacity** given that the forced outage was announced before Elia's communication on the DAM clearing price. This **CMU** will only be liable to a **Payback Obligation** for the **Capacity** it actually provided.



Summary of the main figures for the Secondary Market

CMUs	CMU 1 : gas turbine	CMU 2 : steam turbine
Secondary Market Capacity	180 MW – 162 MW = 18 MW	120 MW – 108 MW = 12 MW
Contracted Capacity (before Forced Outage)	162 MW	108 MW
Total Contracted Capacity (before Forced Outage)	162 MW	108 MW
Forced Outage	0 MW	25 MW
Total Contracted Capacity (after Forced Outage)	162 MW - 5 MW = 157 MW	108 MW – 5 MW = 103 MW
Obligated Capacity	157 MW	103 MW
Available Capacity	157 MW	83 MW
Missing Capacity	0 MW	20 MW
Capacity Remuneration transferred via the Secondary Market	- (5MW* 35.000 €/MW*(92*24/8760)) = - 43.750 €	- (5MW*30.000 €/MW* (92*24/8760)) = - 37.500 €
Strike Price applicable to the Buyer of the Obligation for the Secondary Market	400 €/MWh	400 €/MWh

2.5 Availability Monitoring & Penalties

Each **CMU** of the CCGT project will be liable for its **Missing Capacity** for which there was no solution found on the **Secondary Market** for 2 hours.

The **Availability Penalty** of the each **CMU** is calculated as follows :

- ⇒ **CMU 1** (gas turbine) : not liable to an **Availability Penalty** as its **Available Capacity** is equal to its **Obligated Capacity**
- ⇒ **Availability Penalty** for the steam turbine: $((1 + X) * (20 \text{ MW})) * \text{yearly contract value (}=35.000 \text{ €)} / ((15 (= \text{UP}) * 2 (\text{AMT Hours}))$
- ⇒ **CMU 2** (steam turbine): $((1+1)*(103 \text{ MW} - 83 \text{ MW}))* (30.000 \text{ €/MW}) / (15*2) = 40.000 \text{ €}$

X, the **Unavailability factor**, is equal to 1 as we are in a situation of announced availability but during a **Winter Period**. Given that the partial unavailability due to the forced outage has been announced before the announcement of the **AMT Moments** the, the **CMU 2** (steam turbine) will not be liable for the payment of a **Payback Obligation** for the **Capacity** linked to the forced outage.

As a reminder, **Availability Penalties** are subject to a monthly cap of 20% of the yearly contract value in order to keep penalties at a reasonable level and keep incentives for **CMUs** to remain available throughout the remainder of the **Delivery Period**.



- ⇒ The **Availability Penalty** monthly cap for the steam turbine is equal to 20 % of its yearly **Capacity Remuneration**: $0,2 \times 3.240.000 \text{ €} = 648.000 \text{ €}$

The **Availability Penalty** monthly cap is thus not reached by the **Availability Penalty** for any of the **CMUs**.

Summary of the main figures of the Availability Monitoring

CMUs	CMU 1 : gas turbine	CMU 2 : steam turbine
updated Obligated Capacity	157 MW	103 MW
Available Capacity	157 MW	83 MW
Missing Capacity	0 MW	20 MW
Hours in the AMT Moment	0 hours	2 hours
UP	15	15
Unavailability Factor applicable (X)	1	1
Availability Penalty	0 €	$((1+1) \times (103 \text{ MW} - 83 \text{ MW})) \times (30.000 \text{ €/MW}) / (15 \times 2) = 40.000 \text{ €}$
Availability Penalty monthly cap	$0,2 \times 5.670.000 \text{ €} = 1.134.000 \text{ €}$	$0,2 \times 3.240.000 \text{ €} = 648.000 \text{ €}$

2.6 Payback Obligation determination

The **Payback Obligation** is applicable to both **CMUs** for 2 hours in November 2025 from 6 PM to 8 PM the 18 November 2025. These 2 **AMT hours** are liable to a **Payback Obligation** as the reference prices from the EPEX SPOT for these **AMT Hours** for which the reference price exceeds the **Strike Price**.

The **Availability Ratio** applicable for each of these **CMUs** is calculated as follows:

$$\text{Min}(1; \text{Available Capacity of a CMU} / \text{Total Contracted Capacity of a CMU}).$$

It gives us the following results:

- ⇒ **CMU 1** (gas turbine): $157 \text{ MW} / 157 \text{ MW} = 1$. As the minimum between 1 and 1 must be selected, it is equal to 1;
- ⇒ **CMU 2** (steam turbine): $83 \text{ MW} / 103 \text{ MW} = 0,81$. As the minimum between 0,81 and 1 must be selected, it is equal to 0,81.

The reference price during the **AMT Hours** observed from the EPEX DAM (450 €/MWh; 525 €/MWh) respectively for 6 PM and 7 PM:

- ⇒ 0 € for all hours of November excepted 2 hours:
- ⇒ 2 hours on 18/11/2025



CMUs	CMU 1 gas turbine	CMU 2 steam turbine
6 PM	Primary Transaction : Max (0;(450€/MWh – 400 €/MWh)* 157 MW*1) = 7.850 €	Primary Transaction : Max (0;(450€/MWh – 400 €/MWh)* 83 MW*0,81) = 3361,5 €
	Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation	Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation
7 PM	Primary Transaction : Max (0;(525€/MWh – 400 €/MWh)* 157 MW*1) = 19.625 €	Primary Transaction : Max (0;(525€/MWh – 400 €/MWh)* 83 MW*0,81) = 8.403,75 €
	Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation	Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation

As a reminder, no **Payback Obligation** is calculated for the volume due to the forced outage for the steam turbine given that it has been notified to Elia before Elia’s declaration related to the DAM clearing price.

The total **Payback Obligation**: 7.850 € + 3361,5 € + 19.625 € + 8403,75 € = 39.240,25

Summary of main figures for the Payback Obligation determination

CMUs	CMU 1 : gas turbine	CMU 2 : steam turbine
Initial Strike Price	400 €/MWh	400 €/MWh
Strike Price applicable for Secondary Market Capacity	400 €/MWh	400 €/MWh
AMT Hours applicable for the Payback Obligation determination	2	2
Reference(s) Price(s) applicable for the Payback Obligation determination	450 €/MWh ; 525 €/MWh	450 €/MWh ; 525 €/MWh
Payback Obligation	7850 € + 19.625 € = 27.475 €	3361,5 € + 8403,75 € = 11.765,25 €
Availability Ratio	1	0,81



2.7 Final Remuneration – 1st Delivery Period Revenue-Costs balance: 2025 - 2026

Summary of Remunerations – Costs balance

CMUs	CMU 1 : gas turbine	CMU 2 : steam turbine
yearly Capacity Remuneration	0 €	0 €
financial penalty to be applied on the bank guarantee due to the delay of the project notified	0,33*5.400.000 € = 1.800.000 €	
Secondary Market Capacity Remuneration transferred	NA as the entire volume has been shifted to the 2 nd Delivery Period	
Availability Monitoring Penalty	NA as the entire volume has been shifted to the 2 nd Delivery Period	
Payback Obligation	NA as the entire volume has been shifted to the 2 nd Delivery Period	

2.8 Final Remuneration – 2nd Delivery Period Revenue-Costs balance: 2026 - 2027

Summary of Remunerations – Costs balance

CMUs	CMU 1 : gas turbine	CMU 2 : steam turbine
yearly Capacity Remuneration	5.670.000 €	3.240.000 €
financial penalty to be applied on the bank guarantee due to the delay of the project notified	0 €	
Secondary Market Capacity Remuneration transferred	- 43.750 €	- 37.500 €
Availability Monitoring Penalty	0 €	- 40.000 €
Payback Obligation	- 27.475 €	- 11.765,25 €



3. Use case 2: a new Energy-Constrained DSR with a Nominal Reference Power of 15 MW

3.1 Prequalification Process

A **CRM Candidate** with a potential location is investigating to construct a new **Capacity** in the context of the Belgian CRM. This **CRM Candidate** is planning to build a new **Demand Side Response** process (hereafter **DSR**) composed of 2 **Delivery Points** so that it can increase its flexibility and can control better its industrial process. This **CMU** is facing a restricted amount of investments and cannot hope to be allowed to apply for a multi-year contract. Furthermore, it requires a positive technical agreement from Elia before being allowed to be built.

As exposed above, the **CRM Candidate** participant will need a technical agreement from Elia, indicating that the **Capacity** can be connected to the Elia grid (and the price to do so).

Before starting its **Prequalification Process**, this **CRM Candidate** requires to commit themselves on the following:

- An endorsement of the **Capacity Contract Framework**;
- Its compliance with the relevant legal and regulatory framework defined in the CRM framework;
- Its respect of the eligibility criteria's set by the Royal Decree for the FPS Economy (cumulative support and minimal participation threshold);

As a second step, the **CRM Candidate** can introduce its prequalification file, consisting in an **Additional Capacity** being a new **DSR** with a declared **Nominal Reference Power** of 15 MW. It decides not to opt-out: its **Opt-Out Volume** is equal to 0 MW. Its **Reference Power** is therefore equal to its **Nominal Reference Power**: 15 MW.

As this **CMU** has a limited degree of investment, it is not allowed to apply for a multi-year contract in the CRM Auction in Y-4 for the **Delivery Period** November 2025 - October 2026.

Given that this **Nominal Reference Power** is declared and cannot be measured based on a certified metering device, its **CMU** is additional and the **CRM Candidate** shall provide a project execution plan as exposed in the Market Rules. Its **Nominal Reference Power** shall be verified by Elia through the pre-delivery monitoring. Moreover, this **CRM Candidate** chooses a **SLA** of 3 hours associated to a **Derating Factor** of 0,3.

Its **Eligible Volume** is therefore equal to: $15 \text{ MW} * 0,3 = 4,5 \text{ MW}$.

As part of its prequalification file, the **CRM Candidate** introduces a conditional bank guarantee signed by a recognized financial institution and covering an amount of 20 k€ multiplied by its **Eligible Volume** (15 MW).

Moreover, this project presents also the following specifications:

- ⇒ For each **Delivery Point**, it must provide the following information:
 - The technology of the related **Capacity**;



- The CO2 emission of the related **Capacity**;
 - Its full technical offtake **Capacity** (see above);
 - Its **Unsheddable Margin** (see in the table below);
 - A single line diagram with a specific identification of the exact location of the **CMUs** of the **Capacity**;
 - A valid **Grid User Declaration** as provided in the **Capacity Contract Framework**;
 - A **DSO-CRM Candidate** agreement
- ⇒ On **CMU** level:
- A **Declared Market Price** which shall be used as correction for its **Strike Price** if its **Declared Price** exceeds or is equal to the applicable **Strike Price** (see **Auction Process** below);
 - A selected **NEMO** for the reference price: Day-Ahead EPEX Spot Market;

Finally, this **CMU** must also provide the following information:

- A related project execution plan (respecting identified milestones and key milestones as detailed in the **Capacity Contract Framework**);
- Its required interactions with 3rd parties : DSO, Fluxys, the FPS Economy (production permit), the CREG (investment file), ...

As mentioned above, this **DSR** is allowed to provide an **Unsheddable Margin** as well. This **Unsheddable Margin** is considered apart from the **Nominal Reference Power** of the **CMU** declared in the CRM. In other words, it means that the **Unsheddable Margin** of the 2 **DPs** of this **CMU** does not impact their **Nominal Reference Power**. The installed capacity of these **CMUs** is therefore equal to their **Nominal Reference Power** majored by their **Unsheddable Margin**.

It successfully passes the **Prequalification Process**.

As exposed in the disclaimer in the beginning of this document, we will not enter all the details related to the **Prequalification Process** for each type of **CRM Candidate/CMU/DP**. The specific numbers provided can be considered as illustrative for the purpose of this exercise. Nevertheless, it is assumed that the **CRM Candidate/CMU/DP** complies with the requirements of the **Prequalification Process** mentioned above. This does not mean, in any case, that other figures are not important in the framework of the life-cycle of the CRM.

Short summary related to the DPs of this CMU

Parameters	DP 1	DP 2
declared Nominal Reference Power	10 MW	5 MW
Unsheddable Margin	5 MW	2 MW
installed capacity	15 MW	7 MW



Summary of the main figures of the CMU for the Prequalification Process

declared Nominal Reference Power	Opt-Out Volume	Reference Power	SLA	Associated Derating Factor	Reference Price Selected	CMU with a Daily Schedule	Eligible Volume	bank guarantee
15 MW	0 MW	15 MW	3 hours	0,3	EPEX Sport Market	NO	4,5 MW	4,5MW * 20.000 €/MW = 90.000 €

3.2 Auction Process

This **CMU** is only allowed to apply for a 1 year contract and it will be subject to the **Intermediate Price Cap**. The **Intermediate Price Cap** for this **Auction** is equal to 22€/kW/year. This **Prequalified CRM Candidate** submits a **Bid** for its **CMU** with a **Bid Volume** equal to its **Eligible Volume** of 4,5 MW a **Bid Price** of 22€/kW/year. The auction algorithm selects the **Bid** of this **DSR CMU**.

Its **Contracted Capacity** is equal to its **Eligible Volume**: 4,5 MW.

- ⇒ It is paid 22.000 €/MW/year and its yearly **Capacity Remuneration** is equal to its **Eligible Volume** multiplied by this amount per MW: 22.000€/MW * 4,5 MW = 99.000 €.
- ⇒ Its **Stop-Loss Limit** is equal to its yearly **Capacity Remuneration** 99.000 €. It is important to keep in mind that a **Stop-Loss Limit** is applicable for the **Availability Monitoring** & the **Payback Obligation** processes apart.

This **Prequalified CRM Candidate** receives a **Capacity Contract** of 1 year and must provide an effective bank guarantee of 4,5 MW*20.000 € = 90.000 €.

Finally this **DSR** is a **CMU** without a **Daily Schedule**, it is obliged to communicate at least a **Declared Day-Ahead Price** and allowed to declare other (partial) declared prices on the **Intraday** and **Balancing Markets** which will be used in case the reference price in the EPEX Sport market > initial **Strike Price** being equal to 370 €/MWh.

Summary of the main figures for the Auction process

Contracted Capacity	Obligated Capacity during SLA Hours	yearly Capacity Remuneration	Stop-Loss Limit	Contract Capacity Duration	effective bank guarantee	Initial Strike Price
4,5MW	15 MW	4,5MW * 22.000 €/MW = 99.000 €	99.000 €	3 years	15*20.000 = 300.000 €	370 €/MWh



Declared Day Ahead Price	(Partial) Declared Intraday Market Price	(Partial) Declared Balancing Price)
480 €/MWh	NA	NA

3.3 Pre-delivery monitoring

After the Prequalification and the Auction processes, this **Capacity Provider** must comply with the figures it provided for the pre-delivery monitoring phase. Since its **Prequalification Process**, this **Capacity Provider** has provided to Elia a quarterly monitoring report in which the project’s evolution is given according to pre-delivery monitoring requirements. This **Capacity Provider** is not subject to any delay or event, which would impact negatively its schedule. Therefore, this **Capacity Provider** is not subject to any pre-delivery monitoring penalty.

After the entire pre-delivery monitoring process, this **Capacity Provider** becomes existing. Its bank guarantee is given back to him. Furthermore, if this **CMU** is willing to buy/sell some **Capacity** on the **Secondary Market**, its respective **Contracted Capacity** will be increased/reduced accordingly.

Summary of the main figures for the pre-delivery monitoring

Delayed Volume	Total Contracted Capacity	Bank guarantee	Financial Penalty due to a delay of the CMU in the pre-delivery monitoring	Volume to be (re)auctioned in Y-1
0 MW	4,5 MW	4,5 * 20.000 € = 90.000 €	0 €	0 MW

3.4 Secondary Market

Given that this **CMU** has not opted out, it cannot acquire a **Secondary Market Capacity** during its **SLA Hours**. Still, now that this **CMU** has been declared existing, it decides to acquire 10 MW of **Secondary Market Capacity** out of its **SLA Hours** ex post for a period of 1 week corresponding to an unexpected forced outage from another **CMU** for the following period (01/12/2025 – 07/12/2025).

This **Transaction** on the **Secondary Market** requires the transfer to this **DSR CMU, Buyer of the Obligation**, of:

- ⇒ The **Seller of the Obligation’s Capacity Remuneration** for the abovementioned period: its **Capacity Remuneration** was set at 20 €/KW/year. The transfer of the 10 MW will thus generate a transfer of $(10 * 20.000 €) * (7 * 24 / 8760) = 200.000 € * 0,02 = 4.000 €$
- ⇒ The **Seller of the Obligation’s Availability Monitoring & Penalties**
 - The **Seller of the Obligation’s Strike Price** defined in Y-4 : 400 €/MWh

After **Secondary Market Transactions**, This **DSR CMU** presents a **Total Contracted Capacity** equal to 4,5 MW during its **SLA Hours**. Its **Total Contracted Capacity** reaches 10 MW during its non-**SLA Hours** for a week in December 2025 out of its **SLA Hours** and is equal to 0 MW the rest of the time of this **Delivery Period**. Moreover, its **Obligated Capacity** is equal to:



- ⇒ 15 MW during its **SLA Hours**;
- ⇒ 10 MW ex-post during its non-**SLA Hours** during the following period (01/12/2025 – 07/12/2025).

As a reminder, this **Transaction** on the **Secondary Market** is happening ex-post which means that the **Capacity** exchanged via this **Transaction** is not derated.

Summary of the main figures related to the Secondary Market

Forced Out- age	updated Total Con- tracted Capacity	Obligated Capacity	Capacity Remuneration trans- ferred via the Secondary Market	Strike Price applicable for the Secondary Mar- ket
0 MW	4,5 MW during its SLA Hours ; 10 MW ex-post during the period (01/12/2025 – 07/12/2025) outside of its SLA Hours	15 MW during its SLA Hours ; 10 MW ex-post during the period (01/12/2025 – 07/12/2025) outside of its SLA Hours	+ 4.000 €	400 €/MWh

3.5 Availability Monitoring & Penalties

There happens to be a 3 MW **Missing Capacity** observed for this **DSR CMU** during its **SLA Hours**.

As a reminder, for **Energy-Constrained CMUs** with an associated **SLA**, their **Obligated Capacity** is equal to their **Reference Power** instead of their **Eligible Volume**.

This **Missing Capacity** is observed as follows during its **SLA Hours**:

- ⇒ 5 PM – 6 PM : AMT Hour 1
 - **Obligated Capacity** : 15 MW VS **Available Capacity** : 14 MW
- ⇒ 6 PM – 7 PM : AMT Hour 2
 - **Obligated Capacity** : 15 MW VS **Available Capacity** : 13 MW
- ⇒ 7 PM – 8 PM : AMT Hour 3
 - **Obligated Capacity** : 15 MW VS **Available Capacity** : 15 MW

As a reminder, the **Available Capacity** for any **AMT Hour** cannot compensate the **Obligated Capacity** required for another **AMT Hour**.

This **CMU** will be liable to an **Availability Penalty** for the 3 MW missing for which it could not find a solution on the **Secondary Market**. This **Availability Penalty** is equal to the following:

Availability Penalty for the DSR **CMU**: $((1 + X) * (3 \text{ MW})) * \text{yearly contract value } (=40.000 \text{ €}) / ((15 (= \text{UP}) * 3 \text{ (SLA Hours)})$

⇒ $((1+1)*(2 + 1 + 0))* 40.000 \text{ €}/45 = 5.333,333 \text{ €}$



X, the **Unavailability factor** is equal to 1 as we are in a situation of Unannounced Availability. The announcement of the unavailability occurred after the identification of the **AMT Moments** meaning that this **CMU** will be liable for the **Payback Obligation** although it is not entirely available.

As a reminder, **Availability Penalties** are subject to a monthly cap in order to keep penalties at a reasonable level and keep incentives for **CMUs** to remain in the CRM despite of its **Availability Penalties**.

⇒ The **Availability Penalty** monthly cap is equal to: $0,2 \times 99.000 \text{ €} = 19.800 \text{ €}$

The **Availability Penalty** monthly cap is thus not reached by the **Availability Penalty** due by this **DSR CMU**.

Summary of the main figures for the Availability Monitoring and Penalties

Obligated Capacity	Available Capacity	Missing Capacity	Unavailability Factor (X)	Availability Penalty monthly cap	UP (multiplied by SLA Hours)	Availability Penalty
15 MW	12 MW	3 MW	1	19.800 €	15*3 = 45 Hours	5.333,333 €

3.6 Payback Obligation determination

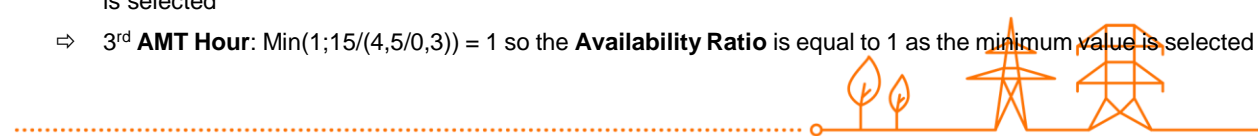
The **Payback Obligation** is applicable for 4 hours in December 2025 from 5 PM to 8 PM the 09/12/2025. These 4 **AMT hours** are liable to a **Payback Obligation** given that we are in a situation, for this **CMU**, of **Proven Availability**. Indeed, the prices observed for these hours on the EPEX SPOT Market exceed the **Declared Day-Ahead Price** (hereafter **DDAP**) of this **CMU**. The reference prices observed from the EPEX SPOT are the following (530 €/MWh, 500 €/MWh and 600 €/MWh).

Given that this **CMU** is a **CMU** without a **Daily Schedule**, it is allowed to refer to its **DDAP** (480 €/MWh) as its **DDAP** > or = to its initial **Strike Price** (370 €/MWh).

The **Availability Ratio** of this **DSR CMU** during this **AMT Hours** is calculated for each of its **AMT Hour** as follows: $\text{Min}(1; \text{Available Capacity of the CMU} / (\text{Total Contracted Capacity of the CMU} / \text{Derating Factor of the CMU}))$.

Important: the unavailability of the **CMU** has not been announced before the identification of the **AMT Moments** meaning that this **CMU** will be liable for the **Payback Obligation** although it is not entirely available.

- ⇒ 1st **AMT Hour**: $\text{Min}(1; 14 / (4,5 / 0,3)) = 0,93 < 1$ so the **Availability Ratio** is equal to 0,93 as the minimum value is selected
- ⇒ 2nd **AMT Hour**: $\text{Min}(1; 13 / (4,5 / 0,3)) = 0,86 < 1$ so the **Availability Ratio** is equal to 0,86 as the minimum value is selected
- ⇒ 3rd **AMT Hour**: $\text{Min}(1; 15 / (4,5 / 0,3)) = 1$ so the **Availability Ratio** is equal to 1 as the minimum value is selected



This **CMU** is liable as well for a **Payback Obligation** during these **AMT Hour** for the **Secondary Market Transaction** it realized ex-post outside of its **SLA Hours**. The **Availability Ratio** for that **AMT Hour** is assumed to be equal to 1 as it is the **CMU** who decided to acquire extra **Capacity** on the **Secondary Market**, it is calculated as follows:

$$\Rightarrow \text{Min}(1; (\text{Available Capacity} / \text{Obligated Capacity of the CMU for the targeted period of time}) = \text{Min}(1; (10/10)) = 1$$

As it is the case, this **Payback Obligation** of this **CMU** will be calculated as follows:

The **Declared Day-Ahead Price** (480 €/MWh) exceeds the value of the **Strike Price** (370 €/MWh) and will therefore replace it for the calculation of the **Payback Obligation** as it is a **CMU without a Daily Schedule**. It is also the case for the **Secondary Market Transaction** for which a strike price of 400 €/MWh applies.

⇒ 0€ for all hours in December 2025 excepted for 3 hours :

⇒ 3 hours on 09/12/2025 :

	DSR
5 PM	Primary Transaction : $\text{Max}(0; (530 \text{ €/MWh} - 480 \text{ €/MWh}) * (4,5 \text{ MW} / 0,3) * (0,93)) = 697,5 \text{ €}$
	Secondary Transaction : $\text{Max}(0; (530 \text{ €/MWh} - 480 \text{ €/MWh}) * (10 \text{ MW}) * (1)) = 500 \text{ €}$
6 PM	Primary Transaction : $\text{Max}(0; (500 \text{ €/MWh} - 480 \text{ €/MWh}) * (4,5 \text{ MW} / 0,3) * (0,86)) = 258 \text{ €}$
	Secondary Transaction : $\text{Max}(0; (500 \text{ €/MWh} - 480 \text{ €/MWh}) * (10 \text{ MW}) * (1)) = 200 \text{ €}$
7 PM	Primary Transaction : $\text{Max}(0; (600 \text{ €/MWh} - 480 \text{ €/MWh}) * (4,5 \text{ MW} / 0,3) * (1)) = 1800 \text{ €}$
	Secondary Transaction : $\text{Max}(0; (600 \text{ €/MWh} - 480 \text{ €/MWh}) * (10 \text{ MW}) * (1)) = 1200 \text{ €}$

⇒ Total amount of the **Payback Obligation** : 697,5 € + 500 € + 258 € + 200 € + 1800 € + 1200 € = 4655,5 €



Summary of the main figures for the Payback Obligation determination

Initial Strike Price	Declared Day-Ahead Price (higher than the initial Strike Price)	Strike Price applicable for the Secondary Market Transaction	Number of AMT Hours applicable for the Payback Obligation determination	Availability Ratio	Reference Prices applicable for the Payback Obligation determination	Payback Obligation
370 €/MWh	480 €/MWh	400 €/MWh	3	0,93 for the 1 st AMT Hour; 0,86 for the 2 nd AMT Hour ; 1 for the 3 rd AMT Hour	530 €/MWh; 500 €/MWh; 600 €/MWh	- 4655,5 €

3.7 Final Remuneration - Costs balance

Summary of Remunerations – Costs balance

Initial Capacity Remuneration	Capacity Remuneration received via Secondary Market Capacity	Availability Penalty	Payback Obligation
99.000 €	+ 4.000 €	- 5.333,333 €	- 4.655,5 €



4. Use Case 3: an existing OCGT project with a Nominal Reference Power of 200 MW who decides to partially opt-out

4.1 Prequalification Process

A **CRM Candidate**, owner of an existing OCGT project with one **CMU** with a **Nominal Reference Power** of 200 MW is applying for a 1 year contract in the Y-1 **Auction** for the **Delivery Period** 2026-2027.

Given that this **CMU** is existing (its **Nominal Reference Power** can be measured with a certified metering device) and that it does not have a high level of investment, it does not intend to apply for a multi-year contract and must therefore not send its investment file to CREG. It does neither have to provide an EDS as it is already an existing **CMU** connected to the Belgian network.

Before starting its **Prequalification Process**, this **CRM Candidate** require to commit themselves on the following:

- An endorsement of the **Capacity Contract Framework**;
- Its compliance with the relevant legal and regulatory framework defined in the CRM framework;
- Its respect of the eligibility criteria's set by the Royal Decree for the FPS Economy (cumulative support and minimal participation threshold);

As a second step, the **CRM Candidate** can introduce its prequalification file, consisting in an **Existing Capacity** being an **OCGT** with a declared **Nominal Reference Power** of 200 MW. It decides to partially opt-out: its **Opt-Out Volume** is equal to 20 MW. Its **Reference Power** is therefore equal to 180 MW.

It decides to partially opt-out with an **Opt-Out Volume** equal to 20 MW. As it is doing so in the Y-1 **Auction**, it must indicate whether these 20 MW will contribute or not to adequacy. This **CRM Candidate** indicates that it will not contribute to adequacy and does not notify this opt-out because of a closure or structural **Capacity** reduction. Hence, its **Opt-Out Volume** will be considered out of the market. This OCGT **CRM Candidate** must therefore provide a signed motivation letter to explain further why it decided to opt out as this **Opt-Out Volume** is not due to a temporary or definitive closure notification. This also means that this **CRM Candidate** is allowed to participate to the **Secondary Market** for the **Delivery Period** to which the **Opt-Out Volume** relates.

Its **Reference Power** is equal to its **Nominal Reference Power** minus its **Opt-Out Volume**: $200 \text{ MW} - 20 \text{ MW} = 180 \text{ MW}$. This OCGT project is associated with a **Derating Factor** of 0.85. Its **Eligible Volume** is equal to its **Reference Power** multiplied by its **Derating Factor** = $180 \text{ MW} * 0,85 = 153 \text{ MW}$.

Moreover, this **CRM Candidate** presents also the following specifications:

- ⇒ For each **Delivery Point**, it must provide the following information:
 - The technology of the related **Capacity**;
 - The CO2 emission of the related **Capacity**;



- Its full technical injection **Capacity**;
- Its preferred methodology among the 3 possible options to be used by Elia to control its **Nominal Reference Power**;
- The EAN code of its **Delivery Point**;
- A single line diagram with a specific identification of the exact location of the **DPs/CMUs** of the **Capacity**;
- A valid **Grid User Declaration** as provided in the **Capacity Contract Framework**

⇒ On **CMU** level:

- This **CRM Candidate** had to submit a **Daily Schedule** because of its **Capacity** (independently from its participation to the CRM): this means that it does not have to provide a **Declared Market Price** which could be used as correction for its **Strike Price**;
- A selected **NEMO** : Nordpool Spot market

Given that this **CRM Candidate** is being prequalified as an **Existing Capacity**, Elia will verify its **Nominal Reference Power** during the **Prequalification Process** based on a method of its choice. As it is not the 1st time that this **CRM Candidate** is applying for the CRM and given that its **Nominal Reference Power** had been underestimated in the past it goes for the 3rd method: a new prequalification test. It must therefore provide the following information:

- The list of **Delivery Point(s)** tested;
- The **Nominal Reference Power** target (in MW);
- The test profile including an identification of the quarter hour(s) which shall be used by Elia to calculate this **Nominal Reference Power**.

This power test has to be performed in a maximum of 36 hours and all the costs related to the organization of this test are at the **CRM Candidate's** charge. Elia performs this test and the result is in line with the **Nominal Reference Power** announced initially by the OCGT **CRM Candidate**: 200 MW.

Finally, this OCGT **CMU** must also provide the following information:

- A related project execution plan (respecting identified milestones and key milestones as detailed in the **Capacity Contract Framework**);
- Its required interactions with 3rd parties : DSO, Fluxys, the FPS Economy (for production permit), the CREG (for the investment file), ...

Finally, as part of its prequalification file, the **CRM Candidate** introduces a conditional bank guarantee signed by a recognized financial institution and covering an amount of 20 k€ multiplied by its **Eligible Volume** (153 MW).

It successfully passes the **Prequalification Process**.

As exposed in the disclaimer in the beginning of this document, we will not enter all the details related to the **Prequalification Process** for each type of **CRM Candidate/CMU**. The specific numbers provided can be considered illustrative for the purpose of this exercise. Nevertheless, it is assumed that the **CRM Candidate/CMU** complies with the requirements of the **Prequalification Process** mentioned above. This does not mean, in any case, that other figures are not important in the framework of the life-cycle of the **CRM**.



Summary of the main figures of the Prequalification Process

Nominal Reference Power	Reference Power	Derating Factor	Eligible Volume	CMU with a Daily Schedule	conditional bank guarantee	reference price selected
200 MW	180 MW	0.85	153 MW	NO	153*20.000 = 3.060.000 €	Nordpool Spot market

4.2 Auction Process

This **CMU** applies for a 1-year **Capacity Contract** in the CRM and wants to submit a **Bid** in the **Auction** equal to (30€/KW/year). This **Prequalified CRM Candidate** is subject to the **Intermediate Price Cap** of this **Auction** which has currently been set to a value of 25 €/KW/year, it can therefore not submit a **Bid** having a **Bid Price** higher than 25€/KW/year, it therefore reduces its **Bid**. It submits a **Bid Volume** of 153 MW equivalent to its **Eligible Volume** at a **Bid Price** of 25 €/KW/year. Its **Bid** is submitted and selected by the auction algorithm and it receives a 1-year **Capacity Contract**. The OCGT receives a yearly **Capacity Remuneration** capped to 25.000€/MW/year* 153 MW = 3.825.000 €/year.

Its **Stop-Loss Limit** is equal to its yearly **Capacity Remuneration** of 3.825.000 €/year. As a reminder, this **Stop-Loss Limit** is applicable for the Penalties related to the **Availability Monitoring** and for the **Payback Obligation** apart.

Its **Eligible Volume** becomes a **Contracted Capacity** of 153 MW. Given that it is a **Non-Energy Constrained Prequalified CRM Candidate**, its **Contracted Capacity** is equal to its **Obligated Capacity** of 153 MW. This **Obligated Capacity** is linked to a **Strike Price**, via its **Capacity Contract**, of 430€/MWh.

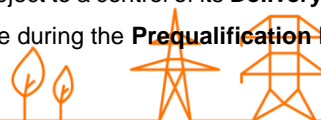
Given that this **CMU** has now received a **Capacity Contract**, it must provide an effective bank guarantee of 153*20.000 € = 3.060.000 €

Summary of the main figures of the Auction process

Contracted Capacity	Obligated Capacity	yearly Capacity Remuneration	Stop-Loss Limit	effective bank guarantee	initial Strike Price	Capacity Contract Duration	Intermediate Price Cap
153 MW	153 MW	153 MW * 25.000 €/MW/year = 3.825.000 €	3.825.000 €	153*20.000 € = 3.060.000 €	430 €/MWh	1 year	25€/kW/year

4.3 Pre-delivery monitoring

According to the pre-delivery monitoring process, this **Capacity Provider** is subject to a control of its **Delivery Point(s)** to check whether its **Reference Power** is in line with the one it claimed to have during the **Prequalification Process**.



The current test on this **Capacity Provider's Reference Power** is in line with the **Reference Power** announced by this **Capacity Provider** during the **Prequalification Process**. This **Capacity Provider** is therefore not subject to any pre-delivery monitoring penalty.

After the pre-delivery monitoring process, its bank guarantee is given back to him. Furthermore, this **CMU** is from that moment on considered as existing and it is allowed to sell/buy **Capacity** on the **Secondary Market**, its respective **Contracted Capacity** will be increased/reduced accordingly.

4.4 Secondary Market

The **Secondary Market Capacity** this **Capacity Provider** is allowed to provide on the **Secondary Market** is equal to the following : $\text{Max}(0; (\text{Nominal Reference Power (CMU,t)} - \text{Total Contracted Capacity (CMU,t)}) - \text{Opt-Out Volume} * \text{Last Published Derating Factor})$ It is calculated as follows: $\text{Max}(0; ((200 \text{ MW} - 153 \text{ MW}) - 20 \text{ MW} * 0,84)) = 30,2 \text{ MW}$.

Given that it still has some **Secondary Market Capacity** left, this OCGT **CMU** is acquiring:

- ⇒ 10 MW for the following period (01/12/2026 - 31/12/2026) from an existing CHP going through a planned outage phase. This **Transaction** requires the transfer to this OCGT project, **Buyer of the Obligation**, of:
 - **The Seller of the Obligation's Capacity Remuneration** for the abovementioned period: its **Capacity Remuneration** was set at 22 €/KW/year. The transfer of the 10 MW for one month will thus generate a transfer of $(10 \text{ MW} * 22.000 \text{ €}) * (31 * 24 / 8760) = 220.000 \text{ €} * 0,08 = 17.600 \text{ €}$
 - **The Seller of the Obligation's Availability Monitoring & Penalties**
 - **The Seller of the Obligation's Strike Price** defined in Y-4 : 380 €/MWh
- ⇒ 10 MW for the following period (01/03/2027 – 15/04/2027) from a new CCGT project due to an unexpected forced outage. This **Transaction** requires the transfer to this OCGT project, **Buyer of the Obligation**, of:
 - **The Seller of the Obligation's Capacity Remuneration** for the abovementioned period: its **Capacity Remuneration** was set at 28 €/KW/year. The transfer of the 10 MW will thus generate a transfer of $(10 \text{ MW} * 28.000 \text{ €}) * (45 * 24 + 23 / 8760) = 280.000 \text{ €} * 0,126 = 35.280 \text{ €}$
 - **The Seller of the Obligation's Availability Monitoring & Penalties**
 - **The Seller of the Obligation's Strike Price** defined in Y-4 : 380 €/MWh

After **Secondary Market Transactions**, This OCGT **CMU** presents the following update features:

- ⇒ **Total Contracted Capacity**: 153 MW + 10 MW = 163 MW during the period (01/12/2026 - 31/12/2026)
- ⇒ **Total Contracted Capacity**: 153 MW between 01/01/2027 and 28/02/2027
- ⇒ **Total Contracted Capacity**: 153 MW + 10 MW = 163 MW during the period (01/03/2027 – 15/04/2027)
- ⇒ updated **Obligated Capacity**: 153 MW + 10 MW = 163 MW during the period (01/12/2026 - 31/12/2026)
- ⇒ updated **Obligated Capacity**: 153 MW between 01/01/2027 and 28/02/2027
- ⇒ updated **Obligated Capacity**: 153 MW + 10 MW = 163 MW during the period (01/03/2027 – 15/04/2027)



Summary of the main figures related to the Secondary Market

Secondary Market Capacity	Partial Outage	Total Contracted Capacity	updated Obligated Capacity	Capacity Remuneration received via the Secondary Market	Strike Price applicable for the Secondary Market
30,2 MW	0 MW	163 MW during the period (01/12/2026 - 31/12/2026) ; 153 MW between 01/01/2027 and 28/02/2027 ; 153 MW during the period (01/03/2027 – 15/04/2027)	163 MW during the period (01/12/2026 - 31/12/2026) ; 153 MW between 01/01/2027 and 28/02/2027 ; 163 MW during the period (01/03/2027 – 15/04/2027)	+17.600 € + 35.280€ = + 52.880 €	380 €/MWh

4.5 Availability Monitoring and Penalties

The result of the **Availability Monitoring** process shows during a test on the 2nd of December 2026 a lower **Available Capacity** than its **Obligated Capacity**. This **CMU** becomes liable for the 10MW **Missing Capacity** during 3 **AMT Hours** (=30 MW).

Availability Penalty of the **CMU**: $((163 \text{ MW} - 153 \text{ MW})(1 + X)) * \text{yearly contract value (per MW (= 25.000 € / MW))} / ((15 (= \text{UP}) * 3)$

X, the **Unavailability factor**, being equal to 1 as we are in a situation of Unannounced Availability.

$$\Rightarrow ((1+1)*(10+10+10) * 25.000 \text{ €})/45= 33.333,33 \text{ € as it is applied to the 3 AMT Hours.}$$

As a reminder, **Availability Penalties** are subject to a monthly cap in order to keep incentives for CMUs to remain in the CRM even after some **Availability Penalties**.

$$\Rightarrow \text{The Availability Penalty monthly cap is equal to 20 \% of the Yearly Capacity Remuneration: } 0,2 * 3.825.000 \text{ €} \\ \text{€} = 765.000 \text{ €}$$

The **Availability Penalty monthly cap** is thus not reached by the **Availability Penalty** due by the OCGT CMU.



Summary of the main figures for the Availability Monitoring and Penalties

Available Capacity	Missing Capacity	UP	Number of AMT Hours applicable for Availability Penalties	Unavailability Factor (X) applicable	Availability Penalties	Availability Penalties monthly cap	updated Obligated Capacity
153 MW	10 MW per AMT Hour	15	3	1	- 33.333,33 €	765.000 €	163 MW during the period (01/12/2026 - 31/12/2026) ; 153 MW between 01/01/2027 and 28/02/2027 ; 163 MW during the period (01/03/2027 – 15/04/2027)

4.6 Payback Obligation

The **Payback Obligation** is applicable for 2 hours in December 2026: the first from 7 AM to 8 AM and the second from 7 PM to 8 PM the 23/12/2026. These 2 **AMT hours** are liable to a **Payback Obligation**. Indeed, the prices observed for these 2 hours on the Nordpool SPOT Market exceeded the **Strike Price** applicable to this **CMU**. The reference prices observed from the Nordpool SPOT market are the following (460 €/MWh and 390 €/MWh).

Given that this **CMU** is a **CMU** with a **Daily Schedule**, it has to apply the **Strike Price** initially set for its **Capacity Contract** and the one it received via the **Secondary Market**.

The **Availability Ratio** of this OCGT **CMU** is calculated for both hours as follows: $\text{Min}(1; \text{Available Capacity of the CMU} / (\text{Total Contracted Capacity of the CMU}))$. The unavailability of the **CMU** has not been announced before the identification of the **AMT Moments** meaning that this **CMU** will be liable for the **Payback Obligation** although it is not entirely available.

- ⇒ 1st hour: $\text{Min}(1; 153/163) = 0,94 < 1$ so the **Availability Ratio** is equal to 0,94 as the minimum value is selected
- ⇒ 2nd hour: $\text{Min}(1; 153/163) = 0,94 < 1$ so the **Availability Ratio** is equal to 0,94 as the minimum value is selected

Important: the unavailability of the **CMU** has not been announced before the identification of the **AMT Moments** meaning that this **CMU** will be liable for the **Payback Obligation** although it is not entirely available.



The **Payback Obligation** of this **CMU** is calculated:

- ⇒ 0€ for all hours in December 2026 excepted for 2 hours :
- ⇒ 2 hours on 23/12/2026 :

	OCGT
7 AM	<p>Primary Transaction : Max (0;(460 €/MWh – 430€/MWh)*(153)*(0,94) = 4314,6 €</p> <p>Secondary Transaction : Max (0;(460 €/MWh – 380€/MWh)*(10)*(0,94) = 752 €</p>
7 PM	<p>Primary Transaction : This CMU is not liable to a Payback Obligation on the Primary Market as the reference price observed on the Nordpool Spot Market < Strike Price applicable to the Secondary Market.</p> <p>Secondary Transaction : Max (0;(390 €/MWh – 380€/MWh)*(10)*(0,94) = 94 €</p>

⇒ Total amount of the **Payback Obligation** : - 5160,6 €

Summary of the main figures for the Payback Obligation determination

initial Strike Price	Strike Price applicable to Secondary Market	Number of AMT Hours applicable for the Payback Obligation	Reference prices applicable for the Payback Obligation	Availability Ratio	Payback Obligation
430 €/MWh	380 €/MWh	2	460 €/MWh; 390 €/MWh	0,94 for both AMT Hours	- 5160,6 €

4.7 Final Remuneration - Costs balance

Summary of Remunerations – Costs balance

Initial Capacity Remuneration	Penalty for delay of the CMU in the pre-delivery monitoring	Secondary Market Capacity Remuneration received	Availability Monitoring Penalty	Payback Obligation
3.825.000 €	0 €	+ 52.880 €	- 33.333,33 €	- 5160,6 €



5. Use Case 4: A Capacity Provider with several Energy-Constrained assets

5.1 Prequalification Process

A **CRM Candidate** with a potential location is investigating to construct a new **Capacity** in the context of the Belgian CRM. This **CRM Candidate** is planning to build a new project composed of 4 **Delivery Points** (hereafter **DPs**) which are all **Energy-Constrained**. Given its limited degree of investments, this **CMU** cannot apply for a multi-years contract for the CRM and does not send an investment file to CREG.

Furthermore, some **Capacities** are subject to a positive technical agreement according to the connection process detailed in the Federal Grid Code.

This **CMU** is composed of several **DPs**.

- **DP 1:** An existing battery, which declares to have a **Nominal Reference Power** of 20 MW.
- **DP 2:** An additional **DSR**, which declares to have a **Nominal Reference Power** of 10 MW.
- **DP 3:** An additional **DSR**, which declares to have a **Nominal Reference Power** of 15 MW.
- **DP 4:** An additional diesel generator which declares to have a **Nominal Reference Power** of 15 MW.

Given that this **Nominal Reference Power** of these **DPs** is declared and cannot be measured based on a certified metering device, the **CMU** is additional and the **CRM Candidate** shall provide a project execution plan as exposed in the Market Rules. Its **Nominal Reference Power** shall be verified by Elia through the pre-delivery monitoring

As exposed above, the **CRM Candidate** participant will need a technical agreement from Elia, indicating that its **Capacity** can be connected to the Elia grid (and the price to do so).

Before starting its **Prequalification Process**, this **CRM Candidate** require to commit themselves on the following:

- An endorsement of the **Capacity Contract Framework**;
- Its compliance with the relevant legal and regulatory framework defined in the CRM framework;
- Its respect of the eligibility criteria's set by the Royal Decree for the FPS Economy (cumulative support and minimal participation threshold);

As a second step, the **CRM Candidate** can introduce its prequalification file, consisting in an **Additional Capacity** with a declared **Nominal Reference Power** of 60 MW. It decides to partially opt-out: its **Opt-Out Volume** is equal to 10 MW. Its **Reference Power** is therefore equal to its **Nominal Reference Power**: 50 MW.

Moreover, the **CRM Candidate** presents also the following specifications:

- ⇒ For each **Delivery Point**, it must provide the following information:
 - The technology of the related **Capacity**;
 - The CO₂ emission of the related **Capacity**;
 - Its full technical offtake **Capacity** (for the **DSRs**);
 - Its **Unsheddable Margin** (for the **DSRs**);



- Its full technical injection **Capacity** (for the storage and the generator);
 - A single line diagram with a specific identification of the exact location of the **DPs/CMUs**;
 - A valid **Grid User Declaration** as provided in the **Capacity Contract Framework**;
 - A **DSO-CRM Candidate** agreement
- ⇒ On **CMU** level (as a whole):
- A **Declared Market Price** which could be used as correction for its **Strike Price** (see **Auction Process** below);
 - A selected **NEMO** : Day-Ahead EPEX Spot Market;

Finally, this **CRM Candidate** must also provide the following information:

- A related project execution plan (respecting identified milestones and key milestones as detailed in the Capacity Contract Framework);
- Its **SLA** and associated **Derating Factor**;
- (Partial) **Declared Prices** associated to the **Day-Ahead, Intraday** and **Balancing Markets**.
- Its required interactions with 3rd parties : DSO, Fluxys, the FPS Economy (production permit), the CREG (investment file), ...

This **Capacity Provider** decides to partially opt out for a volume of 10 MW equal to its **Opt-Out Volume**. This decision to partially opt-out for the **CMU** comes from the fact that it is composed of 4 different **DP's** and that it has doubts about its ability to fulfill its **Capacity Contract** obligations at all time as several of its **DP's** are new. As it is opting-out in the Y-4 **Auction**, it must not indicate whether these 10 MW will contribute or not to adequacy, it must only indicate whether this opt-out is associated to a closure notification or not. This **Opt-Out Volume** is not associated to a temporary notification for closure or a structural reduction of **Capacity**. It means that the required CRM volume contracted in Y-4 will be reduced as follows: **Opt-Out Volume*Last Published Derating Factor**.

This **CMU** has therefore a **Reference Power** equal to its **Nominal Reference Power** – its **Opt-Out Volume** = 60 MW – 10 MW = 50 MW. This **CMU** chooses a SLA of 4 hours which is associated to a **Derating Factor** of 0,3. Its **Eligible Volume** is therefore equal to 0,3*50 MW = 15 MW.

As part of its prequalification file, the **CRM Candidate** introduces a conditional bank guarantee signed by a recognized financial institution and covering an amount of 20 k€ multiplied by its **Eligible Volume** (15 MW).

As mentioned above, the **DSR DPs** are allowed provide, as part of the **Prequalification Process**, their **Unsheddable Margin**. This **Unsheddable Margin** is considered apart from their declared **Nominal Reference Power**. In other words, it means that the **Unsheddable Margin** of these 2 **DPs** do not impact their declared **Nominal Reference Power**. The installed capacity of these **CMUs** is therefore equal to their **Nominal Reference Power** majored by their **Unsheddable Margin**.



Summary of the main figures of the Prequalification Process

Parameters	DP 1	DP 2	DP 3	DP 4
Nominal Reference Power	20 MW	10 MW	15 MW	15 MW
Unsheddable Margin	\	6 MW	5 MW	\
installed capacity	20 MW	16 MW	20 MW	15 MW

As exposed in the disclaimer in the beginning of this document, we will not enter all the details related to the **Prequalification Process** for each type of **CRM Candidate/DP/CMU**. The specific numbers provided can be considered as illustrative for the purpose of this exercise. Nevertheless, it is assumed that the **CRM Candidate/DPs/CMUs** comply with the requirements of the **Prequalification Process** mentioned above. This does not mean, in any case, that other figures are not important in the framework of the life-cycle of the CRM.

This **CMU** presents the following characteristics:

Total Nominal Reference Power	Total Opt-Out Volume	Total Reference Power	SLA Hours	Derating Factor applicable to the entire pool	Eligible Volume	conditional bank guarantee	CMU with a Daily Schedule	reference price
60 MW	10 MW	50 MW	4 hours	0,3	15 MW	15MW*20.000€/MW = 300.000 €	NO	EPEX Spot Market

5.2 Auction Process

This **Prequalified CRM Candidate** can only submit a **Bid** for a 1 year **Capacity Contract**. It is applying for a 1-year contract in the **Y-4 Auction** and it is therefore subject to the **Intermediate Price Cap** which was set at 20€/kW/year for this **Auction**. It submits a **Bid** for a **Bid Volume** of 15 MW equivalent to its **Eligible Volume** at a **Bid Price** of 18 €/KW/year. The **Bid** of this **Prequalified CRM Candidate** complies with the **Bids** requirements of the CRM and is approved and selected by the auction algorithm. This **Prequalified CRM Candidate** is granted a 1 year **Capacity Contract**. Its **Contracted Capacity** is equal to its **Eligible Volume**: 15 MW.

- ⇒ Its **Obligated Capacity** shall be equal to 50 MW during its **SLA Hours**.
- ⇒ Its yearly **Capacity Remuneration** is equal to 15MW*18.000 €/MW = 270.000 €
- ⇒ Its **Stop-Loss Limit** is equal to its yearly **Capacity Remuneration**: 270.000 €.

It is important to keep in mind that a **Stop-Loss Limit** is applicable for both the **Availability Monitoring** & the **Payback Obligation** processes apart.

Given that this **Capacity Provider** is a **CRM Candidate** without a **Daily Schedule**, it is obliged to communicate at least one **Declared Day-Ahead Price** and allowed to declare other **(Partial) Declared Market Prices** on the **Day-Ahead**,



Intraday and Balancing Markets which will be used in case the reference price in the EPEX Sport market > initial **Strike Price** being equal to 410 €/MWh.

Summary of the main figures for the Auction process

Contracted Capacity	Obligated Capacity	yearly Capacity Remuneration	Secondary Market Capacity
15 MW	50 MW during its SLA Hours	15*18.000 € = 270.000 €	For all SLA Hours ex-ante: 0 MW For one or more SLA hours in ex-post: 0MW / during non- SLA Hours : 60 MW

Capacity Contract Duration	Initial Strike Price	effective bank guarantee
1 year	410 €/MWh	15*20.000 € = 300.000 €

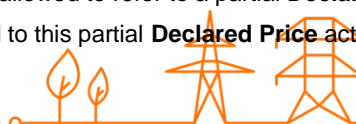
Declared Day-Ahead Price	Declared Intraday Price	Declared Balancing Price
450 €/MWh	550 €/MWh	600 €/MWh

Partial 1 Declared Day-Ahead Price	Partial 1 Declared Intraday Price	Partial 1 Declared Balancing Price
430 €/MWh for 10 MW	530 €/MWh for 12 MW	570 €/MWh for 14 MW

Partial 2 Declared Day-Ahead Price	Partial 2 Declared Intraday Price	Partial 2 Declared Balancing Price
380 €/MWh for 8 MW	490 €/MWh for 10 MW	525 €/MWh for 11 MW

As a reminder, this **CMU** is a **CMU without a Daily Schedule**. It means that it must, at least, declare during its **Prequalification Process**, a **Declared Price** for the **Day-Ahead Market**. It can also declare an **Intraday** and a **Balancing Price**. The **Declared Price** to be selected, should be the **Declared Day-Ahead Price** if the reference price observed on the market is equal or higher to this **Declared Day-Ahead Price**. In case, the **Declared Day-Ahead Price** is not reached or equal to the reference price, the **CMU** can refer either to the **Declared Intraday** or **Balancing Prices**. If one of the **Declared Prices** is reached on the relevant market, the volume activated will be equal to the **Nominal Reference Power** of the **CMU**.

In case the **Declared Price** is not met on the associated market, a **CMU** is allowed to refer to a partial **Declared Price** on the associated market which will be equivalent to a partial volume linked to this partial **Declared Price** activated on



this market. Again here, the selected volume should be the volume linked to the **Declared Day-Ahead Price** and if this **Declared Day-Ahead Price** is not equal or higher than the observed reference price, the selection will be based on the highest volume activation associated to the relevant market & associated **Declared Price** for this market. Even though only one of these (partial) **Declared Prices** is exceeded on the associated market, the volume linked to this market will be activated.

5.3 Pre-delivery monitoring

After the **Prequalification** and the **Auction Processes**, the **Capacity Provider** must comply with the figures announced for the pre-delivery monitoring phase. It must also provide to Elia a quarterly monitoring report in which the status of its project's evolution is given, at least for each milestone of its **Capacity Contract Framework**. Still, during its pre-delivery monitoring, this **Capacity Provider** happens to show an **Available Capacity** (48 MW) lower than its **Obligated Capacity** during its **SLA Hours** (50 MW). This schedule deviation, compared to the initial project plan it submitted to Elia during the **Prequalification Process**, is at that moment smaller than a month and requires therefore that the **Capacity Provider** provides to Elia a mitigation plan. It has 2 solutions to solve this issue and avoid paying a financial penalty equal to 33% of its bank guarantee:

- 1) It can reshuffle its pool in order to be able to fulfill its obligations.
- 2) It can seek on the **Secondary Market** for **Capacity** to be able to fulfill its obligations.

The **Capacity Provider** decides to seek for a solution on the **Secondary Market**. In order to respect its **Contracted Capacity**, it must sell a part of its **Contracted Capacity**. It decides to sell 3 MW of its **Contracted Capacity** on the **Secondary Market** for the entire **Delivery Period** meaning that its **Contracted Capacity** is reduced from 15 MW to 12 MW whereas its **Obligated Capacity** is reduced to the following: $50 \text{ MW} - (3 \text{ MW}/0,3) = 50 \text{ MW} - 10 \text{ MW} = 40 \text{ MW}$. Another **Capacity Provider** is willing to buy these 3 MW for that **Delivery Period** and receives therefore its **Capacity Remuneration** (18€/KW/year) and its related **Strike Price** (410 €/MWh).

It is important to insist on the fact that selling a part of its **Contracted Capacity** (as above) is equal to reduce its **Contracted Capacity** by the amount of the part of the obligation sold on the **Secondary Market**, therefore the **Obligated Capacity** of the **CMU** selling some **Capacity** on the **Secondary Market** follows its **Contracted Capacity** which means that its **Obligated Capacity** is reduced as well. Therefore, it transfers a part of its **Capacity Remuneration** in function of the **Capacity** sold on the **Secondary Market**.

The **Capacity Remuneration** foreseen is transferred to this **Capacity Provider** and is equal to: $18.000 \text{ €} \times 3 \text{ MW} = 54.000 \text{ €}$.

By doing so, it is able to show an **Available Capacity** (48 MW) superior to its updated **Obligated Capacity** (40 MW): indeed selling a part of its **Contracted Capacity** on the **Secondary Market** reduces its **Contracted Capacity**. It must not pay a financial penalty anymore.



After the pre-delivery monitoring process, this **CMU** receives its bank guarantee back and becomes an **Existing Capacity**. Moreover, it is now allowed to contract (and sell) **Additional Capacity** on the **Secondary Market** (when it is ready), its **Contracted Capacity** would therefore be increased/decreased accordingly.

Summary of the main figures for the pre-delivery monitoring process

Available Capacity	Obligated Capacity	delayed Volume	Contracted Capacity	Total Contracted Capacity	updated Obligated Capacity
48 MW	$(15 \text{ MW}/0,3) = 50$ MW during its SLA Hours	2 MW	15 MW	12 MW	40 MW during its SLA Hours

5.4 Secondary Market

The **Secondary Market Capacity** this **CMU** is able to offer on the **Secondary Market** in ex-ante is the following:

- ⇒ During all its **SLA Hours**: $\text{Max}(0; \text{Nominal Reference Power of the CMU, } t - (\text{Total Contracted Capacity of the CMU, } t / \text{Derating Factor of the CMU, } t) - \text{Opt-Out Volume of the CMU, } t) * \text{Last Published Derating Factor of the CMU, } t)$: $(60 \text{ MW} - (12 \text{ MW}/0,3) - 10 \text{ MW}) * 0,32 = (60 \text{ MW} - 40 \text{ MW} - 10 \text{ MW}) * 0,32 = 3,2 \text{ MW}$

The **Secondary Market Capacity** this **CMU** is able to offer on the **Secondary Market** in ex-post is the following:

- ⇒ During its non-**SLA Hours**: $\text{Max}(0; \text{Nominal Reference Power of the CMU} - \text{Total Contracted Capacity of the CMU})$: $60 \text{ MW} - 0 \text{ MW} = 60 \text{ MW}$

This **CMU** decides not to acquire additional **Secondary Market Capacity** ex-ante nor ex-post outside of its **SLA-Hours** on the **Secondary Market**.

Summary of the main figures for the Secondary Market

Forced Outage	Total Contracted Capacity	Strike Price applicable for the Secondary Market	Obligated Capacity	Capacity Remuneration transferred via the Secondary Market
0 MW	12 MW	500 €/MWh	40 MW during its SLA Hours	54.000 € (during the pre-delivery monitoring)

5.5 Availability Obligations and Penalties + Payback Obligation

For this use case, the **Availability Monitoring & Penalties** are considered with the determination of the **Payback Obligation** as these 2 are directly linked given that the considered **CMU** is a **CMU** without a **Daily Schedule**.



During the **Delivery Period** 2026-2027, an **Availability Monitoring** for 4 **AMT Hours** during 2 different **AMT Moments** of 2 hours each (where the **CMU** is monitored as any other) :

- ⇒ During the 22nd of December 2025 from 6 PM to 8 PM
- ⇒ During the 13th of January 2026, from 6 PM to 8 PM

The applicable reference prices on the EPEX SPOT Market are respectively the following during these **AMT Hours**: (550 €/MWh;470 €/MWh;440€/MWh;420 €/MWh).

As a reminder, this **CMU** is a **CMU without a Daily Schedule**. It means that it declared during its **Prequalification Process**, a **Declared Price** for the **Day-Ahead Market** and also declare an **Intraday** and a **Balancing Price**. The **Declared Price** will be selected first if the reference price on the EPEX SPOT exceeds it. In case, the **Declared Day-Ahead Price** is not reached, it can refer either to the **Declared Intraday** or **Balancing Prices**. If one of the **Declared Prices** is reached on the relevant market, the volume activated will be equal to the **Nominal Reference Power** of the **CMU**.

In case the **Declared Price** is not met on this relevant market, a **CMU** is allowed to refer to a partial **Declared Price** on the associated market which will be linked to a partial volume associated to this partial **Declared Price** activated on this market. Again here, the selected volume should be the volume linked to the **Declared Day-Ahead Price** and if not reached, the selection will be based on the highest volume activation associated to the relevant market & **Declared Price** for this market. Even though only one of these (partial) **Declared Prices** is exceeded on this associated market, the volume linked to this market will be activated.

Declared Day-Ahead Price	Declared Intraday Price	Declared Balancing Price
450 €/MWh	550 €/MWh	600 €/MWh

Partial 1 Declared Day-Ahead Price	Partial 1 Declared Intraday Price	Partial 1 Declared Balancing Price
430 €/MWh for 10 MW	530 €/MWh for 12 MW	570 €/MWh for 14 MW

Partial 2 Declared Day-Ahead Price	Partial 2 Declared Intraday Price	Partial 2 Declared Balancing Price
380 €/MWh for 8 MW	490 €/MWh for 10 MW	525 €/MWh for 11 MW

Having these numbers in mind, the following parameters must be determined within this section, as we are dealing with a **CMU** without a **Daily Schedule** composed of various **DPs**:



- 1) 22nd of December 2025 6 PM – 7 PM (reference price: 550 €/MWh > **Declared Day-Ahead Price:** 450 €/MWh > **Strike Price:** 410 €/MWh)

DP	DP1 (injection)	DP2 (offtake)	DP3 (offtake)	DP4 (injection)
P measured applicable per DP	15 MW	8 MW	10 MW	14 MW
P baseline	\	14 MW	15 MW	\
Unsheddable Margin	\	6 MW	5 MW	\
Volume required (Vreq) applicable for the whole CMU	60 MW (= Nominal Reference Power)			
Proven Availability (Vact) applicable per DP	15 MW	6 MW	5 MW	14 MW
Unproven Availability (Vpas) applicable per DP	5 MW	2 MW	5 MW	1 MW
Available Capacity (AC) applicable for the whole CMU	MIN(40 MW;60 MW) + MIN(13 MW;0 MW) = 40 MW			
Obligated Capacity (OC) applicable for the whole CMU	12/0,3 = 40 MW			
Missing Capacity (MC) applicable for the whole CMU	0 MW			

- 2) 22nd of December 2025 7 PM – 8 PM reference price: 470 €/MWh > **Declared Day-Ahead Price:** 450 €/MWh > **Strike Price:** 410 €/MWh)

DP	DP1 (injection)	DP2 (offtake)	DP3 (offtake)	DP4 (injection)
P measured applicable per DP	16 MW	9 MW	6 MW	11 MW
P baseline	\	15 MW	11 MW	\
Unsheddable Margin	\	6 MW	5 MW	\
Volume required (Vreq) applicable for the whole CMU	60 MW (= Nominal Reference Power)			



Proven Availability (Vact) applicable per DP	16 MW	6 MW	5 MW	11 MW
Unproven Availability (Vpas) applicable per DP	4 MW	3 MW	1 MW	4 MW
Available Capacity (AC) applicable for the whole CMU	$\text{MIN}(38 \text{ MW}; 60 \text{ MW}) + \text{MIN}(12 \text{ MW}; 0 \text{ MW}) = 38 \text{ MW} + 0 \text{ MW} = 38 \text{ MW}$			
Obligated Capacity (OC) applicable for the whole CMU	$12/0,3 = 40 \text{ MW}$			
Missing Capacity (MC) applicable for the whole CMU	2 MW			

- 3) The 13th of January 2026 6 PM – 7 PM (**Strike Price:** 410 €/MWh < reference price: 440 €/MWh < **Declared Day-Ahead Price:** 450 €/MWh)

The market prices per quarter for the 2nd hour are the following:

- ⇒ Quarter hour 1: ID = (500 €/MWh) / POS = (560 €/MWh)
- ⇒ Quarter hour 2: ID = (550 €/MWh) / POS = (590 €/MWh)
- ⇒ Quarter hour 3: ID = (550 €/MWh) / POS = (600 €/MWh)
- ⇒ Quarter hour 4: ID = (450 €/MWh) / POS = (450 €/MWh)

Moreover, this CMU contracted the following volumes in Ancillary Services (hereafter AS) :

- 2 MW in R1 (DP 1)
- 2 MW in R2 (DP 3)
- 5 MW in R3 (DP 1), activated

DP	DP1 (injection)	DP2 (offtake)	DP3 (offtake)	DP 4 (injection)
P measured applicable per DP	9 MW	8 MW	9 MW	6 MW
P baseline	\	14 MW	14 MW	\
Unsheddable Margin	\	6 MW	5 MW	\
Volume required (Vreq) applicable for the whole CMU	32,75 MW			



Proven Availability (Vact) applicable per DP	9 MW + 2 MW + 5 MW - 5 MW = 11 MW	6 MW + 0 MW - 0 MW = 6 MW	5 MW + 2 MW - 0 MW = 7 MW	6 MW + 0 MW - 0 MW = 6 MW
Unproven Availability (Vpas) applicable per DP	11 MW + 5 MW = 16 MW	2 MW + 0 MW = 2 MW	4 MW + 0 MW = 4 MW	9 MW + 0 MW = 9 MW
Available Capacity (AC) applicable for the whole CMU	MIN(32,75 MW ; 30 MW) + MIN(27,25 MW;31 MW) = 30 MW + 27,25 MW = 57,25 MW			
Obligated Capacity (OC) applicable for the whole CMU	12/0,3 = 40 MW			
Missing Capacity (MC) applicable for the whole CMU	0 MW			

- 4) 13th of January 2026 7 PM – 8 PM (**Strike Price:** 410 €/MWh < reference price: 420 €/MWh < **Declared Day-Ahead Price:** 450 €/MWh < **Declared Intraday Price:** 550 €/MWh < **Declared Balancing Price:** 600 €/MWh).

Reminder:

Declared Day-Ahead Price	Declared Intraday Price	Declared Balancing Price
450 €/MWh	550 €/MWh	600 €/MWh

Partial 1 Declared Day-Ahead Price	Partial 1 Declared Intraday Price	Partial 1 Declared Balancing Price
430 €/MWh for 10 MW	530 €/MWh for 12 MW	570 €/MWh for 14 MW

Partial 2 Declared Day-Ahead Price	Partial 2 Declared Intraday Price	Partial 2 Declared Balancing Price
380 €/MWh for 8 MW	490 €/MWh for 10 MW	525 €/MWh for 11 MW

The market prices per quarter for the 4th hour are the following:

- ⇒ Quarter hour 1: ID = (500 €/MWh) / POS = (570 €/MWh)
- ⇒ Quarter hour 2: ID = (480 €/MWh) / POS = (510 €/MWh)
- ⇒ Quarter hour 3: ID = (550 €/MWh) / POS = (700 €/MWh)
- ⇒ Quarter hour 4: ID = (530 €/MWh) / POS = (550€/MWh)

Moreover, this **CMU** contracted the following volumes in Ancillary Services (hereafter AS):

- 4 MW in R1 (DP 2)
- 2 MW in R2 (DP 2),



- 6 MW in R3 (DP 1), activated
- 3 MW in R2 (DP 4)

DP	DP1 (injection)	DP2 (offtake)	DP3 (offtake)	DP4 (injection)
P measured applicable per DP	12 MW	6 MW	8 MW	12 MW
P baseline	\	12 MW	13 MW	\
Unsheddable Margin	\	6 MW	5 MW	\
Volume required (Vreq) applicable for the whole CMU	21,5 MW			
Proven Availability (Vact) applicable per DP	12 MW + 6 MW – 6 MW = 12 MW	6 MW + 4 MW + 2 MW – 0 MW = 12 MW	5 MW + 0 MW – 0 MW = 5 MW	12 MW + 3 MW – 0 MW = 15 MW
Unproven Availability (Vpas) applicable per DP	8 MW + 6 MW = 14 MW	0 MW + 0 MW = 0 MW	3 MW + 0 MW = 3 MW	3 MW + 0 MW = 3 MW
Available Capacity (AC) applicable for the whole CMU	MIN (21,5 MW;44 MW) + MIN(20 MW;38,5 MW) = 41,5 MW			
Obligated Capacity (OC) applicable for the whole CMU	12/0,3 = 40 MW			
Missing Capacity (MC) applicable for the whole CMU	0 MW			

According to the monitoring, this CMU is liable to **Availability Penalties** for the following **AMT Hour(s)** and associated **Missing Capacities**:

- ⇒ 22nd of December 2025 6 PM – 7 PM : **Availability Penalty** of the **CMU**: there is no **Availability Penalty** for this **AMT Hour** as the **Available Capacity** of this **CMU** is equal to its **Obligated Capacity**.
- ⇒ 22nd of December 2025 7 PM – 8 PM : **Availability Penalty** of the **CMU**: $((40 \text{ MW} - 38 \text{ MW})(1 + X)) \cdot \text{yearly contract value (per MW (= 32.000 € / MW))} / (15 \cdot 2) (= \text{UP}) = (2) \cdot (1+1) \cdot (32.000) / 30 = 4.266,67 \text{ €}$
- ⇒ 13th of January 2026 6 PM – 7 PM : there is no **Availability Penalty** for this **AMT Hour** as the **Available Capacity** of this **CMU** is higher than its **Obligated Capacity**.
- ⇒ 13th of January 2026 7 PM – 8 PM : **Availability Penalty** of the **CMU**: there is no **Availability Penalty** for this **AMT Hour** as the **Available Capacity** of this **CMU** is higher than its **Obligated Capacity**.



X, the **Unavailability factor**, being equal to 1 as we are in a situation of Unannounced Availability.

As a reminder, **Availability Penalties** are subject to a monthly cap in order to keep incentives for **CMUs** to remain in the CRM even after some **Availability Penalties**.

- ⇒ The Availability Penalty monthly cap applicable both to December 2025 and January 2026 is equal to 20 % of the Yearly Capacity Remuneration: $0,2 \cdot 480.000 \text{ €} = 96.000 \text{ €}$

The **Availability Penalty monthly cap** is thus not reached by the **Availability Penalty** due by the **Capacity Provider**.

Summary of the main figures for the Availability Monitoring and Penalties

Obligated Capacity	Available Capacity	Missing Capacity	UP	Availability Penalties	Availability Penalties monthly cap	Number of AMT Hours applicable for Availability Penalties	Unavailability Factor (X) applicable
50 MW during SLA Hours	40 MW; 38 MW; 57,25 MW; 41,5 MW	2 MW	15	4.266,67	96.000 € for December and January	2 blocks of 2 hours	1

Given that this **CMU** is a **CMU** without a **Daily Schedule**, it is allowed to apply to use its **Declared Price** rather than the applicable **Strike Price** initially set for its **Capacity Contract** (or **Secondary Market Transaction**).

The **Availability ratio** of this **CMU** is calculated for both hours as follows: $\text{Min}(1; \text{Available Capacity of the CMU in } t) / ((\text{Total Contracted Capacity of the CMU in } t) / (\text{Derating Factor of the CMU in } t))$

Important: the unavailability of the **CMU** has not been announced before the identification of the **AMT Moments** meaning that this **CMU** will be liable for the **Payback Obligation** although it is not entirely available.

- ⇒ 1st hour: $\text{Min}(1; 40/40) = 1$ so the **Availability Ratio** is equal to 1 as the minimum value is selected
- ⇒ 2nd hour: $\text{Min}(1; 38/40) = 0,95 < 1$ so the **Availability Ratio** is equal to 0,95 as the minimum value is selected
- ⇒ 3rd hour: $\text{Min}(1; 57,25/40) = 1,14 > 1$ so the **Availability Ratio** is equal to 1 as the minimum value is selected
- ⇒ 4th hour: $\text{Min}(1; 41,5/40) = 1$ so the **Availability Ratio** is equal to 0,83 as the minimum value is selected

The unavailability of the **CMU** has not been announced before the identification of the **AMT Moments** meaning that this **CMU** will be liable for the **Payback Obligation** although it is not entirely available.



The **Payback Obligation** of this **Capacity Provider** for the following **AMT Hours** is calculated as follows:

	CMU
6 PM - 22 nd of December 2025	<p>Primary Transaction : $\text{Max}(0; (550 \text{ €} - 450 \text{ €}) * (12/0,3) * 1) = 100 * 40 * 1 = 4.000 \text{ €}$</p> <p>Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation</p>
7 PM - 22 nd of December 2025	<p>Primary Transaction : $\text{Max}(0; (470 \text{ €} - 450 \text{ €}) * (12/0,3) * 0,95) = 20 * 40 * 0,95 = 760 \text{ €}$</p> <p>Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation</p>
6 PM – 13 th of January 2026	<p>Primary Transaction: No Payback Obligation here as the maximum between the Strike Price and the Declared Price is selected. Given that the Declared Price is not surpassed by the reference price, there is no Payback Obligation.</p> <p>Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation</p>
7 PM - 13 th of January 2026	<p>Primary Transaction: No Payback Obligation here as the maximum between the Strike Price and the Declared Price is selected. Given that the Declared Price is not surpassed by the reference price, there is no Payback Obligation.</p> <p>Secondary Transaction : This CMU did not acquire Capacity on the Secondary Market so it has no related Payback Obligation</p>

5.6 Final Balance Remunerations – Costs

Summary of Remunerations – Costs balance

initial Capacity Remuneration	Penalty for delay of the CMU in the pre-delivery monitoring	Secondary Market Capacity Remuneration transferred	Availability Monitoring Penalty	Payback Obligation
+ 270.000 €	0 €	- 54.000 €	- 4.266,67 €	- 4.760 €

