

# Auction use case 4

*Revision 1*

New Project with two possible configurations



# DISCLAIMER

This document provides different fictive examples, so-called use cases, related to the Capacity Remuneration Mechanism being developed in Belgium. It has, as sole purpose, to explain the Functioning Rules and its annexes by means of examples.

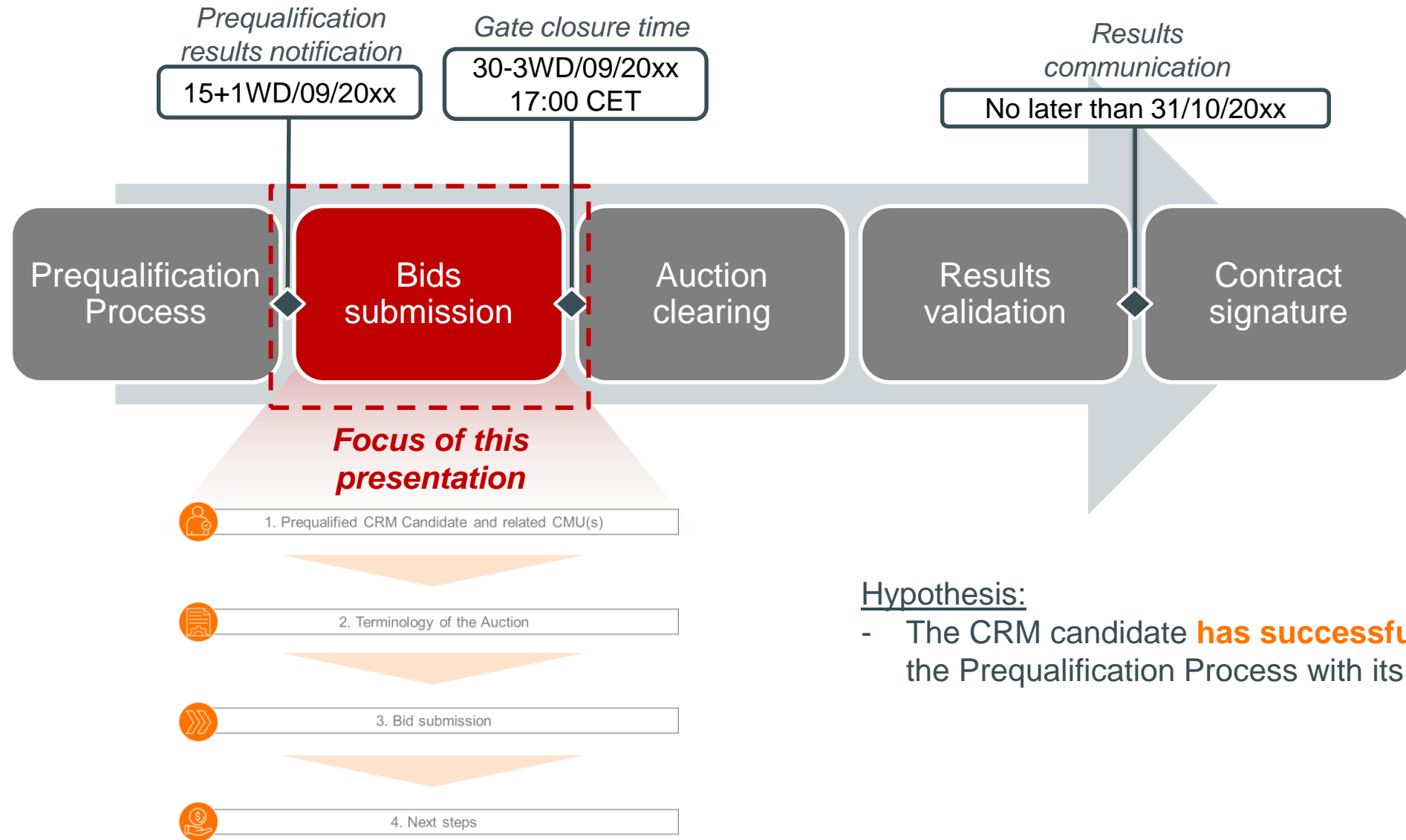
Given that the CRM process consists of several steps, and for each of these steps, several layers of information and details are relevant, it is to be understood that this document focuses on most pertinent auction aspects.

By no means, the use cases replace the rules in the relevant Laws, Royal Decrees, and regulatory approved documents.

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 chapter *Auction Processes* of the Functioning Rules as known at the moment of writing and shared with market parties on 28/08/2020. It also obviously follows the context set by the Electricity Law.

# Auction process flow

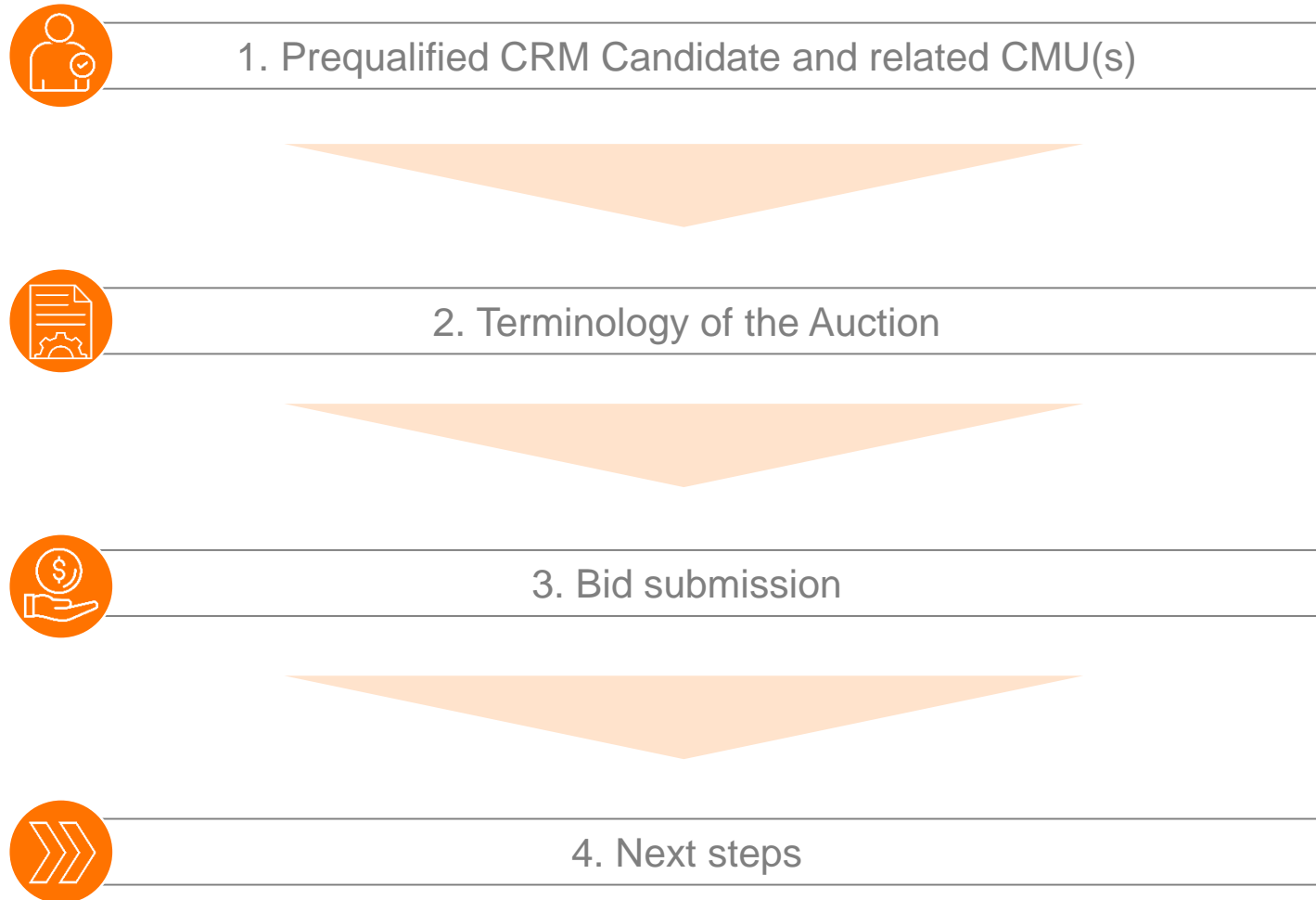


## Hypothesis:

- The CRM candidate **has successfully passed** the Prequalification Process with its CMU

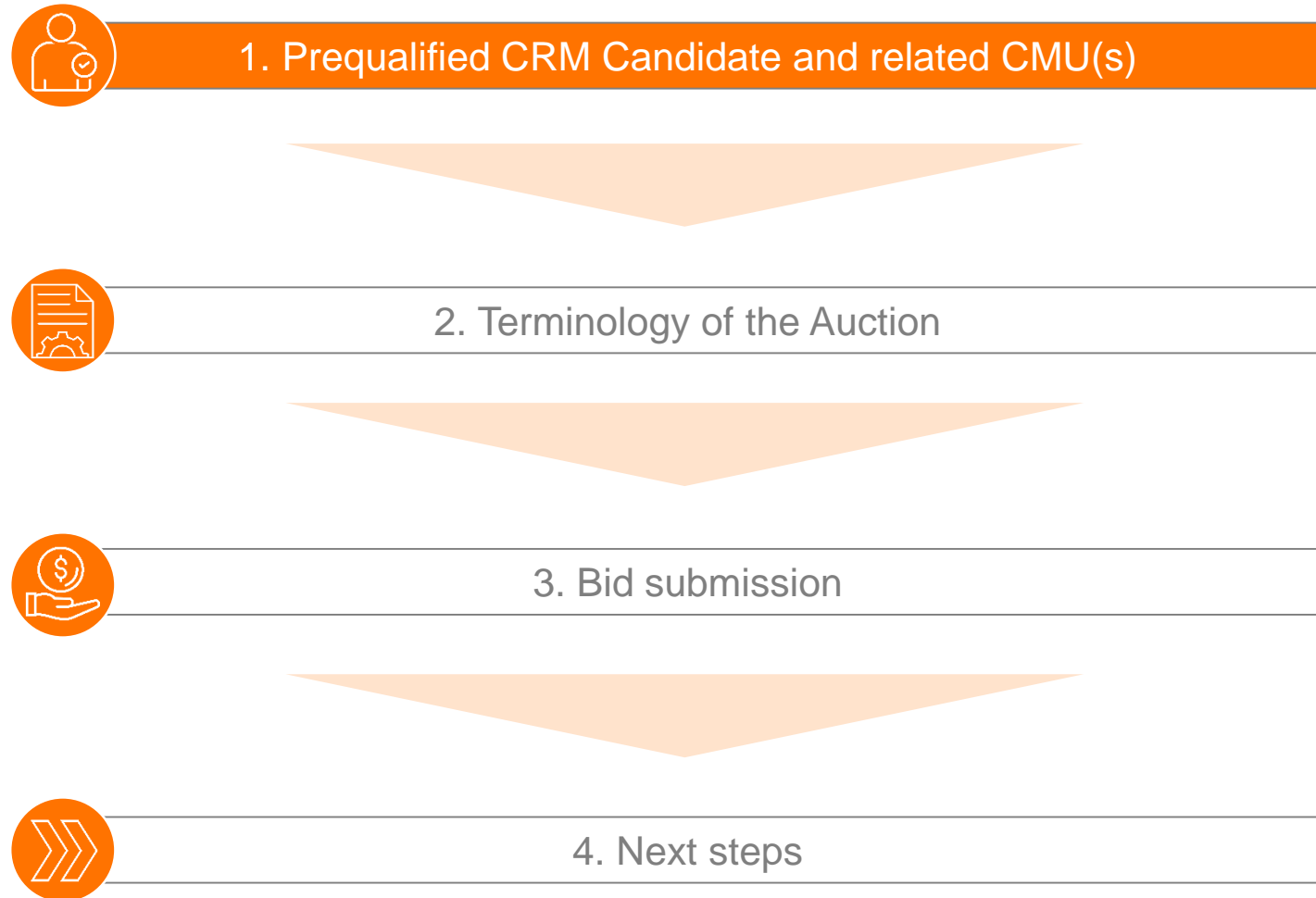
# Use case structure

The Auction will be described according to the following flow:



# Use case structure

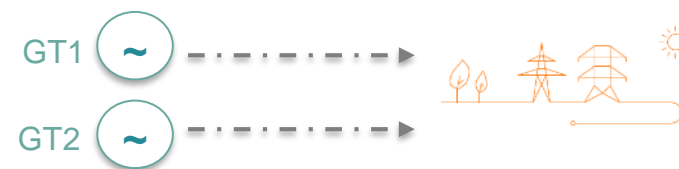
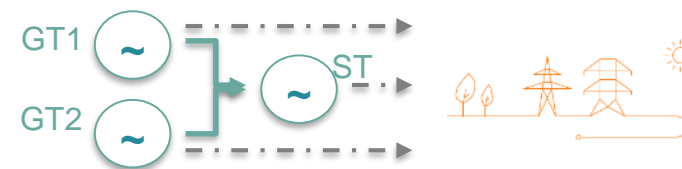
The Auction will be described according to the following flow:





# 1. The Prequalified CRM Candidate and related CMU(s)

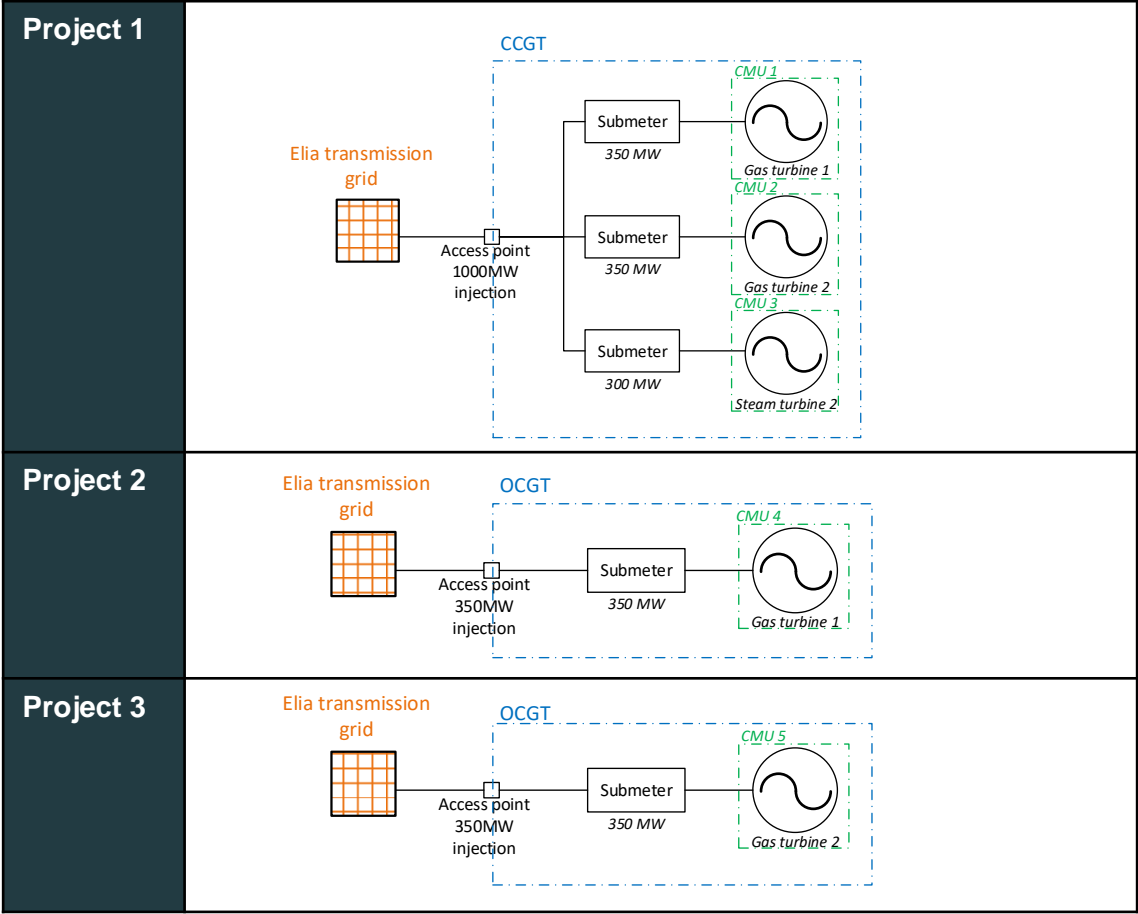
- **EnergyProducer.SA/NA is owner of a site** (located in Belgium) on which projects are currently investigated
- **New built exclusive CCGT / OCGT project** to be connected to Fluxys grid for the gas supply and ELIA for the electrical connection:
  - Project 1: CCGT 2on1
    - 2GT of 350MW each and one ST of 300MW connected to both GT
    - Total: 1000MW Installed Capacity
    - Derating Factor of CCGT = 0,9
    - Operational efficiency expected 60% at normal temperature
  - Project 2 and Project 3: 2 independent OCGT (GT)
    - 2 GT of 350MW
    - Derating Factor of OCGT = 0,92
    - Operational efficiency expected 40% at normal temperature





# 1. CRM prequalified candidate and related CMU(s)

Name of the company:	EnergyProducer.SA/NA
Geographical site:	<ul style="list-style-type: none"><li>Owner: EnergyProducer.SA/NA</li><li>Location: Belgium</li><li>Connection: Electricity TSO grid &amp; Gas TSO grid</li></ul>

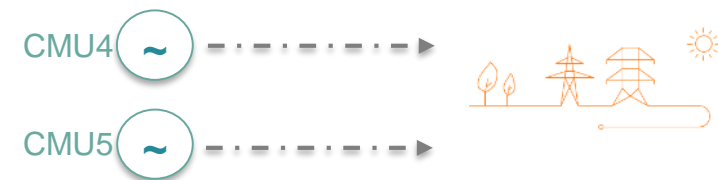
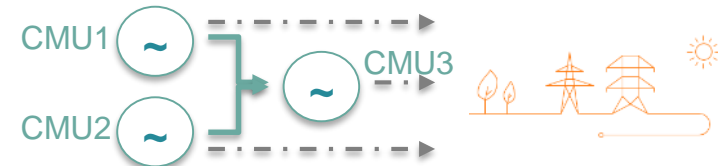




# 1. Prequalified CRM Candidate and related CMU(s)

- 3 projects were duly prequalified during the Prequalification Process.
- EnergyProducer is considered as **Prequalified CRM Candidate**
- The CCGT project is composed of **3 CMUs** while OCGT projects are simply **2 independent CMUs**
- CMU4 (GT1) and CMU5 (GT2) are the same turbines as the 2 GTs of the CCGT project and are 2 independent OCGT projects<sup>1</sup>

The CMU1, CMU2, CMU3, CMU4 and CMU5 have no particular Grid Constraints and are able to sign a technical agreement with ELIA



<sup>1</sup>In the Prequalification Process UC4, CMU4 and CMU5 were considered as the same as CMU1 and CMU2. The present UC4 takes the assumption both are apart duly prequalified CMUs



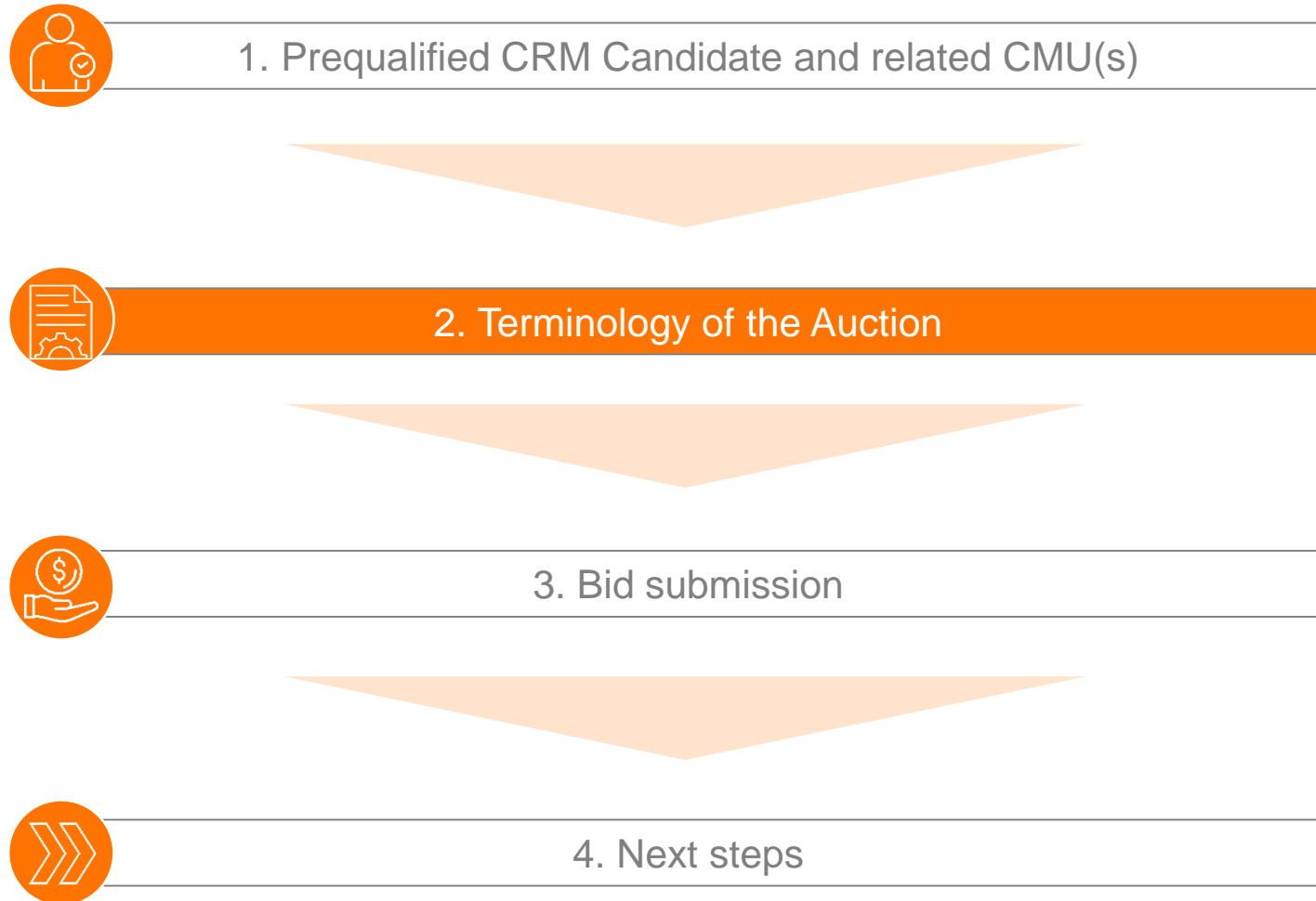


# 1. CRM prequalified candidate and related assets

		Project 1	Project 2 <sup>1</sup>	Project 3 <sup>1</sup>
Technology		<ul style="list-style-type: none"><li>• CCGT 2on1:<ul style="list-style-type: none"><li>○ 2 GT of 350MW each</li><li>○ 1 ST of 300MW connected to both GT</li></ul></li><li>• Operational efficiency: 60% at normal temperature</li></ul>	<ul style="list-style-type: none"><li>• OCGT (GT) of 350MW</li><li>• Operational efficiency: 40% at normal temperature</li></ul>	<ul style="list-style-type: none"><li>• OCGT (GT) of 350MW</li><li>• Operational efficiency: 40% at normal temperature</li></ul>
CRM Capacity	Type	Additional	Additional	Additional
	Nominal reference power	<ul style="list-style-type: none"><li>• CMU 1: 350MW</li><li>• CMU 2: 350MW</li></ul>	CMU4: 350 MW	CMU5: 350 MW
	Opt-out	<ul style="list-style-type: none"><li>• CMU 1: 0MW</li><li>• CMU 2: 0MW</li></ul>	CMU4: 0 MW	CMU5: 0 MW
	Reference power	<ul style="list-style-type: none"><li>• CMU 1: 350MW</li><li>• CMU 2: 350MW</li></ul>	CMU4: 350 MW	CMU5: 350 MW
	Derating factor	0,9	0,92	0,92
	Eligible volume	<ul style="list-style-type: none"><li>• CMU 1: 315MW</li><li>• CMU 2: 315MW</li></ul>	CMU4: 322 MW	CMU5: 322 MW
	Grid constraints	No Grid Constraints & technical agreement signed with ELIA	No Grid Constraints & technical agreement signed with ELIA	No Grid Constraints & technical agreement signed with ELIA
Prequalified CMU's		<ul style="list-style-type: none"><li>• CMU 1: GT 1</li><li>• CMU 2: GT 2</li></ul>	<ul style="list-style-type: none"><li>• CMU 4: GT</li></ul>	<ul style="list-style-type: none"><li>• CMU 5 : GT</li></ul>
Requested Capacity Contract Duration		<ul style="list-style-type: none"><li>• 15 years</li></ul>	<ul style="list-style-type: none"><li>• 15 years</li></ul>	<ul style="list-style-type: none"><li>• 15 years</li></ul>

# Use case structure

The Auction will be described according to the following flow:





## 2. Terminology of the Auction applicable

**Bid** : EnergyProducer has to submit Bids for each of his CMUs. Among other requirements, every Bid is indivisible, related to one CMU only, and must contain a Bid Price, a Capacity Contract Duration and volume. Bid volume has to be equal to Eligible Volume of each CMU (as CMUs are Additional Capacities & subject to EDS).

**Mutually exclusive Bids** : As EnergyProducer is offering different configurations that would be located on the same geographical site: the Bids on CMU4 and CMU5 (GTs) of the OCGT configurations are mutually exclusive of the Bids of the CMU1, CMU2 and CMU 3 in the CCGT configuration.

**Linked Bids**: As the CCGT project presents more than one CMU on the same geographical site, and given that there is a technical dependency between the steam turbine and the gas turbines, the Bids related to those 3 CMUs (CMU 1; CMU2 & CMU3) **must** be Linked Bids, so that, if selected, all of them are. The Bid Prices of the Bids related to the different CMUs of the CCGT that are linked shall be the same.

The Bids related to OCGT projects can't be linked, as both gas turbines are selectable alone

**Global Price Cap**: EnergyProducer introduced 3 investment files to CREG, each one got a 15 years Capacity Category assigned for the corresponding CMUs, which means that EnergyProducer may apply for a up to 15 years Capacity Contract Duration and is not therefore subject to the Intermediate Price Cap. Its Bids are subject to the Global Price Cap as maximal Bid Price.



## 2. Terminology of the Auction applicable

### *Bids conditions relevant to the present use case<sup>2</sup>*

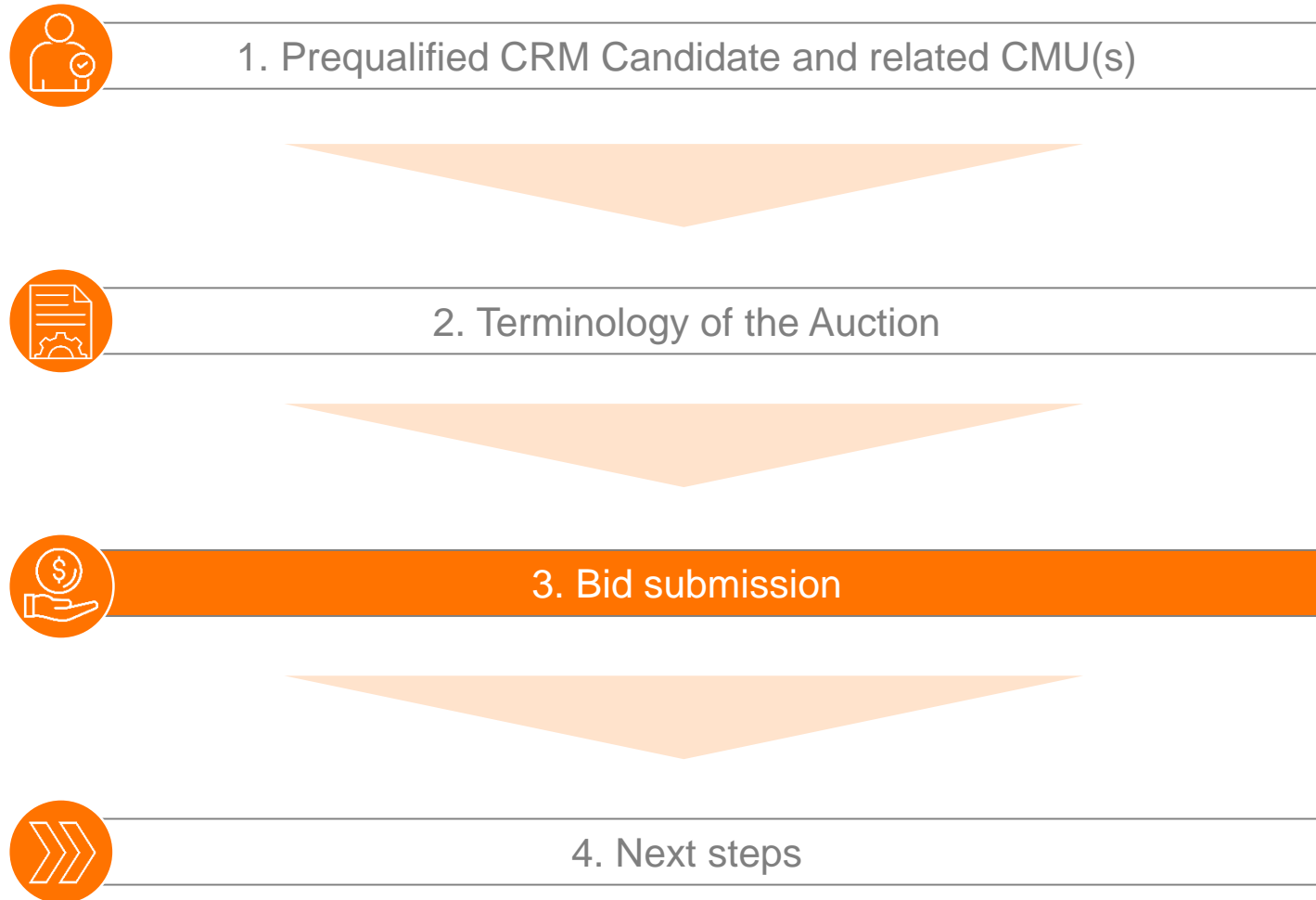
		Project 1			Project 2	Project 3
		CMU 1	CMU 2	CMU 3	CMU 4	CMU 5
Amount of bids		$0 \leq n_{bids} \leq 5$	$0 \leq n_{bids} \leq 5$	$0 \leq n_{bids} \leq 5$	$0 \leq n_{bids} \leq 5$	$0 \leq n_{bids} \leq 5$
Bid price		<ul style="list-style-type: none"> <li><math>0 \leq Price_{bid} \leq GPC^1</math></li> <li>The Bid Prices of the Bids related to the different CMUs of the CCGT that are linked shall be the same</li> </ul>	<ul style="list-style-type: none"> <li><math>0 \leq Price_{bid} \leq GPC^1</math></li> <li>The Bid Prices of the Bids related to the different CMUs of the CCGT that are linked shall be the same</li> </ul>	<ul style="list-style-type: none"> <li><math>0 \leq Price_{bid} \leq GPC^1</math></li> <li>The Bid Prices of the Bids related to the different CMUs of the CCGT that are linked shall be the same</li> </ul>	$0 \leq Price_{bid} \leq GPC^1$	$0 \leq Price_{bid} \leq GPC^1$
Bid volume		$Volume_{bid} = 315 \text{ MW}$	$Volume_{bid} = 315 \text{ MW}$	$Volume_{bid} = 270 \text{ MW}$	$Volume_{bid} = 322 \text{ MW}$	$Volume_{bid} = 322 \text{ MW}$
Capacity Contract Duration		$1 \leq Duration_{bid} \leq 15 \text{ years}$	$1 \leq Duration_{bid} \leq 15 \text{ years}$	$1 \leq Duration_{bid} \leq 15 \text{ years}$	$1 \leq Duration_{bid} \leq 15 \text{ years}$	$1 \leq Duration_{bid} \leq 15 \text{ years}$
Bids relationship	Linked bids	X	X	X		
	Mutually Exclusive bids	No constraint				

<sup>1</sup>Global Price Cap

<sup>2</sup>Other conditions may be applicable as specified in the Functioning Rules

# Use case structure

The Auction will be described according to the following flow:







### 3. Bid elaboration by the Prequalified CRM Candidate

According to the Functioning Rules, EnergyProducer is elaborating Bids for its CMUs.

EnergyProducer chooses to offer the following combinations of Bids :

			Project 1			Project 2	Project 3
			CMU 1	CMU 2	CMU 3	CMU 4	CMU 5
Set of mutual exclusive Bids	1: OCGT 1	15 years	Set 1 of mutually exclusive bids			X	
	2: OCGT 2	15 years					X
	3: CCGT	15 years	X	X	X		
	4: CCGT	13 years	X	X	X		
	5: CCGT	8 years	X	X	X		

Possible Auction results :

- None selected
- Project 2 selected
- Project 3 selected
- Project 2 and Project 3 selected
- Project 1 selected

### 3. Bid submission – Mockups: Initial screen

Home

Pre-qualification

Auction

Secondary Market

Auction demo

Profile

Log Out

Help

CRM Auction Dashboard

Delivery Period

2025

Auction Type

Y-4

#23A2ZE4F

Jean Dumont


Compliance	Bid ID	CMU ID	CMU Status	Volume (MW)	Price (€/kW/year)	Contract Duration	Linked with Bid ID	Mutually Exclusive with Bid ID	Bid Status


Global Price Cap (€)

70€/kW/year

Intermediate Price Cap (€)

20€/kW/year





Save as draft

Compliance Check

Submit



### 3. Bid submission – Mockups: Creating the first bid

HomePre-qualificationAuctionSecondary MarketAuction demoProfileLog OutHelp

CRM Auction Dashboard

Delivery Period2025

Auction TypeY-4

#23A2ZE4FJean Dumont

Compliance	Bid ID	CMU ID	CMU Status	Volume (MW)	Price (€/kW/year)	Contract Duration	Linked with Bid ID	Mutually Exclusive with Bid ID	Bid Status

Bid

CMU ID	CMU1(GT1)
Volume (MW)	322
Price (€)	40,00
Contract Duration (years)	15
OK	

Global Price Cap (€)70€/kW/year

Intermediate Price Cap (€)20€/kW/year

+

Save as draft

Compliance Check

Submit



### 3. Bid submission – Mockups: All bids are created

CCGT CCGT CCGT

HomePre-qualificationAuctionSecondary MarketAuction demoProfileLog OutHelp

CRM Auction Dashboard

Delivery Period2025

Auction TypeY-4

#23A2ZE4FJean Dumont

Compliance	Bid ID	CMU ID	CMU Status	Volume (MW)	Price (€/kW/year)	Contract Duration	Linked with Bid ID	Mutually Exclusive with Bid ID	Bid Status
	1	CMU4(GT1)	Additional	322	40,00	15			Created
	2	CMU5(GT2)	Additional	322	40,00	15			Created
	3	CMU1(GT1)	Additional	315	50,00	15			Created
	4	CMU2(GT2)	Additional	315	50,00	15			Created
	5	CMU3(ST)	Additional	270	50,00	15			Created
	6	CMU1(GT1)	Additional	315	60,00	13			Created
	7	CMU2(GT2)	Additional	315	60,00	13			Created
	8	CMU3(ST)	Additional	270	60,00	13			Created
	9	CMU1(GT1)	Additional	315	69,00	8			Created
	10	CMU2(GT2)	Additional	315	69,00	8			Created
	11	CMU3(ST)	Additional	270	69,00	8			Created

Global Price Cap (€)

70€/kW/year

Intermediate Price Cap (€)

20€/kW/year

+

Save as draft

Compliance Check

Submit



### 3. Bid submission – Mockups: Adding properties to the bids

CCGT CCGT CCGT

HomePre-qualificationAuctionSecondary MarketAuction demoProfileLog OutHelp

CRM Auction Dashboard

Delivery Period2025

Auction TypeY-4

#23A2ZE4FJean Dumont

Compliance	Bid ID	CMU ID	CMU Status	Volume (MW)	Price (€/kW/year)	Contract Duration	Linked with Bid ID	Mutually Exclusive with Bid ID	Bid Status
	1	CMU4(GT1)	Adc						Created
	2	CMU5(GT2)	Adc						Created
	3	CMU1(GT1)	Adc						Created
	4	CMU2(GT2)	Adc						Created
	5	CMU3(ST)	Adc						Created
	6	CMU1(GT1)	Adc						Created
	7	CMU2(GT2)	Adc						Created
	8	CMU3(ST)	Adc						Created
	9	CMU1(GT1)	Adc						Created
	10	CMU2(GT2)	Adc						Created
	11	CMU3(ST)	Additional	270	69,00	8			Created

Bid ID: 1

Linked with Bid ID

Mutually Exclusive with Bid ID

1☐

2☐

3☐

4☐

5☐

6☐

7☐

8☐

OK

Global Price Cap (€)70€/kW/year

Intermediate Price Cap (€)20€/kW/year

Save as draft

Compliance Check

Submit





### 3. Bid submission – Mockups: All bids are submitted

HomePre-qualificationAuctionSecondary MarketAuction demoProfileLog OutHelp

CRM Auction Dashboard

Delivery Period2025

Auction TypeY-4

#23A2ZE4FJean Dumont

Compliance	Bid ID	CMU ID	CMU Status	Volume (MW)	Price (€/kW/year)	Contract Duration	Linked with Bid ID	Mutually Exclusive with Bid ID	Bid Status
	1	CMU4(GT1)	Additional	315	40,00	15		3, 4, 5, 6, 7, 8, 9, 10, 11	Submitted
	2	CMU5(GT2)	Additional	315	40,00	15		3, 4, 5, 6, 7, 8, 9, 10, 11	Submitted
	3	CMU1(GT1)	Additional	315	50,00	15	4,5	1, 2, 6, 7, 8, 9, 10, 11	Submitted
	4	CMU2(GT2)	Additional	315	50,00	15	3,5	1, 2, 6, 7, 8, 9, 10, 11	Submitted
	5	CMU3(ST)	Additional	270	50,00	15	3,4	1, 2, 6, 7, 8, 9, 10, 11	Submitted
	6	CMU1(GT1)	Additional	315	60,00	13	7,8	1, 2, 3, 4, 5, 9, 10, 11	Submitted
	7	CMU2(GT2)	Additional	315	60,00	13	6,8	1, 2, 3, 4, 5, 9, 10, 11	Submitted
	8	CMU3(ST)	Additional	270	60,00	13	6,7	1, 2, 3, 4, 5, 9, 10, 11	Submitted
	9	CMU1(GT1)	Additional	315	69,00	8	10,11	1, 2, 3, 4, 5, 6, 7, 8	Submitted
	10	CMU2(GT2)	Additional	315	69,00	8	9,11	1, 2, 3, 4, 5, 6, 7, 8	Submitted
	11	CMU3(ST)	Additional	270	69,00	8	9,10	1, 2, 3, 4, 5, 6, 7, 8	Submitted

Global Price Cap (€)70€/kW/year

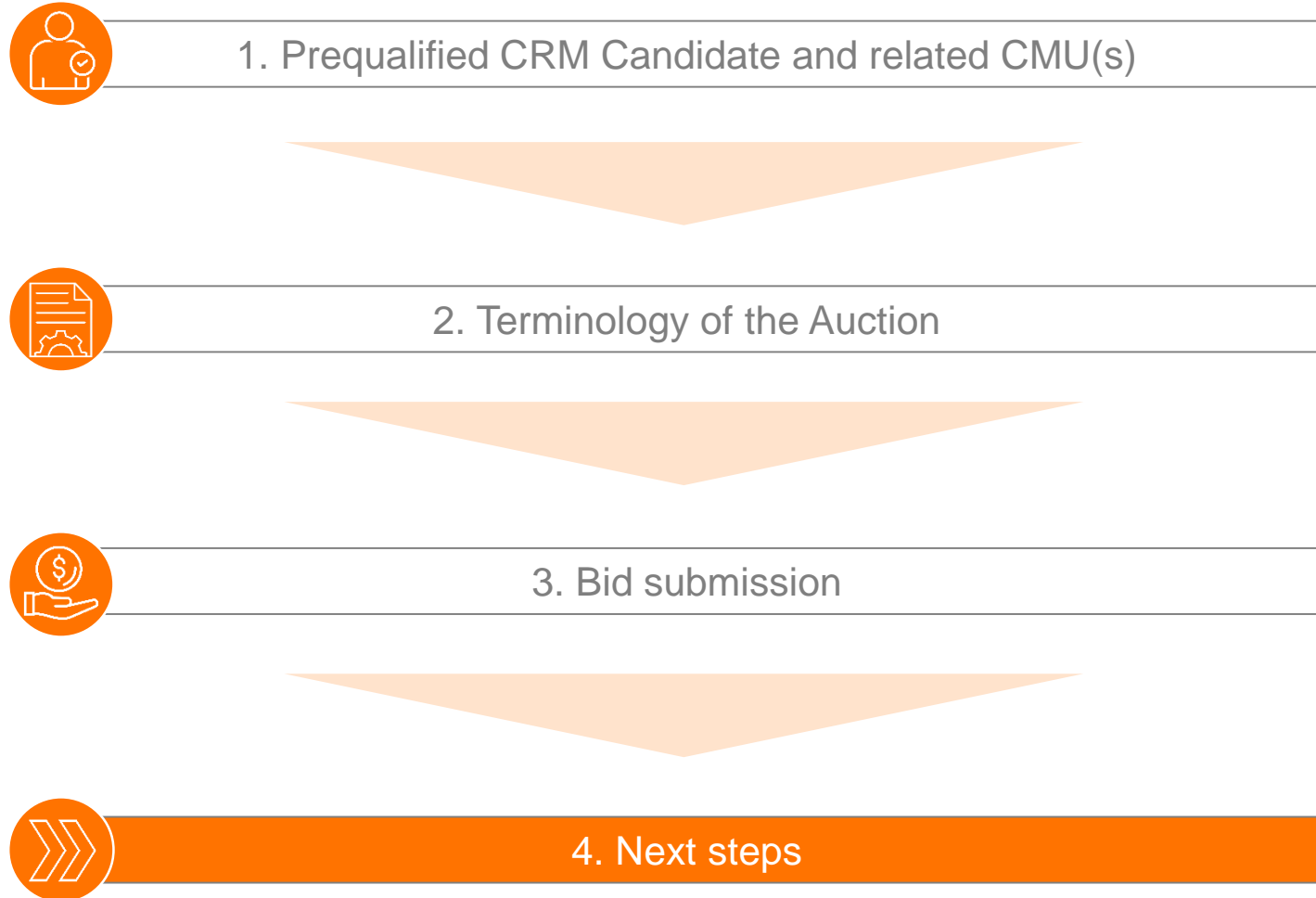
Intermediate Price Cap (€)20€/kW/year

Save as draftCompliance CheckSubmit

CCGT CCGT CCGT

# Use case structure

The Auction will be described according to the following flow:



## 4. Next steps

### Auction clearing



- Auction clearing as described in the Functioning Rules
- Y-4 2021 for 2025 Delivery Period = **pay-as-bid rule**
- As each of the Bids for CMU4 and CMU5 in the framework of the projects of the OCGTs were mutually exclusive of CCGTs GT1 and GT2, only one configuration for the GT1 and GT2 can be selected
- Capacity Remuneration will be set at 60€/kW/year starting from the 2025 Delivery Period

### Results validation



- Result validation according to modalities set in Royal Decree Control
- Result communication to Energy Producer

### CCGT Bids 3, 4 and 5 of EnergyProducer are selected in the Auction

Auction results		
Selected bids		
	Selected Bid volumes	CMU1 (315MW); CMU2 (315MW); CMU3 (270MW)
	Related Price	50€/kW/year
	Capacity contract duration	15 years
Remaining Eligible Volume		0 MW
Issuance date of the 1 <sup>st</sup> quarterly report		01/04/2022



## 4. Next steps

### Capacity contract signature

- As next step, Energy Producer shall sign a Capacity Contract with the Contractual Counterparty



***Once the Capacity Contract is signed, EnergyProducer enters the pre-delivery phase***

**Thank you.**

