

CACM Cost Report of 2023



CACM Cost Report of 2023

**Prepared by all NEMOs and all TSOs
according to Article 80 of COMMISSION
REGULATION (EU) 2015/1222 of 24 July 2015
establishing a guideline on capacity
allocation and congestion management**

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Introduction

All Nominated Electricity Market Operators (NEMOs) and All Transmission System Operators (TSOs) report to the regulatory authorities on the costs of establishing, amending and operating Single Day-Ahead (SDAC) and Single Intra-Day Coupling (SIDC) according to the Article 80 of the Commission Regulation (EU) 2015 / 1222 of 24 July 2015 – Capacity Allocation and Congestion Management (CACM) Regulation. Costs directly related to SDAC and SIDC shall be clearly and separately identified and auditable. The report shall also provide full details of contributions made to NEMO costs by TSOs in accordance with Article 76(2).

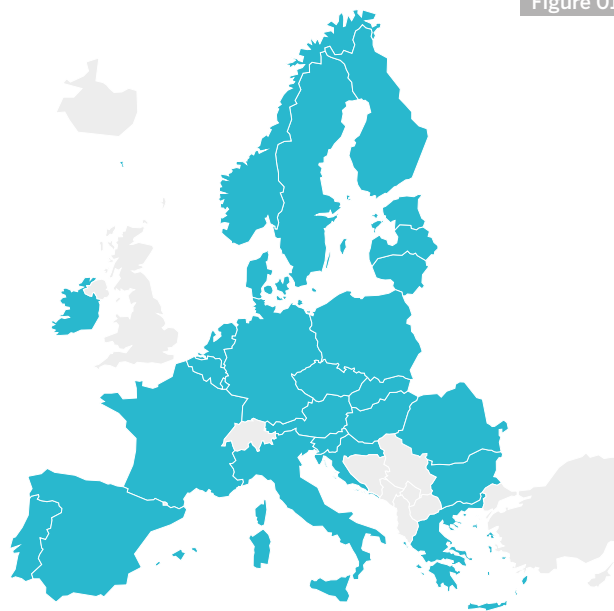
Similar as last year, the yearly CACM cost report has been prepared by NEMOs and TSOs under coordination of the joint Market Coupling Steering Committee (MCSC) governance.

Single Day-Ahead Coupling

The aim of SDAC is to create a single pan European cross-zonal day-ahead electricity market. An integrated day-ahead market will increase the overall efficiency of trading by promoting effective competition, increasing liquidity, and enabling a more efficient utilisation of the generation resources across Europe. SDAC allocates scarce cross-border transmission capacity in the most efficient manner by coupling wholesale electricity markets from different regions through a common algorithm, simultaneously considering cross-border transmission constraints and thereby maximising social welfare. SDAC began as a voluntary initiative from NEMOs and TSOs in 2014 with North-Western Europe (NWE) Price Coupling, South-West Europe (SWE) coupling and 4M MC. Until June 2021, there were two operational solutions under SDAC. These were coupled as part of the Interim Coupling project with the aim to integrate MRC and 4M MC. In 2022, SDAC covered most of the EU, and, since 8 June 2022, with the successful go-live of the Flow Based Market Coupling, the flow-based capacity calculation method was implemented in the Core region.

Throughout 2023, there have been several changes in membership of SDAC. In 2023, 1 NEMO adhered to the Day-Ahead Operational Agreement (DAOA): BRM. At the moment of writing, BRM is a non-operational member. At the end of 2023, Nasdaq terminated the cooperation under MCSC. As such, SDAC continues to serve 27 countries. In total, 32 TSOs¹ and 16 NEMOs² cooperate under the DAOA.

Figure 01



■ SDAC members (operational*)
* SEM bidding zone: operation in isolation

Note: Luxembourg is part of the Amprion Delivery Area. Market participants in Luxembourg have access to the SDAC through the Amprion Delivery Area

The governance of SDAC consists of three layers:

- Joint NEMOs and TSOs: governed by the Single Day-Ahead Coupling Operations Agreement (DAOA);
- NEMO-only: governed by the All NEMO Day-Ahead Operation Agreement (ANDOA);
- TSO-only: governed by the TSO Cooperation Agreement for Single Day-Ahead Coupling (TCDA).



1 50Hertz, Amprion, APG, AST, Baltic Cable, ČEPS, Creos, HOPS, EirGrid, ESO, Elering, ELES, Energinet, Elia, Fingrid, IPTO, Kraftnät Åland, Litgrid, MAVIR, Transselectrica, PSE, REE, REN, RTE, SEPS, SONI, Statnett, Svenska Kraftnät, TenneT NL, TenneT DE, Terna, and TransnetBW.

2 BRM (non-operational until accession), BSP SouthPool, CROPEX, EirGrid and SONI acting jointly as SEMOpX, EPEX SPOT, EXAA, GME, HEnEx, HUPX, IBEX, Nord Pool EMCO, OKTE, OMIE, OPCOM, OTE, and TGE.

Single Intraday Coupling

The aim of SIDC is to create a single EU cross-zonal intraday electricity market. In simple terms, buyers and sellers of energy – market participants – are able to work together across Europe to trade electricity continuously on the day the energy is required.

An integrated intraday market makes intraday trading more efficient across Europe by promoting competition and increasing liquidity (i.e., increasing the ease with which energy can quickly be bought and sold without its price being affected). Additionally, it also makes it easier to share generation resources across the continent, and therefore helps in better dealing with unexpected changes in consumption and possible outages.

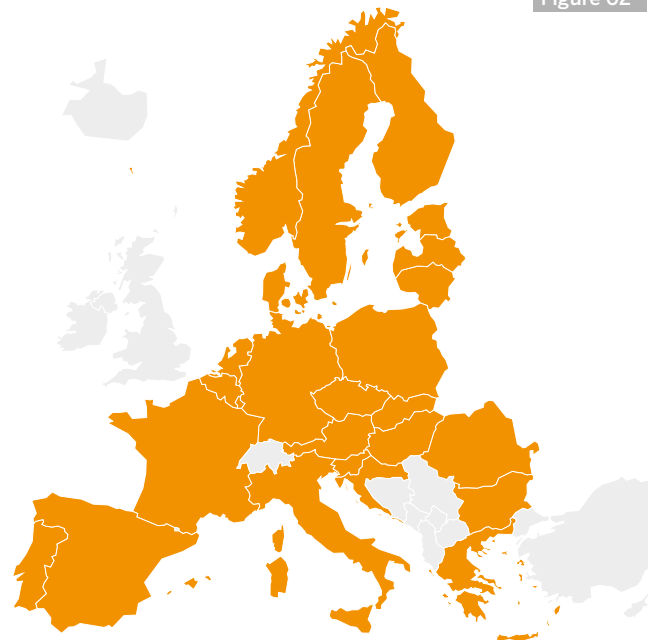
SIDC is an initiative between NEMOs and TSOs which enables continuous cross-border trading across Europe. SIDC follows on from the Cross Border Intraday (XBID) Project which delivered, in June 2018, the first go-live of the intraday continuous trading platform. It allows electricity transmission systems to integrate and expand across Europe. The SIDC was launched on 12/13 June 2018 across 15 countries. On 19/20 November 2019 SIDC went live across further seven countries, resulting in 22 countries being coupled. Furthermore, the Northern Italian borders (IT–FR, IT–AT and IT–SI) were integrated into the already coupled intraday region on 21 September 2021. The SIDC topology at the end of 2022 included 25 countries, especially after the inclusion of Slovakia and Greece in the 4th wave that was realized in November. In the 5th go-live wave of SIDC in August 2023, ETPA went live as the third NEMO operating in the Dutch market.

In total, 30 TSOs and 15 NEMOs from 27 countries cooperate under the Intraday Operational Agreement (IDOA), the agreement governing SIDC.

The governance of the SIDC consists of three layers:

1. Joint NEMOs and TSOs: governed by the Intraday Operation Agreement (IDOA).
2. NEMO-only: governed by the ALL NEMO-Intraday Operation Agreement (ANIDOA).
3. TSO-only: governed by the Transmission Cooperation Agreement (TCID).

Figure 02



■ SIDC member countries (EU)

Note: map includes both EU and EEA SIDC member countries



Joint SDAC and SIDC governance structure

As of January 2022, a new joint governance structure was implemented in order to achieve a more streamlined cooperation between NEMOs and TSOs.

NEMOs and TSOs have been working intensely over recent years to achieve a truly integrated European electricity market. By integrating the decision making for both the day-ahead and intraday timeframe, the new structure ensures further coordination, fosters efficiency and creates a faster decision-making mechanism. Therefore, SDAC and SIDC have been merged into a single Market Coupling Steering Committee (MCSC) that includes representatives of all parties involved.

MCSC activities are supported by horizontal joint working groups which for example address the legal and communication aspects of the couplings. In addition, SDAC as well as SIDC rely on the dedicated Working Groups: Operations Committee (OPSCOM), Change Control, Quality Assurance and Release Management (QARM), and Market and System Design (MSD).

Throughout 2023 several changes have been made to the governance structure of the MCSC. An example here is the establishment of the Governance task force, which is tasked with implementing organisational improvements. In addition, the MCSC approved in July 2023 to add the 15 min MTU testing group under the SDAC QARM governance.

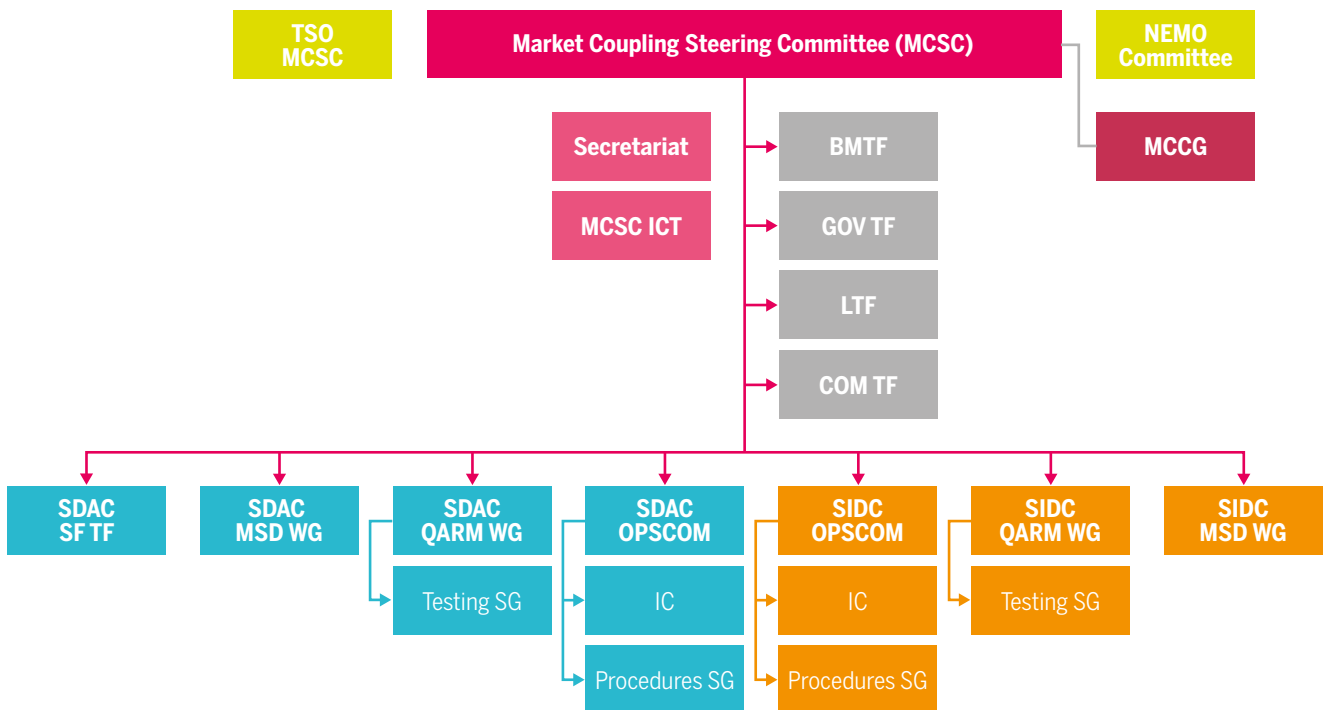


Figure 03

Summary

Overview of costs since 2017 | E = Establishing and amending, O = Operating

Table 1

		2017		2018		2019		2020		2021		2022		2023		2024*	
in K,€		E	O	E	O	E	O	E	O	E	O	E	O	E	O	E	O
SDAC	Joint costs	204	0	902	0	1,368	264	2,028	346	3,240	449	3,397	458	3,384	959	5,290	1,326
	All NEMOs	1,315	0	1,314	0	1,134	446	1,149	465	366	761	346	1,009	389	571	600	608
	All TSOs	0	0	22	0	3	0	15	9	44	34	59	45	186	122	322	146
	Total	1,519	0	2,238	0	2,505	710	3,192	820	3,650	1,244	3,802	1,512	3,959	1,652	6,212	2,080
SIDC	Joint costs	2,846	0	4,854	959	3,780	2,135	4,674	2,571	3,944	2,448	5,385	2,587	6,437	2,932	7,349	4,526
	All NEMOs	863	0	679	71	472	235	424	847	354	826	302	847	317	848	508	1,068
	All TSOs	686	0	768	200	606	374	649	282	729	281	696	280	716	340	837	402
	Total	4,395	0	6,301	1,230	4,858	2,744	5,747	3,700	5,027	3,555	6,383	3,714	7,470	4,120	8,694	5,996
Regional total	Joint costs	703	592	718	317	1,113	645	576	278	966	139	997	323	959	175	995	248
	All NEMOs	6	0	1	0	0	117	0	656	0	397	0	107	0	89	0	0
	All TSOs	637	378	535	429	918	101	1,133	503	893	527	572	535	1,840	389	1,438	826
	Total	1,346	971	1,254	746	2,031	863	1,709	1,437	1,859	1,063	1,569	965	2,799	653	2,433	1,074
Grand Total (common + regional costs)	7,260	971	9,793	1,976	9,394	4,319	10,648	5,957	10,536	5 862	11,754	6,191	14,228	6,425	17,339	9,150	
Total cost per year	8,230		11,769		13,711		16,605		16,398		17,945		20,653		26,489		
Total since 2017 until end of 2023	105,311																

* forecasted costs



SDAC key events in 2023

Following the go-live of day-ahead flow-based market coupling in the Core capacity calculation region (CCR) on 8 June 2022, there has been a low occurrence rate of fallback capacity calculations, proving the high stability of the process. This project constituted a major milestone in implementing the CACM guideline and its target model. Additionally, the go-live of Core flow-based has led to increased price convergence across the region.

In 2023, SDAC continued to operate successfully without any full decoupling. All operational incidents are monitored and analysed on a regular basis. Updates of the processes are introduced via the SDAC operational steering committee (OPSCOM) to mitigate relevant risks.

Following multiple second auction events occurred due to negative prices in the Netherlands in May 2023, the threshold for triggering the second auction was changed from -150 €/MWh to -500 €/MWh for several NEMOs operating in SDAC. This change occurred in June 2023.

The SDAC is continuously being developed with respect to topology and system functionalities. Over the current reporting period, the following SDAC functional projects went live:

1. New releases of both PMB and the EUPHEMIA algorithm in November 2023. The new releases – 12.1 for PMB and 11.2 for EUPHEMIA – contained updates related to fallback procedures, as well as functionalities related to IDA (Intraday Auction; IDA use the same assets). There were also several technology updates and inclusion of functionalities needed for 15 min MTU.

Technical advancements were planned and implemented, as part of the SDAC research and development program. The improvements were developed under the EUPHEMIA Lab R&D program, where the challenges related to optimality, repeatability and scalability are being addressed. The current version of EUPHEMIA release in production is E11.2 and went live in November 2022, and next version E11.3 is planned to go live in Q2 2024.

Since its launch, EUPHEMIA has been continuously developed further. With the latest releases, changes needed for future projects, such as IDA and 15 min MTU have been introduced and refined. Additionally, the behaviour for fallback situations has been improved.

For several regional projects, SDAC changes or support in testing is provided. These projects include Celtic Cable (planned to go live in 2026), Hansa CCR phase 2, multi-NEMO arrangements (for which the FR-ES border has gone into effect in February 2024), Nordic Flow-Based, and Advanced Hybrid Coupling in Core CCR.

MCSC is working to deliver the go-live of 15 min MTU by Q1 2025. MCSC has agreed on the following measures for algorithm improvements needed for the 15 min MTU implementation:

- Removal of PUN product from SDAC.
- Transition from Complex order to Scalable complex order.
- Additional time to the algorithm in DA MC process (13 minutes more, totally to 30 minutes as of 15 min MTU go-live).
- Deployment of the Distributed Computing environment.



SIDC key events in 2023

The joint TSOs and NEMOs single intraday coupling IT system with one shared order book (SOB), a capacity management module (CMM) and a shipping module (SM) continue to perform operationally robustly³. In total, circa 371 million trades have been executed within SIDC since its inception in June 2018 (counting until end of December 2023)

The last geographical extension for SIDC was in November 2022 when the fourth wave went live which integrated the Greek borders (GR-IT and GR-BG)⁴ and Slovak borders (SK-CZ, SK-HU and SK-PL)⁵. In August 2023, the fifth go-live wave was completed with the addition of ETPA as intraday NEMO in The Netherlands.

³ See www.entsoe.eu/network_codes/cacm/implementation/sidc/.

⁴ Terna, ESO and IPTO, and Gestore dei Mercati Energetici SpA (GME), IBEX and HEnEx

⁵ ČEPS, MAVIR, PSE and SEPS, and EPEX SPOT, EMCO, HUPX, OKTE, OTE and TGE.

In the period covered by this report, release 4.0 was developed to support the introduction of IDA. A second release (R4.1) is scheduled for Q4 of 2024, embedding lower priority change requests not included in R4.0 version. In addition, additional Service Requests (ASR) to analyse how to update the XBID platform were agreed upon in 2023 and will be analysed in 2024 in order to push SLA boundaries to respectively achieve 20 million (RTS4 Slice B) and 30 million (RTS4 Slice C) orders per day.

Implementation of IDA is a prioritised project by ACER and Market Coupling Steering Committee. Technical design has been concluded; extensive functional and integration testing have been finalised. The go-live of IDA took place on 13 June 2024, after simulation testing (including with market participants) was successfully finalised.

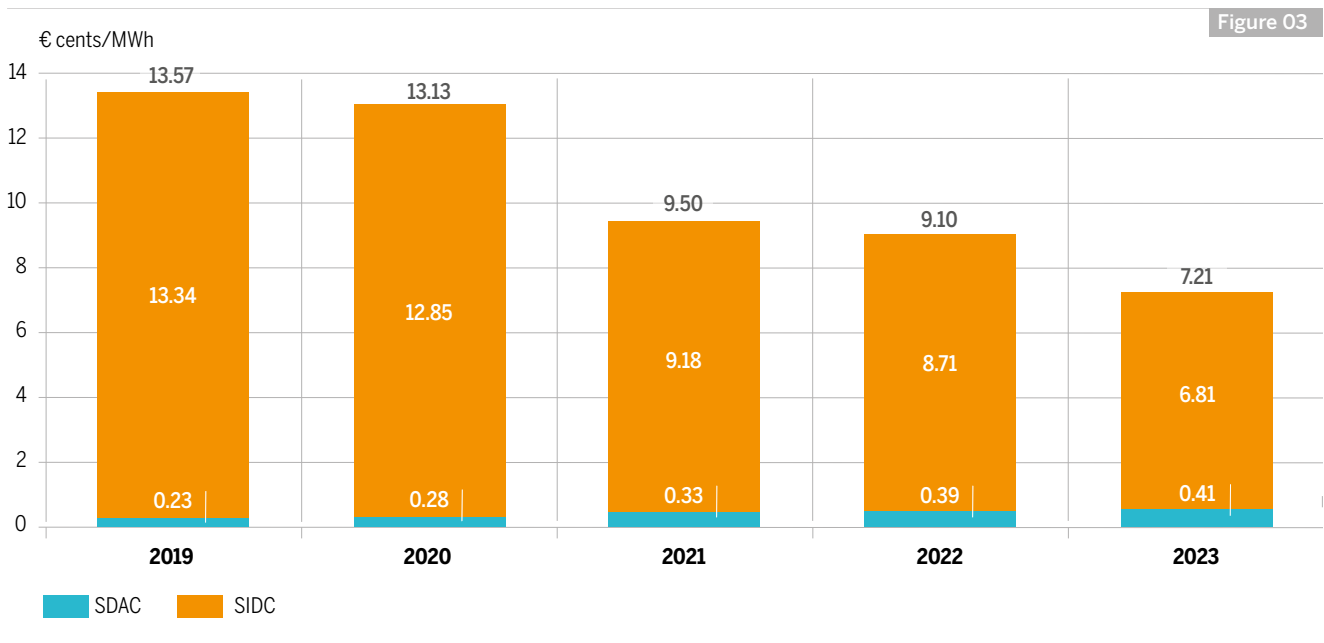
Flow-based capacity allocation implementation is also a priority of SIDC after the implementation of IDA. Design work has started, including concept and performance analysis with the IT provider. In order to address efficiently the expected performance impact, the design and implementation started in 2023 (and will continue in 2024) with the realisation of a minimum viable product.

No critical incidents have occurred during the reporting period at the time of writing. All operational incidents are monitored and analysed on a regular basis. Updates of the processes are introduced via the SIDC operational steering committee (OPSCOM) to mitigate relevant risks.

The cost of market coupling

Although the cost of market coupling seems to be heading in an increasing trend over the past years, it is crucial to understand that all the investments made into the project resulted in an increase of Traded Volumes. To take things into perspective, the cost per traded volume has been going down steadily over the years.

In 2019 and 2020, the cost per MWh traded using the SDAC and SIDC platforms, was 14 € cents/MWh and 13 € cents/MWh. The following years the price decreased further to 10 € cents/MWh in 2021, 9 € cents/MWh in 2022 and 7 € cents/MWh in 2023.



Chapter A

Common costs resulting from the coordinated activities

– of all NEMOs and all TSOs

– all NEMOs only

– all TSOs only participating in the single day-ahead and single intraday coupling

The following table provides an overview of total actual common costs for the SDAC and SIDC in 2023 (excl. regional costs):

Table 2

in €		Establishing and amending costs		Operating costs	
SDAC common costs	All NEMOs and all TSOs costs	1.1	3,384,121	1.2	959,283
	All NEMOs costs	1.3	389,275	1.4	570,767
	All TSOs costs	1.5	186,621	1.6	121,869
SIDC common costs	All NEMOs and all TSOs costs	2.1	6,437,334	2.2	2,931,965
	All NEMOs costs	2.3	316,879	2.4	847,695
	All TSOs costs	2.5	715,780	2.6	340,023
Total			11,430,010		5,771,602

The following table provides an overview of the 2024 forecast of common costs for the SDAC and SIDC (excl. regional costs):

Table 3

in €		Establishing and amending costs		Operating costs	
SDAC common costs	All NEMOs and all TSOs costs	3.1	5,290,374	3.1	1,325,972
	All NEMOs costs	3.3	599,628	3.3	608,207
	All TSOs costs	3.5	322,416	3.5	146,229
SIDC common cost	All NEMOs and all TSOs costs	4.1	7,349,348	4.1	4,526,896
	All NEMOs costs	4.3	507,731	4.3	1,068,437
	All TSOs costs	4.5	836,866	4.5	401,767
Total			14,906,363		8,077,508

1 Actual SDAC costs of 2023

1.1 The joint all TSOs and all NEMOs costs of establishing and amending the SDAC

The amount of 3,384,121 € consists of:

Table 4

Item	Category	Temporary activity	2023 costs (€)
1.1.1	Simulation Facility CR Contingency	NO	57,639
1.1.2	Simulation Facility PCR Specifications updates	NO	8,500
1.1.3	Simulation Facility Adaption for EUPHEMIA releases	NO	74,157
1.1.4	Simulation Facility TF leader costs	NO	148,578
1.1.5	SDAC technical solution: R&D	NO	626,488
1.1.6	MSD Nemos & TSOs co leader	NO	65,119
1.1.7	MSD PMO + organisational aspects	NO	90,218
1.1.8	MSD TF general contingency	NO	4,163
1.1.9	15 min MTU project (PM, testing body)	YES	13,500
1.1.10	MCSC PMO	NO	50,625
1.1.11	Meeting Arrangements	NO	22,075
1.1.12	QARM	NO	139,939
1.1.13	Communication TF Leader	NO	24,768
1.1.14	Legal TF Leaders	NO	51,407
1.1.15	SDAC technical solution: EUPHEMIA Releases	NO	142,275
1.1.16	SDAC technical solution: Leader Remuneration	NO	102,755
1.1.17	SDAC technical solution: PMB Releases	NO	462,104
1.1.18	SDAC technical solution: Support Tasks	NO	35,503
1.1.19	Maintenance contracts	NO	988,866
1.1.20	DisCo daily fee	NO	140,896
1.1.21	SDAC IT tools	NO	2,070
1.1.22	Central Settlement Entity Fees	NO	101,640
1.1.23	Contingency	NO	30,836
	Total SUM		3,384,121

1.2 The joint all TSOs and all NEMOs costs of operating the SDAC

The amount of 959,283 € consists of:

Table 5

Item	Category	Temporary activity	2023 costs (€)
1.2.1	MCSC-PMO	NO	74,398
1.2.2	Meeting Arrangements	NO	22,075
1.2.3	Communication TF Leader	NO	9,239
1.2.4	Legal TF Leaders	NO	17,136
1.2.5	Simulation Facility Operational	NO	261,631
1.2.6	SDAC OPSCOM	NO	160,269
1.2.7	Maintenance contracts	NO	312,895
1.2.8	Central Settlement Entity Fees	NO	101,640
	Total SUM		959,283

- The total 2023 Joint NEMOs and TSOs costs ended up consuming 79 % of the amount forecasted for the year. The unspent amounts derive from the postponement of some cost elements to the 2024 fiscal year such as:
 - › Non-uniform pricing development
 - › 15 min MTU project (PM, testing body)
- A rate of 925 €/MD was used for internal resources of NEMOs and TSOs
- The cost sharing methodology
- The 2023 Joint NEMOs and TSOs costs are based on the capacity allocation and congestion management (CACM) sharing keys implemented in the DAOA, which entered into force 28 March 2019.

SDAC Technical Solution (Items 1.1.5, 1.1.15, 1.1.16, 1.1.17 and 1.1.18)

The main goal of the SDAC technical solution used in the SDAC is to calculate energy allocation prices across the European electricity market to increase the market transparency and maximise the social welfare by using one single common Algorithm. Within the SDAC project the SDAC technical solution is also known as “PCR”.

In order to allow for better budget tracking throughout the year, the SDAC technical solution is broken down into multiple different cost items. The majority of the costs derives from research and developments related to the SDAC Algorithm, which was carried out by the third-party service provider N-Side.

Market and System Design Task Force (Items 1.1.6, 1.1.7 and 1.1)

The mission, objective & general scope of the MSD TF is the following:

- Ensure a robust process is organised and applied to develop the Algorithm and the DA MCO function assets.
- Prepare the detailed development planning for the DA MCO function assets
- Evaluate the performance assessment reports of the algorithm releases
- Translate the relevant market design needs into amendments of requirements or new requirements for the Algorithm and the IT systems.
- Provide an assessment of feasibility, costs and benefits of changes, design them to the level of functional specifications – in line with the strategic guidance provided by JSC – and ensure that the design phase follows the planning.
- Support the creation of viable release with the focus on the analytical and technical deliverables and market design needs.
- Provide the necessary market, technical and functional knowledge to other bodies and external parties.

MCSC PMO

(Items 1.1.10 and 1.2.1)

- The activities of this role focused on the facilitation of the MCSC meetings and the facilitation of the Integrated Coordination Team (ICT) which is responsible for the coordination of all deliverables across the various TFs such as:
 - › Preparation and facilitation of MCSC conference calls, including drafting meeting minutes and ensuring timely completion of agreed actions.
 - › Support the SDAC Co-chairs in day-to-day project management of SDAC.
 - › Preparation and moderation of weekly Integrated Coordination Team (ICT) calls and bi-annually strategy meetings. These meetings were held to coordinate dependencies and risks across the TFs, agree high-level planning, discuss overall strategy and prepare for MCSC meetings.
 - › Contract management and taking care of new party adherence.
 - › Single point of contact for request of MCSC members.

Central Settlement Entity Fees

(Item 1.1.22 and 1.2.8)

This role is performed by an external service provider, JAO. The following tasks are included in these Central Settlement Entity Fees:

- Budgeting and monitoring activities: JAO convenes the SDAC BMTF and is responsible for communicating, monitoring and managing the budget, together with the TSO and NEMO representatives in the BMTF.
- General PMO support of BMTF deliverables.
- Financial settlements for the SDAC Joint NEMOs and TSOs Common costs.
- Monthly and Quarterly documentation and reporting of the SDAC project expenses.
- Coordination role of the yearly CACM cost report.
- Providing support to the SDAC parties regarding financial issues: Making suggestions, proposing ways forward if deemed necessary.

Simulation Facility

(Items 1.1.1, 1.1.2, 1.1.3, 1.1.4, and 1.2.5)

The Simulation Facility is a web-based application in which the Algorithm is embedded, and which allows the simulation of market coupling scenarios based on Historical Data and/or User-defined Data, as well as the reporting on the Simulation Results.

The main costs involving the Simulation Facility which occurred in 2023 were the following:

- CPLEX licenses for N-Side (required for EUPHEMIA use).
- Maintenance and hosting of TRIMANE SDAC Technical Solution.
- EUPHEMIA release update and testing.
- Change requests and testing for MNA adaptation.
- SF task force meetings.
- Functional Support Facility Operational (FSFO) activity (support to SF users, Leader role).
- Quarterly remuneration of SDAC Technical Solution NEMOs for EUPHEMIA use.

Maintenance contracts

(Item 1.1.19 and 1.2.7)

These costs relate to non-operational recurring Hosting and Maintenance costs to support the SDAC technical solution. This cost is impacted by developments of the Common system. This cost mainly consists of continuous support of the IT systems, software licenses and security services.

Most of these services are provided by the third-party suppliers Unicorn and N-side.

1.3 The all NEMOs costs of establishing and amending the SDAC

The amount of 389,275 € consists of:

- NEMO Committee costs for establishing and amending the SDAC totalling 164,087 €
 - › This represents the 50 % of whole NEMO Committee costs totalling 328,174 €
- All NEMOs costs of establishing and amending the SDAC totalling 225,188 €

NEMO Committee cost is split equally between NEMO costs of establishing and amending the SDAC and establishing and amending the SIDC. In underlying cost databases and summary tables the total cost of NEMO Committee is presented. The split between SDAC and SIDC is reflected only in this report document.

For NEMO Committee costs the total amount (before the equal split between SDAC and SIDC applied) of 328,174 € consists of:

Table 6

Item	Related Task Force	Temporary activity	2023 costs (€)
1.3.1	NEMO Committee - chairman	NO	43,825
1.3.2	NEMO Committee - PMO	NO	98,169
1.3.3	Reporting and communication Task Force	NO	67,070
1.3.4	Technical Task Force	NO	37,289
1.3.5	Legal Task Force	NO	11,285
1.3.6	NEMO Committee - support	NO	26,008
1.3.7	Governance Task Force	YES	14,395
1.3.8	Cost Task Force	NO	20,132
1.3.9	Exceptional contingency	YES	10,000
	Total SUM		328,174

In 2023 the NEMO Committee (NC) continued in close cooperation with EC, ACER and TSOs fulfilling tasks set out in the CACM Regulation, MCO Plan and related methodologies. The priorities were to safeguard the operation of the Day-Ahead and Intraday market coupling especially after the turbulences on the energy markets observed in 2022, and preparatory tasks of extension of the markets to non-EU countries (Energy Community).

NEMO cooperation (Items 1.3.1, 1.3.2 and 1.3.6)

The NEMO Committee's (NC) priority was to assist the European Commission in preparation of the proposal for Electricity Market Reform and clarification of the Energy Community Contracting Parties regarding their intention of joining the SDAC and SIDC. NEMO Committee was heavily involved in clarification of the legislation that is needed to be implemented by the EnC Contracting Parties in order to maintain security of the operation as well as data protection of the Energy Markets and Market participants. Dedicated Joint Expert Team on Energy Community was established.

NC also welcomed a new NEMO - BRM – Bursa Romana de Marfuri - and was also clarifying potential Observership with Energy Community NEMOs (MEPX/BELEN).

NEMO-TSO cooperation

(Items 1.3.1, 1.3.2 and 1.3.6)

NEMOs and TSOs are continuing in close cooperation via Market Coupling Steering Committee and its task forces.

Methodologies (Item 1.3.4)

The NEMO Committee (NC) makes a regular check of the related methodologies and at the end of 2023 triggered a review of SDAC Product methodology.

NEMO Committee also held a public consultation related to the potential removal of the Second Auction in SDAC.

Communication and Stakeholders involvement (Item 1.3.3)

The NEMO Committee continued in proactive communication with the Stakeholders, is regularly publishing on its website quarterly summaries of its meeting minutes as well as public versions of contracts and operational procedures and other contents coming from SDAC and SIDC, including detailed reports on decoupling incidents.

The NEMO Committee remains active in relevant forums, such as CACM Pentilateral Coordination Group (PCG), MESC and EU Electricity Regulatory Forum.

NEMOs, TSOs and Market participants (via EFET and Eurelectric) also continue in close cooperation via the Market Coupling Consultative Group (MCCG), which informs Market Participants about ongoing works related to the design, development, implementation, and operation of SDAC and SIDC.

On 30 June, the NEMO Committee published the CACM report 2022 in cooperation with ENTSO-E, which was prepared under the MCSC governance and in compliance with CACM Regulation, Article 80.1. It was later updated also with a SDAC scalability study (new version published on 14 July 2023).

On 28 September, the 1st NEMO Committee Annual Conference was held on 20 September in Brussels, with the participation of Catharina Sikow-Magny, Director of Green Transition and Energy System Integration in the Directorate General for Energy, and Nicolás González Casares, Member of the European Parliament. The programme included a panel discussion related to the future of the Day-Ahead and Intraday electricity markets as well as a presentation of the CACM Annual Report.

NEMO Committee was also actively involved in the Drafting Committee of the Network Code on Demand Response and is also closely aligning its position with Europex.

- A rate of 925 €/MD was used for the internal resources of NEMOs.
- The external costs were included at costs without any surplus or commercial benefit for the contracting party.
- NEMO Committee costs (Items 1.3.1, 1.3.2 and 1.3.6) consists of costs of the Chairman of the NEMO Committee for the cost of external PMO support (costs of project management services provided by Indra Czech Republic s.r.o. which was acquired by CGI IT Czech Republic s.r.o. on 1 June 2023) and the Costs related to other supportive tasks, mainly related to reporting and communication to define, prepare and perform reporting according to the CACM Regulation.
- The external support for PMO services was selected based on a competitive tender finalised at the beginning of 2020.
- The Reporting and Communication TF (Item 1.33) is responsible for the NEMO Committee webpage, external communication, preparation of CACM reports and press releases of the NEMO Committee.
- The Technical TF (Item 1.3.4) was established as a merger of 3 TFs operating in 2017, namely the AI-Algorithm and product TF, DA Algorithm TF and ID Algorithm TF, in order to deal with all technical methodologies in a centralised approach under the CACM Regulation.
- The Legal TF (Item 1.3.5) is responsible for delivering the contractual framework in accordance with MCO Plan – especially the All NEMO Cooperation Agreement and coordination of work of legal TFs of NEMOs under SDAC and SIDC.
- The Governance Task Force (Item 1.3.7) was established in 2023 in order support proactively the discussions about future of the CACM Regulation and other governance related topics. Main activities were related to drafting and reviewing of MCO Integration Plan, CACM 2.0, consultations regarding the 2nd auction, EC market design, and providing support in the co-optimisation alignments.
- Cost TF (Item 1.3.8) is responsible for the budgeting, validating and reviewing of costs associated with the NEMO Committee and the preparation of a Cost Report according to CACM Regulation.

For All NEMOs costs of establishing and amending the SDAC the amount of 225,188 € consists of:

Table 7

Item	Category	Temporary activity	2023 costs (€)
1.3.11	PMO – General Support	NO	66,106
1.3.12	Support Tasks	NO	66,889
1.3.13	Leader Remuneration	NO	76,892
1.3.14	Facilities	NO	15,301
	Total SUM		225,188

- A rate of 925 €/MD was used for the internal resources of NEMOs.
- The external costs were included at cost without any surplus or commercial benefit for the contracting party.
- The external service provider in charge of development and maintenance of the Algorithm – N-SIDE SA – was selected based on a competitive tender prior to the entry into force of CACM.
- The external service provider in charge of development and maintenance of the PMB – Unicorn Systems a.s. – was selected based on a competitive tender prior to CACM’s entry into force.
- PMO – General Support (Item 1.3.11) costs – consist of the costs for the external support related to project management services provided by Indra Czech Republic s.r.o. (acquired by CGI IT Czech Republic s.r.o. on 1.6.2023) as of 6 May 2023.
- The external support for PMO services was selected based on a competitive tender.
- Leader Remuneration (Item 1.3.13) refers to the remuneration of the Legal TF, Procedures TF and Algorithm Working Group leadership provided by the internal resources of NEMOs.
- Support tasks (Item 1.3.12) refer to ad-hoc tasks performed for the benefit of all NEMOs such as preparation for Algorithm testing including the setup of internal tools or update of materials and documentation related to procedures. These tasks are provided internally by NEMOs.
- Facilities (Item 1.3.14) refer to costs of the ProjectPlace (document management system provided by Plan-view).

1.4 The all NEMOs costs of operating the SDAC

The amount of 570,767 € consists of:

Table 8

Item	Category	Temporary activity	2023 costs (€)
1.4.11	PMO – General Support	NO	33,351
1.4.12	Support Tasks	NO	0
1.4.13	Leader Remuneration	NO	86,469
1.4.14	Facilities	NO	172
1.4.15	Operation Fees	NO	450,775
	Total SUM		570,767

- A rate of 925 €/MD was used for the internal resources of NEMOs.
- The external costs were included at costs without any surplus or commercial benefit for the contracting party.

- The external service provider in charge of development and maintenance of the Algorithm – N-SIDE SA – was selected based on a competitive tender prior to the entry into force of CACM.
- The external service provider in charge of development and maintenance of the PMB – Unicorn Systems a.s. – was selected based on a competitive tender prior to CACM's entry into force.
- Leader Remuneration (Item 1.4.13) refers to the remuneration of the Procedures TF, Algorithm Working Group, Testing Working Group and Operational Committee (OPSCOM) leadership provided by the internal resources of NEMOs for the benefit of the operation of SDAC.
- Facilities (Item 1.4.14) refers to usage of conferencing tool used by NEMOs for SDAC.
- PMO – General Support (Item 1.4.11) costs consist of the costs of the external support related to project management services provided by Indra Czech Republic s.r.o. (acquired by CGI IT Czech Republic s.r.o. on 1.6.2023) as of 6 May 2020.
- Operation Fees (Item 1.4.15) refers to day-to-day operation of the SDAC assets.
- The external support for PMO services was selected based on a competitive tender prior to CACM's entry into force.

1.5 The all TSO-only costs of establishing and amending the SDAC

The amount of 186,622 € consists of:

Table 9

Item	Category	Temporary activity	2023 costs (€)
1.5.1	TSO Legal TF Support	NO	44,814
1.5.2	TSO MCSC PMO	NO	44,635
1.5.3	TSO Chair	NO	30,988
1.5.4	Tendering costs for TSO MCSC	NO	12,500
1.5.5	Central Settlement Entity Fees	NO	24,502
1.5.6	Contingency	NO	8,064
1.5.7	TSO MCSC Masterclasses	NO	21,119
	Total SUM		186,622

- The TSOs-only costs for establishing and amending the SDAC consist of external legal Support to the TCDA Agreement (Bernard Energy), PMO costs of the TSO MCSC (E-bridge consulting until April and Magnus for the remainder of the year), TSO Chair cost and the Central Settlement Entity (JAO).
- The external legal services have been provided based on the direct assignment, as a continuity of the selected service providers, by the SDAC TSOs MCSC. There has been a significant increase in the volume of incoming requests.
- Tendering costs for TSO MCSC (Item 1.5.4) refer to the expenses related to the public tender that was launched by the MCSC for the Single PMO function under TSO MCSC and MCSC. This cost was evenly split between SDAC and SIDC.
- The cost-sharing methodology for the 2023 TSO-only Actual costs is based on the CACM sharing keys implemented in the TSO Cooperation Agreement for TCDA.

1.6 The all TSO-only costs of operating the SDAC

The amount of 134,531 € consists of:

Table 10

Item	Category	Temporary activity	2023 costs (€)
1.6.1	TSO MCSC Secretary	NO	51,722
1.6.2	TSO Chair	NO	30,988
1.6.3	Central Settlement Entity Fees	NO	24,502
1.6.4	Contingency	NO	6,200
1.6.5	TSO MCSC Masterclasses	NO	21,119
	Total SUM		134,531

- The TSOs-only costs for operating the SDAC consist of PMO costs of the TSO MCSC (E-bridge consulting until April and Magnus for the remainder of the year), TSO Chair cost and the Central Settlement Entity (JAO).
- The cost-sharing methodology for the 2023 TSO-only actual costs is based on the CACM sharing keys implemented in the TSO Cooperation Agreement for TCDA, which entered into force as of 28 March 2019.

TSO MCSC PMO (Items 1.5.2 and 1.6.1)

The activities of this role focus on the facilitation of TSO-only Market Coupling Steering Committee meetings:

- Preparation and facilitation of the TSO MCSC conference calls, including drafting meeting minutes and ensuring the timely completion of agreed actions
- Support the TSO Co-chair in the day-to-day project management of SDAC
- Contract management and taking care of new party adherence
- Single point of contact for request of TSOs MCSC members

Central Settlement Entity Fees

(Items 1.5.5 and 1.6.3)

This role is performed by an external service provider, JAO. The following tasks are included in these Central Settlement Entity Fees:

- Budgeting and monitoring activities: JAO convenes the SDAC BMTF and is responsible for communicating, monitoring and managing the budget, together with the TSO representatives in the TSO BMTF.
- General PMO support of BMTF deliverables
- Financial settlements for the SDAC TSOs only Common costs.
- Monthly and Quarterly documentation and reporting of the SDAC project expenses.
- Providing support to the SDAC parties regarding financial issues: Making suggestions, proposing ways forward if deemed necessary.

2 Actual SIDC costs of 2023

2.1 The joint all TSOs and all NEMOs costs of establishing and amending the SIDC

The amount of 6,437,334 € consists of:

Table 11

Item	Category	Temporary activity	2023 costs (€)
2.1.1	Aggregated PM costs	NO	1,395,505
2.1.2	Technical support tools (PP, ReQTest)	NO	15,000
2.1.3	DBAG costs - development + CRs	NO	1,908,430
2.1.4	DBAG costs - hosting/maintenance ongoing	NO	1,841,359
2.1.5	IDA Implementation PCR side + PMO	YES	1,273,110
2.1.6	REMIT & H&M	YES	3,928
	Total SUM		6,437,334

The key drivers behind the 2023 costs were:

- Significant efforts spent on the further developments and testing of the IDA implementation
- Further developments of the SIDC technical solution (DBAG)
- Recurring hosting and maintenance costs of the SIDC technical solution (DBAG)

A rate of 925 €/MD was used for internal resources of NEMOs and TSOs

The cost sharing methodology for the 2023 Joint NEMOs and TSOs costs is based on the capacity allocation and congestion management (CACM) sharing keys implemented in the IDOA

Hosting & Maintenance of the SIDC technical solution and further development of the SIDC technical solution (Deutsche Börse AG [DBAG] costs) (Items 2.1.4)

The cost consists of recurring Hosting and Maintenance costs and the cost for new functionality or services put into effect. New functionality might also impact the recurring Hosting & Maintenance cost.

Recurring Hosting & Maintenance cost: a total sum of 3,640,903 €, of which 1,841,359 € represent the costs of Establishing and Amending the SIDC and 1,799,544 € represents Operating costs. The formula of dividing the cost between the two categories is agreed by the SIDC parties in the IDOA.

The cost consists of elements such as:

- Hosting of the solution in two data centres
- Cost for the security services
- Provision of the solution's environments (productions, production-like, test environments) and the infrastructure
- Provision of the continuous IT support and operation
- Availability of the failover mechanism
- Software licences
- Corrective and preventive software corrections
- Adaptive and perfective software enhancements

Every added functionality can have an impact on ongoing Hosting & Maintenance costs depending on its scale and complexity

Development of SIDC technical solution and IDA implementation (Items 2.1.4 and 2.1.6)

New functionality or service:

- ASR030 – Analysis of RTES5 Slice B: Analysis on the increase of the system boundaries for Continuous Trading.
- ASR031 – Supporting DBAG services for IDA Functional Integration Testing
- CR106 – Final delivery of release 4.0, which mainly contains functional changes related to the implementation of IDA in the XBID system.
 - › General implementation of Intraday Auctions (IDA)
 - › Required performance improvements for IDA, such as:
 - Asynchronous persister
 - ComTrader for asynchronous persister
 - Routing key change
 - API clean-up
 - › Update of test clients for IDA
 - › Enhancement of Contractual Halt functionality with selection of direction(s) (XBID-4970)
 - › Change of Auction.type attribute in OCC files (XBID-6086)
 - › Automatic IDA cancellation – time parameter configurable at system setting USM998 (XBID-6272)
 - › FIXIT of JIRAs from previous releases, IMTs
 - › Third party software upgrades
- CR107 – DBAG's MPLS for CIP: Secure network between the XBID system and CIP
- CR109 – Enabling additional DST capabilities
- CR111 – Implementation of the Minimum Value Product (MVP) for FlowBased
- CR113 – Mixed capacity resolution to VDA: Changes which will allow users to configure different contract resolutions, capacity resolutions and OTU's on interconnectors connected to the very same VDA
- CR115 - implemented changes which will enable Data Intermediary (Regional Admin acting on behalf of TSOs) to publish capacity using bulk files and at the same time will enable local TSOs to publish capacity only on their interconnectors, as a backup for Data Intermediary
- CR116 – IDA 3 – Change of OCA file and the scheduler time triggers

IDA Testing Group (IDA TG) (part of Item 2.1.1 and Item 2.2.1)

IDATG was initiated in 2022 with 2 major points of focus.

IDA Testing: The main goal of the task was to prepare initial planning for IDA FITs and SITs testing

- There was a limited elaboration on the task in 2022, basic principles of Functional Integration Test and Simulation Integration Test were discussed, and important issues, which were subject of further processing, were identified.

IDA CIP Functional Test: The task represented the major activity of IDATG in 2022. As the IDA CIP was a brand-new module, the preparation of the testing was done from scratch:

- Preparatory activities: from 2021/06 until 2022/10 – Preparation of the test scenarios, test case, preparation of the test data, setup of the testing tools and testing environment, overall governance of the testing
- IDA CIP functional Testing – Phase 1: from 2022/10 until 2023/02

Co-chaired by NEMO Project Manager and TSO representative of Elia (PMO provided by the same representative)

MSD (part of Item 2.1.1 and Item 2.2.1)

MSD manages the technical/design aspects of the joint project. This includes:

- the development of Change Requests which have an impact on the IT solution,
- alignment on the changes specifications with DBAG,
- technical prioritisation of the changes and review of technical documents,
- assessment of faults,
- clarifications of points raised by the testing experts,
- assessment and validations of major configuration changes.

Chaired by TSO representative from E-Bridge and NEMO representative from NordPool (PMO provided by the same representative)

QA&RM (part of item 2.1.1. and Item 2.2.1)

- QA&RM represents several types of activities focused on Quality Assurance and Release Management. In practicality it means:
 - › translation of the business strategic needs in the project planning, covering integration with the working level and system provider

- › establishment and management of the processes which monitor the development of new releases, including resolution of the situations causing a deviation from the project plan and planned quality
- › establishment and management of the processes associated with the geographical extension of SIDC cooperation

2.2 The joint all TSOs and all NEMOs costs of operating the SIDC

The amount of 2,931,965 € consists of:

Table 12

Item	Category	Temporary activity	2023 costs (€)
2.2.1	Aggregated PM costs	NO	493,725
2.2.2	MPLS costs	NO	25,068
2.2.3	Technical support tools (PP, ReQTest)	NO	16,550
2.2.4	DBAG costs - hosting/maintenance	NO	1,799,544
2.2.5	IC SPOC (ICCC)	NO	589,618
2.2.6	REMIT H&M	YES	7,548
	Total SUM		2,931,965

- A rate of 925 €/MD was used for internal resources of NEMOs and TSOs
- The cost sharing methodology for the 2023 Joint NEMOs and TSOs costs is based on the capacity allocation and congestion management (CACM) sharing keys implemented in the IDOA

Incident Committee single point of contact (IC SPOC) (Item 2.2.7)

The importance of the IC SPOC is to ensure the necessary coordination of all parties during a critical incident. With the involvement of so many parties in a joint project such as SIDC, it is crucial to have a dedicated individual to ensure the necessary actions are taken and ensure the cooperation of vital parties. There are high costs associated with this as NEMOs providing this service must employ individuals 24/7 for the 14 days on duty as well as the following 14 days on backup. These individuals performing the IC SPOC role must also be high-level, well-trained operators, capable of handling such a wide-scale incident.

This is being performed by the operational NEMOs based on a rotational scheme

Operational Committee (OPSCOM) (part of Item 2.2.1)

The key role of OPSCOM is to ensure the continued stable operation of the SIDC system. This is achieved by the standardised operating procedures created, which are continually improved and executed by OPSCOM members internally. Another vital task of OPSCOM is the management production incidents, which members investigate and review to find solutions to be tested and deployed. OPSCOM works to develop operational change requests and enhancements to be implemented in production. In addition, it is under OPSCOM's purview to organise, test and coordinate system maintenances, new version releases and go-lives.

Chaired by a NEMO representative on a rotational basis

Costs of MPLS (Item 2.2.2)

refers to the costs of connection of the central SIDC system into the MPLS network of NEMOs (provided by COLT) and TSOs. Service provided by Orange.

2.3 The all NEMOs costs of establishing and amending the SIDC

The amount of 316,879 € consists of:

- NEMO Committee costs for establishing and amending the SIDC totalling 164,087 €
 - › This represents the 50 % of whole NEMO Committee costs totalling 328,174 €
- All NEMOs costs of establishing and amending the SIDC totalling 152,792 €

NEMO Committee cost is split equally between NEMO costs of establishing and amending the SDAC and establishing and amending the SIDC. In underlying cost databases and summary tables the total cost of NEMO Committee is presented. The split between SDAC and SIDC is reflected only in this report document.

For NEMO Committee costs the total amount (before the equal split between SDAC and SIDC applied) of 328,174 € consists of:

Table 13

Item	Related Task Force	Temporary activity	2023 costs (€)
1.3.1	NEMO Committee – chairman	NO	43,825
1.3.2	NEMO Committee – PMO	NO	98,169
1.3.3	Reporting and communication Task Force	NO	67,070
1.3.4	Technical Task Force	NO	37,289
1.3.5	Legal Task Force	NO	11,285
1.3.6	NEMO Committee – support	NO	26,008
1.3.7	Governance Task Force	NO	14,395
1.3.8	Cost Task Force	NO	20,132
1.3.9	Exceptional contingency	YES	10,000
	Total SUM		328,174

The detailed information related to the NEMO Committee is available in chapter 1.3 under the all NEMOs costs of establishing and amending the SDAC and is not duplicated here.

For All NEMOs costs of establishing and amending the SIDC the amount of 152,792 € consists of:

Table 14

Item	Category	Temporary activity	2023 costs (€)
2.3.1	Project Management (PM)	NO	39,322
2.3.2	Expenses	NO	0
2.3.3	Technical WG (TWG)	NO	42,880
2.3.4	Legal TF (LTF)	NO	26,469
2.3.5	Procedures WG (PWG)	NO	13,747
2.3.6	Cost Management WG (CMG)	NO	30,374
	Total SUM		152,792

- A rate of 925 €/MD was used for the internal resources of NEMOs.
- The external costs were included at cost without any surplus or commercial benefit for the contracting party.
- The resources for the NEMOs-only part of the SIDC project were secured through external providers support by Indra Czech Republic s.r.o. (acquired by CGI IT Czech Republic s.r.o. on 1.6.2023) for support tasks of PM (Item 2c.1), PWG (Item 2.3.5), CMG (Item 2.3.6) and TWG (Item 2.3.3) and by MODO Advocaten for LTF (Item 2.3.4) and by SATOCON for PM (Item 2.3.1).
- The external support for PMO services was selected based on a competitive tender.
- The external support for LTF services was selected based on a direct assignment prior to CACM's entry into force.
- Project Management (Item 2.3.1) is responsible for the project management of NEMO-only bodies under the SIDC project.
- Expenses (Item 2.3.2) relate mostly to the costs of traveling/meeting place and office management (e. g., postage).
- The TWG (Item 2.3.3) is responsible for the review of technical and functional specification of the SIDC MCO Function System.
- The LTF (Item 2.3.4) is responsible for the delivery of the contractual framework required by NEMOs to establish and operate the SIDC.
- The PWG (Item 2.3.5) is responsible for establishing the NEMOs only procedures of SIDC (Intraday continuous and Intraday auctions procedures), NEMOs activities (drafting and review) related to joint NEMOs and TSOs procedures and for organising the NEMO operational training.
- The CMG (Item 2.3.6) is responsible for the budgeting, validating and reviewing of NEMO-only costs and for validating and reviewing of the joint all TSOs and all NEMOs costs for services contractually linked to NEMOs. CMG is also responsible for preparing and validating the resettlement quarterly reports.

For PMO activities (NEMO ID SC)

(Items 2.3.1 and 2.4.1)

PM/PMO represents several types of activities supporting NEMOs in the following project bodies: NEMO SIDC steering committee, Market Coupling steering committee, JSC with DBAG, NEMO Committee, SIDC Integration and Coordination Task Force and Integration and Coordination Task Force with NEMO Committee.

Regarding the scope, it focuses on daily activities related to the communication, agendas, minutes, reporting, preparation of the inputs for decision making processes, etc. And on delivery-oriented activities as negotiation with service providers, contracts and amendment to contracts, strategic planning, etc.

The main drivers associated with costs attributed in 2023 were mainly services belonging to:

- Negotiation and implementation of XBID Release 4.0 and Release 4.1 as well as monitoring of development and testing progress.
- Negotiation of ASRs/CRs and management of contractual changes
- Clarifications in respect of the implementation of the IDA including negotiation & tracking of CRs
- Management of the process and activities for the 5th wave go live
- NEMO ID SC alignment on IDA related topics
- Regular interaction with NEMO Committee, tasks stemming from the integration, preparations of the process supporting higher level of integration (MCSC)
- Follow up of business requirements related to the REMIT reporting including interaction with the service provider
- Regular clarifications on the project status with NRAs via JET platform
- Resolution of different escalations from working level.

NEMO Central Admin (Item 2.4.7)

The importance of the NEMO Central Admin is to ensure that the necessary actions can be triggered on behalf of NEMOs during a critical incident or planned maintenance. With the involvement of so many parties in a joint project such as SIDC, it is crucial to have a dedicated individual to ensure the necessary actions are taken and ensure the co-operation of vital parties. There are high costs associated

with this as the NEMOs providing this service must employ individuals 24/7 for the 14 days on duty as well as the following 14 days on backup. These individuals performing the NEMO Central Admin role must also be high-level, well-trained operators, capable of handling an action with such a wide-scale impact.

TWG, PWG (Items 2.3.3, 2.3.5, 2.4.3 and 2.4.5)

List of activities from performed in 2023:

• TWG:

- › ACER REMIT Reporting – solution evolution (CRs), clarification of findings from operations, impact analysis of IDA
- › IDA CIP failover tests, IDA Conceptual Tests result analysis
- › ACER reporting – provision of report data twice a year
- › Performance analysis (RTS) and survey for system boundaries
- › CACM Annual report – NEMO indicator data preparation, simulation and data provision for Scalability analysis
- › XBID R4.0, R4.1 test support
- › SIDC impact assessment for EnC
- › New AlarmTilt alerts
- › Stakeholders reporting: NEMO indicators, data preparation and provision to OPSCOM/AM TF twice a year
- › Monthly SLA Performance monitoring, analysis and managerial summaries preparation, evolution of the reports
- › BBPs/SMs review for XBID R4.0, R4.2 (NEMO part)
- › XBID R4.2 Performance tests preparation, execution with LTSs connected, results and reports analysis
- › Support requests of NEMO ID SC, NEMO OPSCOM, OPSCOM, QARM, XTG, MSD
- › Impact of RTS4A performance improvements for R4.0
- › PMI log analysis tool – maintenance, CRs
- › PMI log analysis tool – Mini auctions statistics CR: requirements definition, testing of functionality

• PWG:

- › Drafting of NEMO Intraday auctions procedures
- › Support and organisation of the recurring training of operators
- › Amendments and enhancement of procedures according to findings from operations

2.4 The all NEMOs costs of operating the SIDC

The amount of 847,695 € consists of:

Table 15

Item	Category	Temporary activity	2023 costs (€)
2.4.1	Project Management (PM)	NO	22
2.4.2	Expenses	NO	56,103
2.4.3	Technical WG (TWG)	NO	42,816
2.4.4	Legal TF (LTF)	NO	8,823
2.4.5	Procedures WG (PWG)	NO	3,644
2.4.6	Cost Management WG (CMG)	NO	4,801
2.4.7	Central Administrator	NO	730,000
2.4.8	NEMO OPSCOM	NO	1,486
	Total SUM		847,695

- A rate of 925 €/MD was used for the internal resources of NEMOs.
- The external costs were included at cost without any surplus or commercial benefit for the contracting party.
- The resources for the NEMOs-only part of the SIDC project were secured through external providers support by Indra Czech Republic s.r.o. (acquired by CGI IT Czech Republic s.r.o. on 1.6.2023) for support tasks of PM (Item 2.4.1), PWG (Item 2.4.5), CMG (Item 2.4.6) and TWG (Item 2.4.3) and by MODO Advocaten for LTF (Item 2.4.4).
- The external support for PMO services was selected based on a competitive tender.
- The external support for LTF services was selected based on a direct assignment prior to CACM's entry into force.
- Project Management (Item 2.4.1) is responsible for the project management of NEMOs-only bodies under the SIDC project.
- Expenses (Item 2.4.2) relate to the costs of Hosting and Maintenance of the PMI log analysis tool.
- The TWG (Item 2.4.3) is responsible for the review of the technical and functional specification of the SIDC MCO Function System.
- The LTF (Item 2.4.4) is responsible for the delivery of the contractual framework required by NEMOs to establish and operate the SIDC.
- The PWG (Item 2.4.5) is responsible for establishing the NEMOs-only procedures of SIDC (Intraday continuous and Intraday auctions procedures), NEMOs activities (drafting and review) related to joint NEMOs and TSOs procedures and for organizing the NEMO operational training.
- The CMG (Item 2.3.6) is responsible for the budgeting, validating and reviewing of NEMO-only costs and for validating and reviewing the joint all TSOs and all NEMOs costs for services contractually linked to NEMOs. CMG is also responsible for preparing and validating the resettlement quarterly reports.
- The Central Administrator (Item 2.3.7) is responsible for the operation of the central system (XBID Solution) and for the performance of all Central Administrator's procedures in 24/7 regime.
- The rate for the Central Administrator role was set up to 2,000 €/24 hours.
- The Central Administrator role rotates among NEMOs who volunteered to perform this role.

2.5 The all TSOs costs of establishing and amending the SIDC

The amount of 715,780 € consists of:

Table 16

Item	Category	Temporary activity	2023 costs (€)
2.5.1	PM costs	NO	132,247
2.5.2	TSO MCSC PMO	NO	48,170
2.5.3	ECP/MPLS	NO	37,713
2.5.4	External Testers	YES	403,533
2.5.5	Tendering costs for TSO MCSC	NO	12,500
2.5.6	Central Settlement Entity Fees	NO	49,938
2.5.7	Masterclasses	NO	31,679
	Total SUM		715,780

A rate of 925 €/MD was used for the internal resources of TSOs.

Costs for project management (Item 2.5.1 and 2.5.2)

Under this category, 90 % of the costs related to the following roles related to the project management for the SIDC project are included:

- TSO chair (50 Hertz)
- Legal support (Bernard Energy)
- General PMO support (Magnus)

ECP/MPLS (Item 2.5.3)

Under this category 50 % of the costs for providing and maintaining the ECP/MPLS communication channel are summarised. The following service providers contribute to these activities:

- Application support provider: Unicorn;
- Primary hosting provider: Amprion;
- Secondary hosting provider: Coreso;
- General administrator and change control administrator: JAO
- External Testers (Item 2.5.4) were performed by service provider SYSQA/Heeyoo, who tested new releases for the SIDC solution on behalf of all TSOs.
- Tendering costs for TSO MCSC (Item 2.5.5) refer to the expenses related to the public tender that was launched by the MCSC for the Single PMO function under TSO MCSC and MCSC. This cost was evenly split between SDAC and SIDC.

2.6 The all TSOs costs of operating the SIDC

The amount of 340,023 € consists of:

Table 17

Item	Category	Temporary activity	2023 costs (€)
2.6.1	PM costs	No	13,272
2.6.2	TSO MCSC PMO	No	6,012
2.6.3	ECP/MPLS	No	86,000
2.6.4	Central Admin	No	152,149
2.6.5	ECP Bridge	No	22,092
2.6.6	Central Settlement Entity Fees	No	49,938
2.6.7	Masterclasses	No	10,560
	Total SUM		340,023

- For costs for project management (Item 2.6.1) under this category, the remaining 10 % of the costs related to the project management for the SIDC project are included. See cost Item 2.5.1 under chapter 2.5.
- The remaining 50 % of cost Item 2.5.2 under chapter 2.5 is reported under cost item 2.6.2.
- Central Admin (Item 2.6.4) covers efforts related to the configuration of the CCM and SM part of the operational environments. It also covers the 24/7 general availability and on-call service fee. This Central Admin role is provided by JAO.
- ECP Bridge (Item 2.6.5) includes the fee for providing an ECP bridge between XBID ECP and the ENTSO-E Transparency Platform ECP to automatically report TSO transparency data (for example available capacity) from the XBID Solution to the ENTSO-E Transparency Platform.

3 Forecast of SDAC costs for 2024

3.1 The joint all TSOs and all NEMOs forecast of establishing and amending the SDAC

The amount of 5,290,374 € consists of:

Table 18

Item	Category	Temporary activity	Forecast 2024 (€)
3.1.1	SF Knowledge Sharing and Training	NO	10,000
3.1.2	CR Contingency	NO	35,000
3.1.3	Adaption for EUPHEMIA releases	NO	52,000
3.1.4	Adding EUPHEMIA instances	NO	23,548
3.1.5	New features' development	NO	50,000
3.1.6	MCSC SIM TF Workshops	NO	25,000
3.1.7	New Simulation Facility placeholder	YES	400,000
3.1.8	New Simulation Facility - Tender, Procurement and testing support	YES	75,000
3.1.9	SIM TF Conveners	NO	177,600
3.1.10	SIM TF PMO	NO	71,300
3.1.11	MSD TF budget for support of TF members	NO	11,340
3.1.12	PCR R&D (MSD R&D & Algorithm Dev & NEMO expert support)	NO	510,600
3.1.13	MSD Conveners	NO	230,000
3.1.14	MSD PMO	NO	152,843
3.1.15	MSD TF general contingency	NO	50,000
3.1.16	15 min MTU PCR R&D + Diagnosis	YES	33,855
3.1.17	Dedicated budget on MSD Deliverables	NO	150,000
3.1.18	Co-optimisation roadmap study	YES	150,000
3.1.19	MCSC PMO (Previously MCSC Secretary (ES))	NO	61,941
3.1.20	Meeting Arrangements (EA)	NO	32,000
3.1.21	MCCG Conveners	NO	26,750
3.1.22	QARM Conveners	NO	192,866
3.1.23	QARM PMO	NO	96,248
3.1.24	Communication TF Leader (ES)	NO	27,813
3.1.25	Legal TF Conveners (ES)	NO	53,505
3.1.26	PCR EUPHEMIA Releases	NO	193,011
3.1.27	PCR Leader Remuneration (ES)	NO	133,182
3.1.28	PCR PMB Releases	NO	578,388
3.1.29	PCR Support Tasks	NO	43,882
3.1.30	Maintenance contracts (ES)	NO	861,391
3.1.31	DisCo daily fee	NO	107,330
3.1.32	SDAC IT tools (previously called Project Place Users)	NO	5,000
3.1.33	Central Settlement Entity Fees (ES)	NO	87,413
3.1.34	Fee of 3,5 % for prefinancing DAOA related expenses	YES	13,781
3.1.35	Contingency for non-confirmed Budget Items in 2024	YES	467,790
3.1.36	Contingency (SDAC Joint Establishment costs)	NO	100,000
	Total SUM		5,290,374

The forecast of 2024 establishing and amending costs was calculated based on the Joint NEMOs and TSOs SDAC costs in 2023.

The total of the 2024 forecast was increased by 1,906,253 € compared to the 2023 actuals. The main drivers behind this increase are:

- A placeholder for the possibility of a new Simulation Facility (Items 3.1.7 and 3.1.8).
- The Contingency for non-confirmed Budget Items in 2024 (Item 3.1.35).
- The QARM costs (Items 3.1.22 and 3.1.23).
- The Dedicated budget on MSD Deliverables and Co-optimization roadmap study (Items 3.1.17 and 3.1.18).

3.2 The joint all TSOs and all NEMOs forecast of operating the SDAC

The amount of 1,325,972 € consists of:

Table 19

Item	Category	Temporary activity	Forecast 2024 (€)
3.2.1	MCSC PMO (previously MCSC Secretary (OP))	NO	61,941
3.2.2	Meeting Arrangements	NO	32,000
3.2.3	Communication TF Leader (OP)	NO	8,438
3.2.4	Legal TF Conveners (OP)	NO	17,835
3.2.5	Hosting and maintenance costs - Current SF Tool	YES	79,200
3.2.6	Hosting and maintenance costs - New SF Tool	NO	44,100
3.2.7	Remuneration PCR PXs	NO	25,000
3.2.8	Functional support (FSFO + calls + leader role)	NO	111,000
3.2.9	OPSCOM Chairs + Procedures spoc	NO	109,930
3.2.10	OPSOM PMO	NO	91,464
3.2.11	PCR Leader Remuneration (OP)	NO	2,100
3.2.12	Maintenance contracts (OP)	NO	520,606
3.2.13	DisCo daily fee	NO	44,341
3.2.14	Central Settlement Entity Fees (OP)	NO	87,413
3.2.15	Fee of 3,5 % for prefinancing DAOA related expenses	YES	13,781
3.2.16	Contingency for nonconfirmed Budget Items in 2024	YES	26,825
3.2.17	Contingency (SDAC Joint Operational costs)	NO	50,000
	Total SUM		1,325,972

The forecast of 2024 operating costs was calculated based on the Joint NEMOs and TSOs SDAC costs in 2023.

The total of the 2024 forecast was increased by 366,689 € compared to the 2023 actuals. The main driver behind this increase is:

- The Maintenance Contracts cost (Item 3.2.12).

3.3 The all NEMOs forecast of establishing and amending the SDAC

The amount of 599,628 € consists of:

- NEMO Committee costs for establishing and amending the SDAC totalling 327,429 €
 - › This represents the 50 % of whole NEMO Committee costs totalling 654,859 €
- All NEMOs costs of establishing and amending the SDAC totalling 272,199 €

NEMO Committee cost is split equally between NEMO costs of establishing and amending the SDAC and establishing and amending the SIDC. In underlying cost databases and summary tables the total cost of NEMO Committee is presented. The split between SDAC and SIDC is reflected only in this report document.

For NEMO Committee costs the total amount (before the equal split between SDAC and SIDC applied) of 654,859 € consists of:

Table 20

Item	Category	Temporary activity	Forecast 2024 (€)
3.3.1	NEMO Committee - chairman	NO	89,925
3.3.2	NEMO Committee - PMO	NO	126,587
3.3.3	Reporting and communication Task Force	NO	104,500
3.3.4	Technical Task Force	NO	99,825
3.3.5	Legal Task Force	NO	14,850
3.3.6	NEMO Committee - support	NO	108,400
3.3.7	Governance Task Force	NO	70,400
3.3.8	Cost Task Force	NO	25,371
3.3.9	Exceptional contingency	YES	15,000
	Total SUM		654,859

The total of the 2024 forecast was increased by 326,685 € compared to the 2023 actuals. The main drivers behind this increase are:

- observed increases in various items are due to the estimations based on actual costs in the middle of 2023, when the forecast was prepared.
- agreed increase of the standard rate for internal resources of NEMOs and TSOs. This rate was agreed to increase in 2024 from 925 €/MD to 1000 €/MD.
- NEMO Committee – Chairman (Item 3.3.1) budget is increased accordingly to observed and expected frequency and duration of recurring meetings which NC Chairman has to participate at. Other drivers are activities related to CACM 2.0 and MCO Integration Plan.
- Reporting and Communication Task Force (Item 3.3.3) budget is increased due to more proactive communication and additional reporting requirements. Expense

costs forecasted for more advanced website and planning of physical meetings (e.g. Seminar on CACM Annual report) are reflected also under NEMO Committee - support (Item 3.3.6).

- Technical Task Force (Item 3.3.4) budget is increased due to the activities related to the update of the methodologies, co-optimization, 15 min resolution implementation on SDAC, IDA and CACM 2.0.
- Governance Task Force (Item 3.3.7) budget is increased due to activities related to CACM 2.0 negotiation developments, TCM, closer cooperation with other NEMO working groups and committees and to address the requests from MCSC Gov TF.
- The exceptional contingency of 15 K € is included to cover unexpected tasks in 2024, however its usage must be first approved by the NEMO Committee and in a standard situation it is not expected to be used.

For All NEMOs costs of establishing and amending the SDAC the amount of 272,199 € consists of:

Table 21

Item	Category	Temporary activity	Forecast 2024 (€)
3.3.11	PMO – General Support	NO	86,509
3.3.12	Support tasks	NO	100,275
3.3.13	Leader Remuneration Fee	NO	70,127
3.3.14	Facilities	NO	15,288
	Total SUM		272,199

- Observed increases in various items are due to the estimations based on actual costs in middle of 2023 when the forecast was prepared.
- Other reason is the agreed increase of the standard rate for internal resources of NEMOs and TSOs. This rate was agreed to increase in 2024 from 925 €/MD to 1000 €/MD.

3.4 The all NEMOs forecast of operating the SDAC

The amount of 608,207 € consists of:

Table 22

Item	Category	Temporary activity	Forecast 2024 (€)
3.4.11	PMO – General Support	NO	36,590
3.4.12	Support tasks	NO	25,776
3.4.13	Leader Remuneration	NO	93,631
3.4.14	Facilities	NO	200
3.4.15	Operation Fees	NO	452,010
	Total SUM		608,207

- Observed increases in various items are due to the estimations based on actual costs in middle of 2023 when the forecast was prepared.
- Other reason is the agreed increase of the standard rate for internal resources of NEMOs and TSOs. This rate was agreed to increase in 2024 from 925 €/MD to 1000 €/MD.

3.5 The all TSOs forecast of establishing and amending the SDAC

The amount of 322,417 € consists of:

Table 23

Item	Category	Temporary activity	Forecast 2024 (€)
3.5.1	TSO LTF	NO	19,688
3.5.2	TSO MCSC PMO	NO	27,031
3.5.3	TSO Chair	NO	37,500
3.5.4	Tendering costs for TSO MCSC	YES	12,500
3.5.5	Central Settlement Entity Fees	NO	29,138
3.5.6	Contingency	NO	60,000
3.5.7	TSO MCSC Masterclasses	NO	25,000
3.5.8	TSO MCSC COM TF	NO	7,560
3.5.9	TSO Do'ers	YES	104,000
	Total SUM		322,417

The forecast of 2024 establishing and amending costs was calculated based on the TSO only SDAC costs in 2023.

The total of the 2024 forecast was increased by 135,795 € compared to the 2023 actuals. The main drivers behind this increase are:

- Introduction of TSO MCSC Masterclasses (Item 3.5.7), TSO MCSC COM TF (Item 3.5.8) and TSO Do'ers (Item 3.5.9) remuneration.
- Slight increase of efforts expected from the TSO Legal TF (Item 3.5.1) and from the Central Settlement Entity Fees (Item 3.5.5).
- Cost items 3.5.2, 3.5.4, 3.5.5, 3.5.7 and 3.5.8 have been equally split between the categorizations establishing and amending the SDAC and operating the SDAC.

3.6 The all TSOs forecast of operating the SDAC

The amount of 146,229 € consist of:

Table 24

Item	Category	Temporary activity	Forecast 2024 (€)
3.6.1	TSO MCSC PMO	NO	27,031
3.6.2	TSO Chair	NO	37,500
3.6.3	Central Settlement Entity Fees	NO	29,138
3.6.4	Contingency	NO	20,000
3.6.5	TSO MCSC Masterclasses	NO	25,000
3.6.6	TSO MCSC COM TF	NO	7,560
	Total SUM		146,229

The forecast of 2024 operating costs was calculated based on the TSO only SDAC costs in 2023.

The total of the 2024 forecast was increased by 11,698 € compared to the 2023 actuals.

The main drivers behind this increase are:

- Introduction TSO MCSC COM TF (Item 3.6.6) remuneration
- Slight increase of efforts expected from the Central Settlement Entity Fees (Item 3.6.3) and TSO MCSC Masterclasses (Item 3.6.5).
- Cost items 3.6.1, 3.6.2, 3.6.3, 3.6.5 and 3.6.6 have been equally split between the categorisations establishing and amending the SDAC and operating the SDAC.

4 Forecast of SIDC costs for 2024

4.1 The joint all TSOs and all NEMOs forecast of establishing and amending the SIDC

The amount of 7,349,348 € consists of:

Table 25

Item	Category	Temporary activity	Forecast 2024 (€)
4.1.1	MCSC-PMO (EA)	NO	61,940
4.1.2	Communication TF Conveners (EA)	NO	27,812
4.1.3	Legal TF Conveners (EA)	NO	53,504
4.1.4	MSD/IDA Conveners	NO	403,248
4.1.5	MSD/IDA PMO	YES	50,948
4.1.6	OTF Convener	NO	19,560
4.1.7	OTF PMO	NO	27,928
4.1.8	QARM Chairs	NO	293,500
4.1.9	QARM PMO	NO	52,476
4.1.10	IDA TG PMO	YES	35,928
4.1.11	XTG Convener	NO	381,000
4.1.12	XTG PMO	NO	52,964
4.1.13	Meeting Arrangements (EA)	NO	32,000
4.1.14	MSD TF budget for support of TF members	NO	4,860
4.1.15	PCR R&D (MSD R&D & Algorithm Dev & NEMO expert support)	NO	218,828
4.1.16	15 min MTU PCR R&D + Diagnosis	YES	33,856
4.1.17	Technical support tools (PP, ReQTest)	NO	33,880
4.1.18	MCCG Conveners	NO	26,752
4.1.19	DBAG costs – development + CRs	NO	2,300,000
4.1.20	DBAG costs – hosting/maintenance ongoing	NO	2,046,000
4.1.21	DBAG costs – hosting/maintenance increase with CRs	NO	50,000
4.1.22	IDA Implementation PCR side + PMO	NO	675,484
4.1.23	IDA Maintenance	NO	278,552
4.1.24	Contingency for non-confirmed Budget Items in 2024	NO	188,328
	Total SUM		7,349,348

The forecast for 2024 establishing and amending costs was calculated based on the Joint NEMOs and TSOs costs in 2023.

The total of the 2024 forecast was increased by 690,075 € compared to the 2023 actuals. The main drivers behind this increase are:

- An increase in the rate of MD to be used for internal resources of NEMOs and TSOs from 925 € to 1000 € per day
- The expected increase in the Hosting & Maintenance costs.

4.2 The joint all TSOs and all NEMOs forecast of operating the SIDC

The amount of 4,525,998 € consists of:

Table 26

Item	Category	Temporary activity	Forecast 2024 (€)
4.2.1	MCSC PMO (OP)	NO	61,940
4.2.2	COMSG Convener (OP)	NO	8,436
4.2.3	Legal TF Conveners (OP)	NO	17,836
4.2.4	OTF Conveners	NO	19,560
4.2.5	OTF PMO	NO	27,928
4.2.6	OPSCOM Chairs	NO	326,100
4.2.7	OPSCOM PMO	NO	71,248
4.2.8	MPLS costs	NO	61,764
4.2.9	Meeting Arrangements (OP)	NO	32,000
4.2.10	Technical support tools (PP, ReQTest)	NO	33,880
4.2.11	DBAG costs - hosting/maintenance ongoing	NO	2,099,000
4.2.12	DBAG costs – hosting/maintenance increase with CRs	NO	60,000
4.2.13	DBAG costs - hosting/maintenance contingency	NO	50,000
4.2.14	IC SPOC (ICCC)	NO	50,000
4.2.15	IDA Maintenance	NO	1,051,292
4.2.16	PCR	NO	19,904
	Total SUM		4,525,998

The forecast for 2024 operating costs was calculated based on the Joint NEMOs and TSOs costs in 2023.

The total of the 2024 forecast was increased by 1,504,179 € compared to the 2023 actuals. The main drivers behind this increase are:

- An increase in the rate of MD to be used for internal resources of NEMOs and TSOs from 925 € to 1000 € per day
- The expected increase in the Hosting & Maintenance costs.

4.3 The all NEMOs forecast of establishing and amending the SIDC

The amount of 507,731 € consists of:

- NEMO Committee costs for establishing and amending the SIDC totalling 327,429 €
 - › This represents the 50 % of whole NEMO Committee costs totalling 654,859 €
 - › All NEMOs costs of establishing and amending the SIDC totalling 180,302 €

NEMO Committee cost is split equally between NEMO costs of establishing and amending the SDAC and establishing and amending the SIDC. In underlying cost databases and summary tables the total cost of NEMO Committee is presented. The split between SDAC and SIDC is reflected only in this report document.

For NEMO Committee costs the total amount (before the equal split between SDAC and SIDC applied) of 654,859 € consists of:

Table 27

Item	Category	Temporary activity	Forecast 2024 (€)
3.3.1	NEMO Committee - chairman	NO	89,925
3.3.2	NEMO Committee - PMO	NO	126,587
3.3.3	Reporting and communication Task Force	NO	104,500
3.3.4	Technical Task Force	NO	99,825
3.3.5	Legal Task Force	NO	14,850
3.3.6	NEMO Committee - support	NO	108,400
3.3.7	Governance Task Force	NO	70,400
3.3.8	Cost Task Force	NO	25,371
3.3.9	Exceptional contingency	YES	15,000
	Total SUM		654,859

The detailed information related to the NEMO Committee is available in chapter 3.3 under the all NEMOs costs of establishing and amending the SDAC and is not duplicated here.

For All NEMOs costs of establishing and amending the SIDC the amount of 180,302 € consists of:

Table 28

Item	Category	Temporary activity	Forecast 2024 (€)
4.3.1	Project Management (PM)	NO	49,471
4.3.2	Expenses	NO	0
4.3.3	Technical WG (TWG)	NO	54,460
4.3.4	Legal TF (LTF)	NO	32,025
4.3.5	Procedures WG (PWG)	NO	18,844
4.3.6	Cost Management WG (CMG)	NO	25,502
	Total SUM		180,302

- Forecasts for TWG (Item 4.3.3) and PWG (Item 4.3.5) also contains the budget for the so-called doers' work: work performed by individual NEMOs for the benefit of

all other NEMOs. Typical activities are: drafting of deliverables, performing tests executions and test result analysis, etc.

- Standard rate for internal resources of NEMOs and TSOs applies for such work. This rate was agreed to increase in 2024 from 925 €/MD to 1000 €/MD.
- Other observed increases in various items are due to the estimations based on actual costs in middle of 2023 when the forecast was prepared.

4.4 The all NEMOs forecast of operating the SIDC

The amount of 1,068,437 € consists of:

Table 29

Item	Category	Temporary activity	Forecast 2024 (€)
4.4.1	Project Management (PM)	NO	0
4.4.2	Expenses	NO	95,060
4.4.3	Technical WG (TWG)	NO	54,460
4.4.4	Legal TF (LTF)	NO	10,675
4.4.5	Procedures WG (PWG)	NO	3,537
4.4.6	Cost Management WG (CMG)	NO	10,929
4.4.7	Central Administrator	NO	732,000
4.4.8	NEMO OPSCOM	NO	1,776
4.4.9	IDA Coordinator	NO	160,000
	Total SUM		1,068,437

- The main task of Central Administrator (Item 4.4.7) is expected to be charged in the same amount as for 2023.
- New category introduced in 2024: IDA Coordinator (item 4.4.9). IDA Coordinator is responsible for coordination of IDA operation in 24/7 regime. The rate was set up to 800 €/24 hours. It is expected that the maximum days the role will be active in 2024 is 200. The role rotates among NEMOs who volunteered to perform this service.
- Forecast for TWG (Item 4.4.3) also contains the budget for the so-called doers' work: work performed by individual NEMOs for the benefit of all other NEMOs. Typical activities are: drafting of deliverables, performing tests executions and test result analysis, etc.
- Standard rate for internal resources of NEMOs and TSOs applies for such work. This rate was agreed to increase in 2024 from 925 €/MD to 1000 €/MD.
- Other observed increases in various items are due to the estimations based on actual costs in middle of 2023 when the forecast has been prepared.

4.5 The all TSOs forecast of operating the SIDC

The amount of 836,867 € consists of:

Table 30

Item	Category	Temporary activity	Forecast 2024 (€)
3.5.1	TSO Legal TF	NO	19,688
3.5.2	TSO MCSC PMO	NO	27,031
3.5.3	TSO MCSC COM TF	NO	7,560
3.5.4	TSO MCSC Masterclasses	NO	25,000
3.5.5	TSO Chair	NO	37,500
3.5.6	ECP/MPLS	NO	46,400
3.5.7	Central Admin	NO	4,000
3.5.8	External Testers	YES	440,000
3.5.9	Tendering costs for TSO MCSC	YES	12,500
3.5.10	TSO Do'ers	YES	104,000
3.5.11	Central Settlement Entity Fees	NO	53,188
3.5.12	Contingency	NO	60,000
	Total SUM		836,867

The forecast of 2024 establishing and amending costs was calculated based on the TSO only SIDC costs in 2023.

4.6 The all TSOs forecast of operating the SIDC

The amount of 401,767 € consists of:

Table 31

Item	Category	Temporary activity	Forecast 2024 (€)
3.6.1	TSO MCSC PMO	NO	27,031
3.6.2	TSO MCSC COM TF	NO	7,560
3.6.3	TSO MCSC Masterclasses	NO	25,000
3.6.4	TSO Chair	NO	37,500
3.6.5	ECP/MPLS	NO	46,400
3.6.6	Central Admin	NO	162,996
3.6.7	ECP Bridge	NO	22,092
3.6.8	Central Settlement Entity Fees	NO	53,188
3.6.9	Contingency	NO	20,000
	Total SUM		401,767

The forecast of 2024 operating costs was calculated based on the TSO only SIDC costs in 2023.

Chapter B

Regional costs resulting from the coordinated activities of all NEMOs or TSOs cooperating in a certain region

The following projects where NEMOs or TSOs cooperated in a certain region in line with CACM Article 80 (2)(b) were recognised in 2017:

Table 32

1	Core	6	Nordic Operations
2	Core – IDA RIP	7	Baltic MNA
3	Nordic projects	8	Baltic – IDA RIP
4	IBWT	9	SWE – IDA RIP
5	IBWT – IDA RIP	10	Hansa – IDA RIP

The following table provides an overview of the total actual common regional costs in 2023:

Table 33

		Establishing and amending costs		Operating costs	
	All NEMOs and all TSOs costs	1.1	959,496	1.2	174,605
	All NEMOs costs	1.3	0	1.4	89,076
	All TSOs costs	1.5	1,839,633	1.6	389,113
Total			2,799,129		652,794

1. CORE

The Core Flow-Based Market Coupling project promotes the development and implementation of a Flow-Based methodology across the whole Core capacity calculation region (Core CCR) in the framework of SDAC. The Core CCR consists of the bidding zone borders between the following EU Member States' bidding zones:

Austria, Belgium, Croatia, the Czech Republic, France, Germany, Hungary, Luxembourg, the Netherlands, Poland, Romania, Slovakia and Slovenia. The project go-live was in June 2022. A specific regional sharing key approved by the competent national authorities of each Member States in the region on 20 May 2015 applies in the Core Flow-based market coupling project.

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	277,542	68,283
NEMOs costs	0	89,076
TSOs costs	8,313	3,563

The NEMOs costs of operating Core FB MC totalling 89,076 € consist of:

Category	Temporary activity	2023 costs (€)
CIP services	NO	89,076
Total SUM		89,076

The TSOs costs of establishing and amending Core FB MC totalling 8,313 € consist of:

Category	Temporary activity	2023 costs (€)
JSC Chair	YES	8,313
Total SUM		8,313

The TSOs costs of operating Core FB MC totalling 3,563 € consist of:

Category	Temporary activity	2023 costs (€)
JSC Chair	YES	3,563
Total SUM		3,563

The joint NEMOs and TSOs costs of establishing and amending Core FB MC totalling 277,542 € consist of:

Category	Temporary activity	2023 costs(€)
PMO	YES	265,344
Convenorships	YES	12,198
Total SUM		277,542

The joint NEMOs and TSOs costs of operating Core FB MC totalling 68,283 € consist of:

Category	Temporary activity	2023 costs (€)
CIP services	NO	68,283
Total SUM		68,283

Forecast for 2024

The following table provides an overview of the forecast of regional common costs for 2024:

Regional costs	2024 establishing and amending costs (€)	2024 operating costs (€)
NEMOs and TSOs costs	246,942	51,212
NEMOs costs	0	0
TSOs costs	0	0

The joint NEMOs and TSOs costs of establishing and amending Core FB MC totalling 246,942 € consist of:

Category	Temporary activity	Forecast 2024 (€)
PMO	YES	221,042
Convenorships	YES	25,900
Total SUM		246,942

The joint NEMOs and TSOs costs of operating Core FB MC totalling 51,212 € consist of:

Category	Temporary activity	Forecast 2024 (€)
PMO	YES	51,212
Total SUM		51,212

2. CORE – IDA RIP

In accordance with the Commission Regulation (EU) 2015/1222 (CACM Regulation), it is a joint task of TSOs and NEMOs to implement the Single Intraday Coupling (SIDC), including the Intraday Cross-Zonal Capacity Pricing methodology (IDCZCP). Based on the IDCZCP methodology, an intraday auction mechanism (IDA) has been set up, which aims at supporting the pooling of liquidity in certain timeslots and to thus enable a consistent, transparent and market-based price formation.

The intraday implicit auction guarantees a non-discriminatory access to cross-border capacity for all market participants.

The Core RIP has worked towards an implementation of the IDA in 2024, after which the operations will fall under governance of Core IDA RIP SG & Core IDA OPSCOM. Since the project was in its development phase in 2023, only Joint TSOs and NEMOs costs of establishing and amending costs occurred until the go live in 2024.

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	152,121	0
NEMOs costs	0	0
TSOs costs	0	0

The joint NEMOs and TSOs costs of establishing and amending Core IDA totalling 152,121 € consist of:

Category	Temporary activity	2023 costs (€)
PMO	YES	116,855
Convenorships	YES	35,266
Total SUM		152,121

Forecast for 2024

The joint NEMOs and TSOs costs of establishing and amending Core IDA totalling 117,754 € consist of:

Category	Temporary activity	2024 costs (€)
PMO	YES	93,704
Convenorships	YES	24,050
Total SUM		117,754

The joint NEMOs and TSOs costs of operating Core IDA totalling 17,071 € consist of:

Category	Temporary activity	2024 costs (€)
PMO	YES	17,071
Total SUM		17,071

3. Nordic projects

This Chapter is focused on the Nordic Flow Based project (DA) and the Nordic 15 min MTU project (DA and ID), which do not include any operating costs. Costs of operations and other projects are captured in Chapter B7) Nordic operations.

Nordic Flow Based project (DA)

This project concerns the regional costs for amending and establishing the Nordic day-ahead solutions by implementing the FB capacity calculation and associated processes.

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	0	0
NEMOs costs	0	0
TSOs costs	1,653,311	0

The TSOs establishing and amending costs totalling 1,653,311 € consist of:

Details	Temporary activity	2023 costs (€)
PMO costs	YES	897,104
Other administrative costs	YES	0
System development costs	YES	756,206
Total SUM		1,653,311

- The PMO costs in the above table encompass the cost of the PMO services required to facilitate the execution of all tasks to complete the objectives of the Nordic Flow based project. These involve secretarial, convenor, as well as expert tasks.
- System Development costs cover the Nordic shared FB systems and their integration.

Forecast for 2024

The following table provides an overview of the forecast of regional common costs for 2024:

Regional costs (€)	2024 establishing and amending costs (€)	2024 operating costs (€)
NEMOs and TSOs costs	0	0
TSOs costs	0	0
NEMOs costs	1,369,554	0

The TSOs establishing and amending costs totalling 1,369,554 € consist of:

Details	Temporary activity	Forecast 2024 (€)
PMO costs	YES	1,369,554
Other administrative costs	YES	0
System development costs	YES	0
Total SUM		1,369,554

- The PMO costs in the above table encompass the cost of the PMO services required to facilitate the execution of all tasks to complete the objectives of the Nordic Flow based project. These involve secretarial, convenor, as well as expert tasks.

Nordic 15 min MTU & IDA project (DA and ID)

This project concerns the regional costs for amending and establishing the Nordic day-ahead and intraday solutions by implementing the 15 min MTUs.

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	509,555	0
NEMOs costs	0	0
TSOs costs	0	0

- Here, it is pointed out that the costs are split equally between DA and ID.
- Regarding the NEMOs, please note that both EMCO and EPEX are involved in both DA and ID.

The joint NEMOs and TSOs establishing and amending costs totalling 509,555 € consist of:

Category	Temporary activity	2023 costs (€)
PMO + administrative costs	YES	509,555
System development costs	YES	0
Total SUM		509.555

- The PMO costs in the above table encompass the cost of the PMO services required to facilitate the execution of all tasks to complete the objectives of the Nordic 15 min MTU & IDA project.
- The administrative costs cover the Project Place licenses for the Nordic 15 min MTU & IDA project.
- System Development costs are not shared, but handled on an individual party basis.

Forecast for 2024

The following table provides an overview of the forecast of regional common costs for 2024:

Regional costs	2024 establishing and amending costs (€)	2024 operating costs (€)
NEMOs and TSOs costs	619,200	0
NEMOs costs	0	0
TSOs costs	0	0

The joint NEMOs and TSOs establishing and amending costs totalling 619,200 € consist of:

Category	Temporary activity	Forecast 2024 (€)
PMO + administrative costs	YES	619,200
System development costs	YES	0
Total SUM		619,200

- The PMO costs in the above table encompass the cost of the PMO services required to facilitate the execution of all tasks to complete the objectives of the Nordic 15 min MTU & IDA project
- The administrative costs cover the Project Place licenses for the Nordic 15 min MTU & IDA project
- System Development costs are not shared, but handled on an individual party basis

4. IBWT

The main objective of the IBWT for Day-Ahead markets (Italian Borders Working Table) project is to coordinate operations amongst the involved parties.

The involved parties are: Austrian Power Grid AG ("APG"), ELECTRICITY SYSTEM OPERATOR EAD ("ESO"), ELES, d.o.o. ("ELES"), Croatian Transmission System Operator Plc. ("HOPS"), IPTO Independent Power Transmission Operator ("ADMIE"), RTE Réseau de transport d'électricité ("RTE"), Swissgrid ag ("Swissgrid") as observer member, TERNA S.p.A. Rete Elettrica Nazionale ("TERNA"), BSP Regional Energy Exchange LL C ("BSP"), CROATIAN POWER EXCHANGE Ltd. ("CROPEX"), EPEX Spot SE ("EPEX"), Nord Pool European Market Coupling Operator AS ("Nord

Pool EMCO"), EXAA Abwicklungsstelle für Energieprodukte AG ("EXAA"), Gestore dei Mercati Energetici S.p.A. ("GME"), HELLENIC ENERGY EXCHANGE S.A. ("HEEx"), Independent Bulgarian Energy Exchange ("IBEX").

A specific regional sharing key applies for this project.

Actual costs for 2023

In 2023, no regional costs occurred for the IBWT region.

Forecast for 2024

No costs are foreseen for the year 2024.

5. IBWT – IDA RIP

The IBWT IDA RIP aims at the implementation of the regional processes for the Intraday Auctions (IDAs) in the IBWT region which are not in scope of the central SIDC IDA Project, mainly the IDAs post-coupling process.

Involved parties are:

TSOs: Terna Rete Italia S.p.A., Austrian Power Grid AG, RTE Réseau de Transport d'Electricité, ELES, d.o.o., Electricity System Operator EAD, IPTO Independent Power Transmission Operator,

NEMOs: BSP Energy Exchange LL C, EPEX Spot SE, Gestore dei Mercati Energetici S.p.A., European Market Coupling Operator AS, Independent Bulgarian Energy Exchange EAD, Hellenic Energy Exchange S.A..

According to the agreed sharing approach, there are no NEMO-only nor TSO-only costs. The cost is shared equally by all IBWT IDA RIP parties.

Cost for project management consists of costs for external support related to project management services provided by Indra Czech Republic s.r.o., respectively CGI IT Czech Republic s.r.o. (Indra Czech Republic s.r.o. was acquired by CGI IT Czech Republic s.r.o. on 1.6.2023).

The invoicing for PMO services has changed from March 2023 with Adherence of IBEX and ESO.

The actual 2023 costs consist purely of PMO support cost, with one exception of a one-off postal expense. There are no special deliverables prepared by PMO other than the documents supporting the meetings of IBWT IDA RIP working groups (agenda, MoM, etc.).

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	13,960	0
NEMOs costs	0	0
TSOs costs	0	0

The joint NEMOs and TSOs establishing and amending costs totalling 13,960 € consist of:

Category	Temporary activity	2023 costs (€)
Costs for project management (10 parties)	Yes	2,019
Costs for project management (12 parties)	Yes	11,847
Administration (12 parties)	Yes	94
Total SUM		13,960

Item 1 is shared between APG, ELES, ADMIE, RTE, TERNA, BSP, GME, NP EMCO, HENEX, EPEX.

Items 2 and 3 are shared between APG, ELES, ADMIE, RTE, TERNA, BSP, GME, NP EMCO, HENEX, EPEX, IBEX, ESO.

In March 2023 two additional parties (IBEX, ESO) adhered to the contract increasing the number of parties sharing the cost from 10 (Item 1) to 12 (Items 2 and 3).

Administration (Item 3) refers to one-off postage expense.

Forecast for 2024

The following table provides an overview of the forecast of regional common costs for 2024:

Regional costs	2024 establishing and amending costs (€)	2024 operating costs (€)
NEMOs and TSOs costs	6,500	0
NEMOs costs	0	0
TSOs costs	0	0

- With the go-live of IDA in June 2024, the project is concluded.
- Forecast for 2024 is estimated at 6,500 €.

6. Nordic Operations

In addition to the costs related to projects as captured in Chapter B3) Nordic projects (DA and ID), in this Chapter, an overview of the costs of operating and the costs of establishing and amending is presented.

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	0	106,322
NEMOs costs	0	0
TSOs costs	26,132	385,550

The joint NEMOs and TSOs operating costs totalling 106,322 € consist of:

Category	Temporary activity	2023 costs (€)
PMO costs	NO	106,322
Total SUM		106,322

- The PMO cost in the above table encompass the cost of the PMO services required to facilitate the execution of all tasks to operate the Nordic DA market (Nordic JSC, Nordic OPSCOM, and Nordic Budget Management TF).

The TSOs establishing and amending costs totalling 26,132 € consist of:

Category	Temporary activity	2023 costs (€)
PMO costs	NO	26,132
Total SUM		26,132

- The PMO cost in the above table encompass the cost of the PMO services related to adapting systems, procedures, documentation, and contracts to changes in the operations.

The TSOs operating costs totalling 385,550 € consist of:

Category	Temporary activity	2023 costs (€)
Operational costs	No	385,550
Total SUM		385,550

- The operational costs in the above table encompass the costs of operating the joint Nordic IT systems.

Forecast for 2024

The following table provides an overview of the forecast of regional common costs for 2024:

Regional costs	2024 establishing and amending costs (€)	2024 operating costs (€)
NEMOs and TSOs costs	0	180,000
NEMOs costs	0	0
TSOs costs	42,000	440,000

The joint NEMOs and TSOs operating costs totalling 180,000 € consist of:

Category	Temporary activity	Forecast 2024 (€)
PMO costs	NO	180,000
Total SUM		180,000

- The PMO cost in the above table encompasses the cost of the PMO services required to facilitate the execution of all tasks to operate the Nordic DA market (Nordic JSC, Nordic OPSCOM, and Nordic Budget Management TF), but with an extended scope (incl. Representation at Pan-EU level). On top of that, as of Q2 2024, IDA is in-scope.

7. Baltic MNA

This project concerns the regional costs for amending and establishing the Baltic day-ahead and intraday solutions to become MNA compatible. Currently, Baltic TSOs and engaged NEMOs are expecting to finish all necessary documentation and, when the additional NEMOs express their readiness to become operational in the Baltic bidding zones, aim for completion of the project and secure the go-live of the Baltic MNA solution will take place.

The involved parties of Baltic MNA project are: Estonian, Latvian and Lithuanian TSOs and from NEMOs side Nord Pool and EPEX.

8. Baltic – IDA RIP

The Baltic IDA RIP aims at the implementation of the regional processes for the Intraday Auctions (IDA) in the Baltic region (Estonia, Latvia and Lithuania) which are not in scope of the central SIDC IDA Project, such as the IDA post-coupling process

In 2023, no regional costs occurred for the Baltic IDA RIP.

The TSOs establishing and amending costs totalling 42,000 € consist of:

Category	Temporary activity	Forecast 2024 (€)
PMO costs	No	42,000
Total SUM		42,000

- The PMO cost in the above table encompass the cost of the PMO services related to adapting systems, procedures, documentation, and contracts to changes in the operations.

The TSOs operating costs totalling 440,000 € consist of:

Category	Temporary activity	Forecast 2024 (€)
Operational costs	No	440,000
Total SUM		440,000

- The operational costs in the above table encompass the costs of operating the joint Nordic IT systems.

A Specific regional sharing key is used for the project. The Sharing key is based on the Baltic NRAs' guidance ("All Baltic NRAs position on Baltic TSOs' proposal for financial arrangements of the Baltic arrangements of more than one NEMO in one bidding zone") of 19 April 2019.

There are no regional costs in 2023 nor budgeted costs in 2024 for this project as project parties are awaiting for a second NEMO to become operational in the area.

9. SWE – IDA RIP

The SWE RIP aims at the implementation of the regional processes for the Intraday Auctions (IDA) in the SWE region (France, Portugal and Spain) which are not in scope of the central SIDC IDA Project, mainly the IDA post-coupling process.

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	6,318	0
TSOs costs	0	0

The joint NEMOs and TSOs costs of establishing and amending totalling 6,318 € consist of:

Category	Temporary activity	2023 costs (€)
Joint PMO	YES	6,318
Total SUM		6,318

- In 2023, only PMO costs occurred for the project.
- Joint PMO costs consist of the costs of the external support related to project management services provided by Indra Business Consulting, S.L.U as of 1 April 2022.
- The external support for PMO services was selected based via a contractual tender.
- A rate of 690 €/MD was used.

Forecast for 2024

The following table provides an overview of the forecast of regional common costs for 2024:

Regional costs	2024 establishing and amending costs (€)	2024 operating costs (€)
NEMOs and TSOs costs	5,051	0
NEMOs costs	0	0
TSOs costs	0	0

The joint NEMOs and TSOs costs of establishing and amending totalling 5,051 € consist of:

Category	Temporary activity	Forecast 2024 (€)
Joint PMO	YES	5,051
Total SUM		5,051

- For 2024, the same costs as in 2023 are expected until IDA go-live

10. Hansa – IDA RIP

The Hansa RIP aims at the implementation of the regional processes for the Intraday Auctions (IDA) in the Hansa region (Denmark, Germany, the Netherlands, Norway, Poland, and Sweden) which are not in scope of the central SIDC IDA Project, mainly the IDA post-coupling process.

Actual costs for 2023

The following table provides an overview of the total actual regional common costs in 2023:

Regional costs	2023 establishing and amending costs (€)	2023 operating costs (€)
NEMOs and TSOs costs	0	0
NEMOs costs	0	0
TSOs costs	151,877	0

The TSOs costs of establishing and amending totalling 151,877 € consist of:

Category	Temporary activity	2023 costs (€)
Joint PMO	YES	151,877
Total SUM		151,877

- In 2023, only PMO costs occurred for the project.

Forecast for 2024

The TSOs costs of establishing and amending totalling 44,775 € consist of:

Regional costs	2024 establishing and amending costs (€)	2024 operating costs (€)
NEMOs and TSOs costs	0	0
NEMOs costs	0	0
TSOs costs	44,775	0

The TSOs costs of establishing and amending totalling 44,775 € consist of:

Category	Temporary activity	2023 costs (€)
PMO	YES	44,755
Total SUM		44,755

- For 2024, the same costs as in 2023 are expected until IDA go-live.

Chapter C

National costs resulting from activities of the NEMOs or NEMOs and TSOs in that Member State

TSOs, as agreed with the NRAs, report the national cost in two categories for each timeframe:

- Category A is the costs of representation in meetings and includes the time for preparation.
- Category B is the costs for national IT implementation solely related to market coupling.

TSOs would like to emphasise that as there is no common system to track the costs, the homogeneity of the numbers reported is not guaranteed.

Table 74

Member State	TSO	National costs related to SDAC (€)		National costs related to SIDC (€)	
		Category A	Category B	Category A	Category B
Austria	APG	122,655	0	222,519	157,601
Belgium	Elia	51,385	60,021	347,855	340,120
Bulgaria	ESO	48,270	0	58,825	0
Croatia	HOPS	0	0	0	0
Czech Republic	ČEPS	45,055	16,474	60,271	477,807
Denmark	Energinet	234,878	0	131,624	0
Estonia	Elering	0	0	0	0
Finland	Fingrid	15,032	0	40,700	0
France	RTE	172,000	123,000	130,000	278,000
Germany	Baltic Cable	52,480	119,304	0	194,040
	50 Hertz	256,764	35,637	182,212	110,352
	Amprion	286,000	0	572,000	155,000
	TTG	272,925	74,265	154,719	115,887
	TransnetBW	39,507	0	58,357	17,530
Greece	ADMIE	0	0	0	0
Hungary	MAVIR	23,978	63,217	34,906	713,565
Ireland	EirGrid	0	0	0	0
Italy	Terna	29,182	5,404	125,552	32,135
Latvia	AST	9,840	30,000	39,360	45,000
Lithuania	Litgrid	0	0	10500	0
Luxembourg	CREOS	24,541	0	33,698	0
Netherlands	TTN	30,000	0	262,000	815,000
Norway	Statnett	397,000	48,000	363,000	48,000
Poland	PSE	58,423	33,862	63,224	216,435
Portugal	REN	10,814	0	12,221	0
Romania	Transelectrica	0	0	0	0
Slovakia	SEPS	51,196	16,500	88,445	258,120
Slovenia	ELES	83,232		111,845	
Spain	REE	22,383	0	32,889	0
Sweden	Svenska kraftnät	225,522	5,696	260,444	255,337

Chapter D

Contributions made to NEMO costs by TSOs in accordance with Article 76(2)

Table 75

Member State	TSO	Contributions made to NEMO costs by TSOs in accordance with Article 76(2) for the Day-Ahead timeframe (€)	Contributions made to NEMO costs by TSOs in accordance with Article 76(2) for the Intraday timeframe (€)
Austria	APG	47,132	88,277
Belgium	Elia	16,588	18,850
Bulgaria	ESO	0	0
Croatia	HOPS	0	0
Czech Republic	ČEPS	0	0
Denmark	Energinet	0	0
Estonia	Elering	0	0
Finland	Fingrid	0	0
France	RTE	0	0
Germany	Baltic Cable	0	0
	50 Hertz	72,147	43,885
	Amprion	81,577	62,952
	TTG	58,225	56,817
	TransnetBW	38,020	34,770
Greece	ADMIE	0	0
Hungary	MAVIR	1,890,422	
Ireland	EirGrid	0	0
Italy	Terna	0	0
Latvia	AST	56,449	23,088
Lithuania	Litgrid	0	
Luxembourg	CREOS	3,792	3,729
Netherlands	TTN	0	0
Norway	Statnett	0	0
Poland	PSE	117,291	182,973
Portugal	REN	0	0
Romania	Transelectrica	0	0
Slovakia	SEPS	0	0
Slovenia	ELES	2,221,772	1,026,195
Spain	REE	0	0
Sweden	Svenska kraftnät	0	0

Glossary

4M MC	4M Market Coupling between Czech Republic, Slovakia, Hungary, Romania	CPLEX	IBM High-performance mathematical programming solver for linear programming, mixed-integer programming and quadratic programming
50Hertz	50Hertz Transmission GmbH	CPM	Cross Product Matching
ACER	Agency for the Cooperation of Energy Regulators	CWE	Central Western Europe
AL	Albania	CZ	Czech Republic
ALWG	Algorithm Working Group	DAOA	Day-Ahead Operational Agreement
ANCA	All NEMO Cooperation Agreement	DBAG	Deutsche Börse AG
ANIDOA	All Nemos Intra-Day Operational Agreement	DC	Direct Current
ANDOA	All NEMOs Day-Ahead operational agreement	DE	Germany
APG	Austrian Power Grid AG	DK	Denmark
AS	XBID Accession Stream	EE	Estonia
ASR	Additional Service Request	ECP	Energy Communication Platform. This is a private communication network; the platform provides message delivery capabilities comprising message routing and ensures the reliable delivery of messages between ECP communication endpoints.
AST	AS Augstsprieguma tikls	Elia	Elia System Operator SA
AT	Austria	ESO	Electroenergien Systemen Operator EAD
ATC	Available Transmission Capacity	EMS	Akcionarsko društvo Elektromreža Srbije
BA	Bosnia and Herzegovina	ES	Spain
BE	Belgium	EU	European Union
BG	Bulgaria	FB	Flow based
BMSG	Budget Management Support Group	FI	Finland
BMTF	Budget Management Task Force	FMWG	Functional Model Working Group
CA	Cooperation Agreement	FR	France
CACM	Capacity Allocation and Congestion Management	FSFO	Functional Support Facility Operational
CCP	Central Counterparty	GB	Great Britain
CCR	Capacity Calculation Region	GCT	Gate Closure Time
CGES	Crnogorski elektroprenosni sistem AD	GOT	Gate Opening Time
CH	Switzerland	GOWG	Governance WG
CEE	Central Eastern Europe	GR	Greece
CIP	CWE NEMOs Interface Platform		
CMM	Capacity Management Module		
COMSG	Communication Support Group		

HOPS	Croatian Transmission System Operator Plc.	MC	Market Coupling
HR	Croatia	MAVIR	Magyar Villamosenergia-ipari Átviteli Rendszerirányító Zártkörűen Működő Részvénytársaság
HU	Hungary	MCO	Market Coupling Operator
HVDC	High Voltage Direct Current	ME	Montenegro
IAT	Integration Acceptance Test	MESC	Market Stakeholder Committee
IC	Incident Committee	MEPSO	Macedonian Transmission System Operator AD
ICG	Implementation Coordination Group	MK	Macedonia
ICP	Interim Coupling Project (coupling 4M MC and SDAC area on NTC based approach)	MNA	Multiple NEMOs Arrangements
ICT	Integrated Coordination Team	MPLS	Multi-Protocol Label Switching. MPLS is a technology whose concept is based on the transmission of IP data via ATM (Asynchronous Transfer Mode). With MPLS, complex meshed virtual connections (VC) for individual virtual private networks (VPN) can be bypassed and thousands of VPNs built on existing technology.
IDA	Intraday Auction	MRC	Multi Regional Coupling
IDOA	Intraday Operational Agreement	MSD	Market and System Design
IDSC	Intraday Steering Committee	MTU	Market Time Unit
IFA	Interconnexion France-Angleterre	NC	NEMO Committee
IE	Ireland	NEMO	Nominated Electricity Market Operator or Power Exchange
INCA	interim NEMO cooperation Agreement	NL	Netherlands
IPTO	Independent Power Transmission Operator S.A.	NO	Norway
I-SEM	Integrated Single Electricity Market	NOS	BiH Nezavisni operator sustava u Bosni i Hercegovini
IT	Italy	NRA	National Regulatory Authority
JAO	Joint Allocation Office	NTC	Net Transmission Capacity
JLG	Joint Legal Group	NWE	North Western Europe
JSC	Joint Steering Committee	OPSCOM	Operational Committee
JWG	Joint Working Group	OST	OST sh.a – Albanian Transmission System Operator
KOSTT	Kosovo Electricity Transmission System and Market Operator	OTF	Operational Task Force
LIP	Local Implementation Project		
LTA	Long Term Allocation		
LTC	LIP Testing Coordinator		
LTF	Legal Task Force		
LU	Luxembourg		
LWG	Legal Working Group		

PCR	Price Coupling of Regions	SEPS	Slovenská elektrizačná prenosová sústava, a.s.
PL	Poland	SK	Slovakia
PMB	PCR Matcher and Broker IT system	SLA	Service Level Agreement
PMI	Public Message Interface	SLA KPI	Service Level Agreement Key Performance Indicator
PMI LAT	Public Message Interface Log Analysis tool	SM	Shipping Module
PMO	Project Management Officer	SOB	Shared Order Book
PSE	Polskie Sieci Elektroenergetyczne	SONI	System Operator for Northern Ireland Ltd
PT	Portugal	SWE	South Western Europe
PUN	National Single Price	TCDA	TSO Cooperation Operational Agreement
PWG	Procedural WG	TCG	Trilateral Coordination Group
QA&RM	Quality Assurance & Release Management	TCID	TSO Co-operation Agreement for Single Intraday Coupling
R&D	Research and Development	TCOA	TSO Co-operation Agreement for Day-ahead Coupling
RCB	Release Control Board	Terna	Terna - Rete Elettrica Nazionale SpA
REE	Red Eléctrica de España S.A.U.	TF	Task Force
REN	Rede Eléctrica Nacional, S.A.	TSO	Transmission System Operator
RfO	Request for Offer	TWG	Technical WG
RO	Romania	UAT	User Acceptance Tests
RS	Serbia	UK	United Kingdom
RTE	Réseau de Transport d'Electricité	WG	Working Group
SARs	Shadow Allocation Rules	XBID	Cross-Border Intraday, a technical solution supporting SIDC implementation
SDAC	Single Day-Ahead Coupling	XML	Extensible Markup Language (file type)
SE	Sweden	XK	Kosovo
SEM	Single Electricity Market (covering the Republic of Ireland and Northern Ireland)	XTG	XBID Testing Group
SF	Simulation Facility		
SG	Support Group		
SI	Slovenia		
SIDC	Single Intraday Coupling		
SEE	South-East Europe		

The terms used in this document have the meaning of the definitions included in Article 2 of the CACM regulation.

Annex

Sharing keys for joint projects

1.1 The following sharing key was used for the sharing of all TSO and NEMO costs for establishing and amending the SDAC in 2023:

Table 76

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023\
Austria	APG	AustriaAPG		0		50.000 %	1.200 %
Austria	EPEX	AustriaEPEX		13,562		26.825 %	0.644 %
Austria	EXAA	AustriaEXAA		6,605		15.913 %	0.382 %
Austria	EMCO	AustriaEMCO		1,088		7.262 %	0.174 %
Austria			66,861	21,255	2.400 %	100.000 %	2.400 %
Belgium	ELIA	BelgiumELIA		0		50.000 %	1.396 %
Belgium	EPEX	BelgiumEPEX		17,519		36.667 %	1.024 %
Belgium	EMCO	BelgiumEMCO		4,610		13.333 %	0.372 %
Belgium			83,069	22,128	2.792 %	100.000 %	2.792 %
Bulgaria	ESO	BulgariaESO		0		50.000 %	0.857 %
Bulgaria	IBEX	BulgariaIBEX		27,925		50.000 %	0.857 %
Bulgaria			32,089	27,925	1.714 %	100.000 %	1.714 %
Croatia	HOPS	CroatiaHOPS		0		50.000 %	0.462 %
Croatia	Cropex	CroatiaCropex		3,835		50.000 %	0.462 %
Croatia			16,854	3,835	0.924 %	100.000 %	0.924 %
Czech Republic	ČEPS	Czech RepublicCEPS		0		50.000 %	1.163 %
Czech Republic	OTE	Czech RepublicOTE		24,308		50.000 %	1.163 %
Czech Republic			61,304	24,308	2.326 %	100.000 %	2.326 %
Denmark	Energinet	DenmarkEnerginet		0		50.000 %	0.866 %
Denmark	EMCO	DenmarkEMCO		20,898		31.408 %	0.544 %
Denmark	EPEX	DenmarkEPEX		6,047		13.036 %	0.226 %
Denmark	Nasdaq	DenmarkNasdaq		0		5.556 %	0.096 %
Denmark			33,602	26,944	1.731 %	100.000 %	1.731 %
Estonia	Elering	EstoniaElering		0		50.000 %	0.389 %
Estonia	EMCO	EstoniaEMCO		7,018		41.665 %	0.325 %

Table 76

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023\
Estonia	EPEX	EstoniaEPEX		0		8.335 %	0.065 %
Estonia			8,135	7,018	0.779 %	100.000 %	0.779 %
Finland	Fingrid	FinlandFingrid		0		49.500 %	1.669 %
Finland	Kraftnät Åland	FinlandKraftnät Åland			0		0.500 %
Finland	EMCO	FinlandEMCO		51,854		37.670 %	1.270 %
Finland	EPEX	FinlandEPEX		1,968		6.775 %	0.228 %
Finland	Nasdaq	FinlandNasdaq		0		5.556 %	0.187 %
Finland			83,301	53,822	3.372 %	100.000 %	3.372 %
France	RTE	FranceRTE		0		50.000 %	6.334 %
France	EPEX	FranceEPEX		101,074		25.000 %	3.167 %
France	EMCO	FranceEMCO		5,948		25.000 %	3.167 %
France	Nasdaq	FranceNasdaq		0		0.000 %	0.000 %
France			442,322	107,023	12.667 %	100.000 %	12.667 %
Germany	50Hertz	Germany50Hertz		0		22.057 %	3.474 %
Germany	Amprion	GermanyAmprion		0		31.640 %	4.983 %
Germany	TenneT DE	GermanyTennet DE		0		28.037 %	4.415 %
Germany	Transnet	GermanyTransnet		0		17.266 %	2.719 %
Germany	Baltic Cable	GermanyBaltic Cable		0		1.000 %	0.157 %
Germany	EPEX	GermanyEPEX		154,321		0.000 %	0.000 %
Germany	EMCO	GermanyEMCO		33,295		0.000 %	0.000 %
Germany	EXAA	GermanyEXAA		8,944		0.000 %	0.000 %
Germany	Nasdaq	GermanyNasdaq		0		0.000 %	0.000 %
Germany			505,175	196,560	15.749 %	100.000 %	15.749 %
Greece	ADMIE	GreeceADMIE		0		50.000 %	1.333 %
Greece	Henex	GreeceHenex		56,803		50.000 %	1.333 %
Greece			50,554	56,803	2.666 %	100.000 %	2.666 %
Hungary	Mavir	HungaryMavir		0		50.000 %	0.908 %
Hungary	HUPX	HungaryHUPX		19,142		50.000 %	0.908 %
Hungary			43,387	19,142	1.817 %	100.000 %	1.817 %
Ireland	EirGrid (TSO)	IrelandEirGrid (TSO)		0		50.000 %	0.880 %
Ireland	EirGrid (NEMO)	IrelandEirGrid (NEMO)		33,619		50.000 %	0.880 %
Ireland	EMCO	IrelandEMCO		0		0.000 %	0.000 %
Ireland			29,659	33,619	1.761 %	100.000 %	1.761 %
Italy	Terna	ItalyTerna		0		50.000 %	5.376 %
Italy	GME	ItalyGME		182,439		50.000 %	5.376 %
Italy			300,887	182,439	10.752 %	100.000 %	10.752 %

Table 76

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023\
Latvia	AST	LatviaAST		0		50.000 %	0.365 %
Latvia	EMCO	LatviaEMCO		5,820		41.667 %	0.304 %
Latvia	EPEX	LatviaEPEX		0		8.333 %	0.061 %
Latvia			6,930	5,820	0.729 %	100.000 %	0.729 %
Lithuania	Litgrid	LithuaniaLitgrid		0		50.000 %	0.439 %
Lithuania	EMCO	LithuaniaEMCO		7,611		41.667 %	0.366 %
Lithuania	EPEX	LithuaniaEPEX		0		8.333 %	0.073 %
Lithuania			11,954	7,611	0.878 %	100.000 %	0.878 %
Luxembourg	CREOS	LuxembourgCREOS		0		100.000 %	0.611 %
Luxembourg	EPEX	LuxembourgEPEX		0		0.000 %	0.000 %
Luxembourg	EMCO	LuxembourgEMCO		0		0.000 %	0.000 %
Luxembourg	Nasdaq	LuxembourgNasdaq		0		0.000 %	0.000 %
Luxembourg			6,393	0	0.611 %	100.000 %	0.611 %
Netherlands	TenneT BV	NetherlandsTennet BV		0		50.000 %	1.858 %
Netherlands	EPEX	NetherlandsEPEX		25,136		35.257 %	1.310 %
Netherlands	EMCO	NetherlandsEMCO		10,511		14.743 %	0.548 %
Netherlands			112,349	35,647	3.716 %	100.000 %	3.716 %
Poland	PSE	PolandPSE		0		50.000 %	2.111 %
Poland	TGE	PolandTGE		4,884		32.648 %	1.379 %
Poland	EPEX	PolandEPEX		1,015		11.185 %	0.472 %
Poland	EMCO	PolandEMCO		110		6.167 %	0.260 %
Poland			157,314	6,009	4.222 %	100.000 %	4.222 %
Portugal	REN	PortugalREN		0		50.000 %	1.262 %
Portugal	OMIE	PortugalOMIE		52,128		50.000 %	1.262 %
Portugal			48,117	52,128	2.524 %	100.000 %	100.000 %
Romania	Transelectrica	RomaniaTranselectrica		0		50.000 %	1.016 %
Romania	OPCOM	RomaniaOPCOM		23,069		50.000 %	1.016 %
Romania			49,623	23,069	2.033 %	100.000 %	2.033 %
Slovakia	SEPS	SlovakiaSEPS		0		50.000 %	0.602 %
Slovakia	OKTE	SlovakiaOKTE		7,045		50.000 %	0.602 %
Slovakia			26,457	7,045	1.205 %	100.000 %	1.205 %
Slovenia	ELES	SloveniaELES		0		50.000 %	0.415 %
Slovenia	BSP	SloveniaBSP		2,866		50.000 %	0.415 %
Slovenia			13,550	2,866	0.829 %	100.000 %	0.829 %
Spain	REE	SpainREE		0		50.000 %	4.542 %
Spain	OMIE	SpainOMIE		174,673		50.000 %	4.542 %

Table 76

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023\
Spain			235,025	174,673		9.083 %	100.000 %
Sweden	Affärsverket svenska kraftnät	SwedenAffärsverket svenska kraftnät		0		50.000 %	2.964 %
Sweden	EMCO	SwedenEMCO		121,551		35.862 %	2.126 %
Sweden	EPEX	SwedenEPEX		12,142		8.583 %	0.509 %
Sweden	Nasdaq	SwedenNasdaq		0		5.556 %	0.329 %
Sweden			131,028	133,693	5.927 %	100.000 %	5.927 %
Northern Ireland	EMCO	Northern IrelandEMCO		0		0.000 %	0.000 %
Northern Ireland	SONI (TSO)	Northern IrelandSONI (TSO)		0		100.000 %	0.818 %
Northern Ireland	SONI (NEMO)	Northern IrelandSONI (NEMO)		8,085		0.000 %	0.000 %
Northern Ireland			9,000	8,085	0.818 %	100.000 %	0.818 %
Norway	Statnett	NorwayStatnett		0		50.000 %	2.987 %
Norway	EPEX	NorwayEPEX		6,210		7.038 %	0.420 %
Norway	Nasdaq	NorwayNasdaq		0		5.556 %	0.332 %
Norway	EMCO	NorwayEMCO		133,416		37.406 %	2.235 %
Norway			128,443	139,625	5.975 %	100.000 %	5.975 %

1.2 The following sharing key was used for the sharing of all TSO and NEMO costs for operating the SDAC in 2023:

Table 77

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Share per party as used for the costs of 2023
Austria	APG		0		50.000 %	1.211 %
Austria	EPEX		13,562		26.825 %	0.650 %
Austria	EXAA		6,605		15.913 %	0.385 %
Austria	EMCO		1,088		7.262 %	0.176 %
Austria		66,861	21,255	2.421 %	100.000 %	2.421 %
Belgium	ELIA		0		50.000 %	1.407 %
Belgium	EPEX		17,519		36.667 %	1.032 %
Belgium	EMCO		4,610		13.333 %	0.375 %
Belgium		83,069	22,128	2.814 %	100.000 %	2.814 %
Bulgaria	ESO		0		50.000 %	0.867 %
Bulgaria	IBEX		27,925		50.000 %	0.867 %
Bulgaria		32,089	27,925	1.733 %	100.000 %	1.733 %
Croatia	HOPS		0		50.000 %	0.471 %
Croatia	Cropex		3,835		50.000 %	0.471 %
Croatia		16,854	3,835	0.942 %	100.000 %	0.942 %
Czech Republic	ČEPS		0		50.000 %	1.174 %
Czech Republic	OTE		24,308		50.000 %	1.174 %
Czech Republic		61,304	24,308	2.347 %	100.000 %	2.347 %
Denmark	Energinet		0		50.000 %	0.875 %
Denmark	EMCO		20,898		34.186 %	0.599 %
Denmark	EPEX		6,047		15.814 %	0.277 %
Denmark	Nasdaq		0		0.000 %	0.000 %
Denmark		33,602	26,944	1.751 %	100.000 %	1.751 %
Estonia	Elering		0		50.000 %	0.399 %
Estonia	EMCO		7,018		41.665 %	0.332 %
Estonia	EPEX		0		8.335 %	0.066 %
Estonia		8,135	7,018	0.797 %	100.000 %	0.797 %
Finland	Fingrid		0		50.000 %	1.697 %
Finland	Kraftnät Åland		0		0.000 %	0.000 %
Finland	EMCO		51,854		40.448 %	1.373 %
Finland	EPEX		1,968		9.552 %	0.324 %
Finland	Nasdaq		0		0.000 %	0.000 %
Finland		83,301	53,822	3.394 %	100.000 %	3.394 %

Table 77

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Share per party as used for the costs of 2023
France	RTE		0		50.000 %	6.355 %
France	EPEX		101,074		47.221 %	6.001 %
France	EMCO		5,948		2.779 %	0.353 %
France	Nasdaq		0		0.000 %	0.000 %
France		442,322	107,023	12.709 %	100.000 %	12.709 %
Germany	50Hertz		0		22.057 %	3.484 %
Germany	Amprion		0		31.640 %	4.997 %
Germany	TenneT DE		0		28.037 %	4.428 %
Germany	Transnet		0		17.266 %	2.727 %
Germany	Baltic Cable		0		1.000 %	0.158 %
Germany	EPEX		154,321		0.000 %	0.000 %
Germany	EMCO		33,295		0.000 %	0.000 %
Germany	EXAA		8,944		0.000 %	0.000 %
Germany	Nasdaq		0		0.000 %	0.000 %
Germany		505,175	196,560	15.794 %	100.000 %	15.794 %
Greece	ADMIE		0		50.000 %	1.343 %
Greece	Henex		56,803		50.000 %	1.343 %
Greece		50,554	56,803	2.686 %	100.000 %	2.686 %
Hungary	Mavir		0		50.000 %	0.918 %
Hungary	HUPX		19,142		50.000 %	0.918 %
Hungary		43,387	19,142	1.837 %	100.000 %	1.837 %
Ireland	EirGrid (TSO)		0		50.000 %	0.890 %
Ireland	EirGrid (NEMO)		33,619		50.000 %	0.890 %
Ireland	EMCO		0		0.000 %	0.000 %
Ireland		29,659	33,619	1.780 %	100.000 %	1.780 %
Italy	Terna		0		50.000 %	5.393 %
Italy	GME		182,439		50.000 %	5.393 %
Italy		300,887	182,439	10.787 %	100.000 %	10.787 %
Latvia	AST		0		50.000 %	0.374 %
Latvia	EMCO		5,820		41.667 %	0.311 %
Latvia	EPEX		0		8.333 %	0.062 %
Latvia		6,930	5,820	0.747 %	100.000 %	0.747 %

Table 77

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Share per party as used for the costs of 2023
Lithuania	Litgrid		0		50.000 %	0.448 %
Lithuania	EMCO		7,611		41.670 %	0.374 %
Lithuania	EPEX		0		8.330 %	0.075 %
Lithuania		11,954	7,611	0.897 %	100.000 %	0.897 %
Luxembourg	CREOS					
Luxembourg	EPEX					
Luxembourg	EMCO					
Luxembourg	Nasdaq					
Luxembourg						
Netherlands	TenneT BV		0		50.000 %	1.870 %
Netherlands	EPEX		25,136		35.257 %	1.319 %
Netherlands	EMCO		10,511		14.743 %	0.551 %
Netherlands		112,349	35,647	3.740 %	100.000 %	3.740 %
Poland	PSE		0		50.000 %	2.124 %
Poland	TGE		4,884		32.648 %	1.387 %
Poland	EPEX		1,015		11.185 %	0.475 %
Poland	EMCO		110		6.167 %	0.262 %
Poland		157,314	6,009	4.249 %	100.000 %	4.249 %
Portugal	REN		0		50.000 %	1.272 %
Portugal	OMIE		52,128		50.000 %	1.272 %
Portugal		48,117	52,128	2.545 %	100.000 %	2.545 %
Romania	Transelectrica		0		50.000 %	1.027 %
Romania	OPCOM		23,069		50.000 %	1.027 %
Romania		49,623	23,069	2.053 %	100.000 %	2.053 %
Slovakia	SEPS		0		50.000 %	0.612 %
Slovakia	OKTE		7,045		50.000 %	0.612 %
Slovakia		26,457	7,045	1.224 %	100.000 %	1.224 %
Slovenia	ELES		0		50.000 %	0.424 %
Slovenia	BSP		2,866		50.000 %	0.424 %
Slovenia		13,550	2,866	0.848 %	100.000 %	0.848 %
Spain	REE		0		50.000 %	4.557 %
Spain	OMIE		174,673		50.000 %	4.557 %
Spain		235,025	174,673	9.114 %	100.000 %	9.114 %

Table 77

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 DA (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Share per party as used for the costs of 2023
Sweden	Affärsverket svenska kraftnät		0		50.000 %	2.976 %
Sweden	EMCO		121,551		38.639 %	2.300 %
Sweden	EPEX		12,142		11.361 %	0.676 %
Sweden	Nasdaq		0		0.000 %	0.000 %
Sweden		131,028	133,693	5.952 %	100.000 %	5.952 %
Northern Ireland	EMCO		0		0.000 %	0.000 %
Northern Ireland	SONI (TSO)		0		100.000 %	0.837 %
Northern Ireland	SONI (NEMO)		8,085		0.000 %	0.000 %
Northern Ireland		9,000	8,085	0.837 %	100.000 %	0.837 %
Norway	Statnett		0		50.000 %	3.000 %
Norway	EPEX		6,210		9.816 %	0.589 %
Norway	Nasdaq		0		0.000 %	0.000 %
Norway	EMCO		133,416		40.184 %	2.411 %
Norway		128,443	139,625	5.999 %	100.000 %	5.999 %

1.3 The following sharing key was used for the sharing of all NEMOs costs of establishing and amending the SDAC in 2023

Table 78

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	MS share to be used for sharing of SDAC costs in 2023 – establishing and amending	NEMO share within MS to be used for sharing of SDAC costs in 2023 – establishing and amending	CACM Share - SDAC to be used for sharing of SDAC costs in 2023 – establishing and amending
Austria	66,861.49	EPEX	13,562.47	2.3998 %	53.6496 %	1.2875 %
		EXAA	6,604.74		31.8268 %	0.7638 %
		EMCO	1,088.00		14.5236 %	0.3485 %
Belgium	83,068.70	EPEX	17,518.69	2.7917 %	73.3346 %	2.0473 %
		EMCO	4,609.73		26.6654 %	0.7444 %
Bulgaria	32,088.80	IBEX	27,924.70	1.7138 %	100.0000 %	1.7138 %
Croatia	16,854.40	CROPEX	3,835.12	0.9236 %	100.0000 %	0.9236 %
Czechia	61,303.99	OTE	24,308.06	2.3262 %	100.0000 %	2.3262 %
Denmark	33,602.44	EMCO	20,897.60	1.7312 %	62.8168 %	1.0875 %
		EPEX	6,046.72		26.0721 %	0.4513 %
		NASDAQ	N/A		11.1111 %	0.1924 %
Estonia	8,134.59	EMCO	7,018.00	0.7789 %	83.3333 %	0.6491 %
		EPEX	0,00		16.6667 %	0.1298 %
Finland	83,301.00	EMCO	51,853.55	3.3716 %	75.3398 %	2.5402 %
		EPEX	1,968.28		13.5491 %	0.4568 %
		NASDAQ	N/A		11.1111 %	0.3746 %
France	442,322.44	EPEX	101,074.24	12.6672 %	50.0000 %	6.3336 %
		NASDAQ	N/A		0.0000 %	0.0000 %
		EMCO	5,948.38		50.0000 %	6.3336 %
Germany	505,174.50	EPEX	154,321.31	15.7488 %	33.3333 %	5.2496 %
		EMCO	33,294.87		33.3333 %	5.2496 %
		NASDAQ	N/A		0.0000 %	0.0000 %
		EXAA	8,943.82		33.3333 %	5.2496 %
Greece	50,554.44	HENEX	56,803.25	2.6658 %	100.0000 %	2.6658 %
Hungary	43,387.00	HUPX	19,142.26	1.8168 %	100.0000 %	1.8168 %
Ireland	29,659.30	EirGRID	33,619.00	1.7606 %	100.0000 %	1.7606 %
		EMCO	0.00		0.0000 %	0.0000 %
Italy	300,887.06	GME	182,439.13	10.7523 %	100.0000 %	10.7523 %
Latvia	6,930.29	EMCO	5,820.25	0.7293 %	83.3333 %	0.6077 %
		EPEX	0.00		16.6667 %	0.1215 %
Lithuania	11,953.60	EMCO	7,611.15	0.8783 %	83.3333 %	0.7319 %
		EPEX	0.00		16.6667 %	0.1464 %

Table 78

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	MS share to be used for sharing of SDAC costs in 2023 – establishing and amending	NEMO share within MS to be used for sharing of SDAC costs in 2023 – establishing and amending	CACM Share - SDAC to be used for sharing of SDAC costs in 2023 – establishing and amending
Luxembourg	6,392.85	EPEX	0.00	0.6113 %	50.0000 %	0.3057 %
		NASDAQ	N/A		0.0000 %	0.0000 %
		EMCO	0.00		50.0000 %	0.3057 %
Netherlands	112,348.57	EPEX	25,135.94	3.7162 %	70.5134 %	2.6204 %
		EMCO	10,511.11		29.4866 %	1.0958 %
Poland	157,314.15	TGE	4,884.04	4.2224 %	65.2966 %	2.7571 %
		EPEX	1,014.84		22.3701 %	0.9446 %
		EMCO	110.16		12.3333 %	0.5208 %
Portugal	48,116.52	OMIE	52,127.60	2.5245 %	100.0000 %	2.5245 %
Romania	49,623.17	OPCOM	23,068.60	2.0327 %	100.0000 %	2.0327 %
Slovakia	26,457.00	OKTE	7,044.73	1.2046 %	100.0000 %	1.2046 %
Slovenia	13,550.05	BSP	2,865.92	0.8293 %	100.0000 %	0.8293 %
Spain	235,025.00	OMIE	174,672.80	9.0832 %	100.0000 %	9.0832 %
Sweden	131,028.00	EMCO	121,551.25	5.9270 %	71.7231 %	4.2511 %
		EPEX	12,141.95		17.1657 %	1.0174 %
		NASDAQ	N/A		11.1111 %	0.6586 %
Northern Ireland (calculated as part of 9 TWh of UK)	9,000.00	SONI	8,085.00	0.8184 %	100.0000 %	0.8184 %
		EMCO	0.00		0.0000 %	0.0000 %
Norway	128,442.63	EPEX	6,209.79	5.9746 %	14.0761 %	0.8410 %
		EMCO	133,415.70		74.8128 %	4.4698 %
		NASDAQ	0.00		11.1111 %	0.6638 %
Total / Checksum	2,693,381.94		1,379,092.74	100.000 %		100.000 %

1.4 The following sharing key was used for sharing of all NEMOs costs of operating the SDAC in 2023

Table 79

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	MS share to be used for sharing of SDAC costs in 2023 – operating	NEMO share within MS to be used for sharing of SDAC costs in 2023 - operating	CACM Share - SDAC to be used for sharing of SDAC costs in 2023 – operating
Austria	66,861,49	EPEX	13,562,47	2,4213 %	53,6496 %	1,2990 %
		EXAA	6,604,74		31,8268 %	0,7706 %
		EMCO	1,088,00		14,5236 %	0,3517 %
Belgium	83,068,70	EPEX	17,518,69	2,8141 %	73,3346 %	2,0637 %
		EMCO	4,609,73		26,6654 %	0,7504 %
Bulgaria	32,088,80	IBEX	27,924,70	1,7334 %	100,0000 %	1,7334 %
Croatia	16,854,40	CROPEX	3,835,12	0,9423 %	100,0000 %	0,9423 %
Czechia	61,303,99	OTE	24,308,06	2,3474 %	100,0000 %	2,3474 %
Denmark	33,602,44	EMCO	20,897,60	1,7508 %	68,3723 %	1,1971 %
		EPEX	6,046,72		31,6277 %	0,5537 %
		NASDAQ	N/A		0,0000 %	0,0000 %
Estonia	8,134,59	EMCO	7,018,00	0,7972 %	83,3333 %	0,6643 %
		EPEX	0,00		16,6667 %	0,1329 %
Finland	83,301,00	EMCO	51,853,55	3,3940 %	80,8953 %	2,7456 %
		EPEX	1,968,28		19,1047 %	0,6484 %
		NASDAQ	N/A		0,0000 %	0,0000 %
France	442,322,44	EPEX	101,074,24	12,7094 %	94,4419 %	12,0030 %
		NASDAQ	N/A		0,0000 %	0,0000 %
		EMCO	5,948,38		5,5581 %	0,7064 %
Germany	505,174,50	EPEX	154,321,31	15,7945 %	33,3333 %	5,2648 %
		EMCO	33,294,87		33,3333 %	5,2648 %
		NASDAQ	N/A		0,0000 %	0,0000 %
		EXAA	8,943,82		33,3333 %	5,2648 %
Greece	50,554,44	HENEX	56,803,25	2,6864 %	100,0000 %	2,6864 %
Hungary	43,387,00	HUPX	19,142,26	1,8370 %	100,0000 %	1,8370 %
Ireland	29,659,30	EirGRID	33,619,00	1,7801 %	100,0000 %	1,7801 %
		EMCO	0,00		0,0000 %	0,0000 %
Italy	300,887,06	GME	182,439,13	10,7867 %	100,0000 %	10,7867 %
Latvia	6,930,29	EMCO	5,820,25	0,7475 %	83,3333 %	0,6229 %
		EPEX	0,00		16,6667 %	0,1246 %
Lithuania	11,953,60	EMCO	7,611,15	0,8968 %	83,3333 %	0,7473 %
		EPEX	0,00		16,6667 %	0,1495 %
Luxembourg	6,392,85	EPEX	0,00	0,0000 %	0,0000 %	0,0000 %
		NASDAQ	N/A		0,0000 %	0,0000 %
		EMCO	0,00		0,0000 %	0,0000 %

Table 79

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	MS share to be used for sharing of SDAC costs in 2023 – operating	NEMO share within MS to be used for sharing of SDAC costs in 2023 - operating	CACM Share - SDAC to be used for sharing of SDAC costs in 2023 – operating
Netherlands	112,348,57	EPEX	25,135,94	3,7402 %	70,5134 %	2,6374 %
		EMCO	10,511,11		29,4866 %	1,1029 %
Poland	157,314,15	TGE	4,884,04	4,2489 %	65,2966 %	2,7744 %
		EPEX	1,014,84		22,3701 %	0,9505 %
		EMCO	110,16		12,3333 %	0,5240 %
Portugal	48,116,52	OMIE	52,127,60	2,5449 %	100,0000 %	2,5449 %
Romania	49,623,17	OPCOM	23,068,60	2,0532 %	100,0000 %	2,0532 %
Slovakia	26,457,00	OKTE	7,044,73	1,2239 %	100,0000 %	1,2239 %
Slovenia	13,550,05	BSP	2,865,92	0,8479 %	100,0000 %	0,8479 %
Spain	235,025,00	OMIE	174,672,80	9,1140 %	100,0000 %	9,1140 %
Sweden	131,028,00	EMCO	121,551,25	5,9521 %	77,2787 %	4,5997 %
		EPEX	12,141,95		22,7213 %	1,3524 %
		NASDAQ	N/A		0,0000 %	0,0000 %
Northern Ireland (calculated as part of 9 TWh of UK)	9,000,00	SONI	8,085,00	0,8367 %	100,0000 %	0,8367 %
		EMCO	0,00		0,0000 %	0,0000 %
Norway	128,442,63	EPEX	6,209,79	5,9995 %	19,6316 %	1,1778 %
		EMCO	133,415,70		80,3684 %	4,8217 %
		NASDAQ	0,00		0,0000 %	0,0000 %
Total / Checksum	2,693,381,94		1,379,092,74	100,000 %		100,000 %

1.5 The following sharing key was used for the sharing of all TSOs costs of establishing and amending the SDAC in 2023:

Table 80

Member State	Parties	Final Consumption of 2021 of SDAC Operational MS	Traded volume (TV) 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
Austria	APG		0		100.00 %	2.400 %
Austria	EPEX		13,562		0.00 %	0.000 %
Austria	EXAA		6,605		0.00 %	0.000 %
Austria	EMCO		1,088		0.00 %	0.000 %
Austria		66,861	21,255	2.400 %	100.00 %	2.400 %
Belgium	ELIA		0		100.00 %	2.792 %
Belgium	EPEX		17,519		0.00 %	0.000 %
Belgium	EMCO		4,610		0.00 %	0.000 %
Belgium		83,069	22,128	2.792 %	100.00 %	2.792 %
Bulgaria	ESO		0		100.00 %	1.714 %
Bulgaria	IBEX		27,925		0.00 %	0.000 %
Bulgaria		32,089	27,925	1.714 %	100.00 %	1.714 %
Croatia	HOPS		0		100.00 %	0.924 %
Croatia	Cropex		3,835		0.00 %	0.000 %
Croatia		16,854	3,835	0.924 %	100.00 %	0.924 %
Czech Republic	ČEPS		0		100.00 %	2.326 %
Czech Republic	OTE		24,308		0.00 %	0.000 %
Czech Republic		61,304	24,308	2.326 %	100.00 %	2.326 %
Denmark	Energinet		0		100.00 %	1.731 %
Denmark	EMCO		20,898		0.00 %	0.000 %
Denmark	EPEX		6,047		0.00 %	0.000 %
Denmark	Nasdaq		0		0.00 %	0.000 %
Denmark		33,602	26,944	1.731 %	100.00 %	1.731 %
Estonia	Elering		0		100.00 %	0.779 %
Estonia	EMCO		7,018		0.00 %	0.000 %
Estonia	EPEX		0		0.00 %	0.000 %
Estonia		8,135	7,018	0.779 %	100.00 %	0.779 %
Finland	Fingrid		0		99.50 %	3.355 %
Finland	Kraftnät Åland		0		0.50 %	0.017 %
Finland	EMCO		51,854		0.00 %	0.000 %
Finland	EPEX		1,968		0.00 %	0.000 %
Finland	Nasdaq		0		0.00 %	0.000 %
Finland		83,301	53,822	3.372 %	100.00 %	3.372 %

Table 80

Member State	Parties	Final Consumption of 2021 of SDAC Operational MS	Traded volume (TV) 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
France	RTE		0		100.00 %	12.667 %
France	EPEX		101,074		0.00 %	0.000 %
France	EMCO		5,948		0.00 %	0.000 %
France		442,322	107,023	12.667 %	100.00 %	12.667 %
Germany	50Hertz		0		22.06 %	3.474 %
Germany	Amprion		0		31.64 %	4.983 %
Germany	TenneT DE		0		28.04 %	4.415 %
Germany	Transnet		0		17.27 %	2.719 %
Germany	Baltic Cable		0		1.00 %	0.157 %
Germany	EPEX		154,321		0.00 %	0.000 %
Germany	EMCO		33,295		0.00 %	0.000 %
Germany	EXAA		8,944		0.00 %	0.000 %
Germany	Nasdaq		0		0.00 %	0.000 %
Germany		505,175	196,560	15.749 %	100.00 %	15.749 %
Greece	ADMIE		0		100.00 %	2.666 %
Greece	Henex		56,803		0.00 %	0.000 %
Greece		50,554	56,803	2.666 %	100.00 %	2.666 %
Hungary	Mavir		0		100.00 %	1.817 %
Hungary	HUPX		19,142		0.00 %	0.000 %
Hungary		43,387	19,142	1.817 %	100.00 %	1.817 %
Ireland	EirGrid (TSO)		0		100.00 %	1.761 %
Ireland	EirGrid (NEMO)		33,619		0.00 %	0.000 %
Ireland	EMCO		0		0.00 %	0.000 %
Ireland		29,659	33,619	1.761 %	100.00 %	1.761 %
Italy	Terna		0		100.00 %	10.752 %
Italy	GME		182,439		0.00 %	0.000 %
Italy		300,887	182,439	10.752 %	100.00 %	10.752 %
Latvia	AST		0		100.00 %	0.729 %
Latvia	EMCO		5,820		0.00 %	0.000 %
Latvia	EPEX		0		0.00 %	0.000 %
Latvia		6,930	5,820	0.729 %	100.00 %	0.729 %

Table 80

Member State	Parties	Final Consumption of 2021 of SDAC Operational MS	Traded volume (TV) 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
Lithuania	Litgrid		0		100.00 %	0.878 %
Lithuania	EMCO		7,611		0.00 %	0.000 %
Lithuania	EPEX		0		0.00 %	0.000 %
Lithuania		11,954	7,611	0.878 %	100.00 %	0.878 %
Luxembourg	CREOS		0		100.00 %	0.611 %
Luxembourg	EPEX		0		0.00 %	0.000 %
Luxembourg	EMCO		0		0.00 %	0.000 %
Luxembourg	Nasdaq		0		0.00 %	0.000 %
Luxembourg		6,393	0	0.611 %	100.00 %	0.611 %
Netherlands	TenneT BV		0		100.00 %	3.716 %
Netherlands	EPEX		25,136		0.00 %	0.000 %
Netherlands	EMCO		10,511		0.00 %	0.000 %
Netherlands		112,349	35,647	3.716 %	100.00 %	3.716 %
Poland	PSE		0		100.00 %	4.222 %
Poland	TGE		4,884		0.00 %	0.000 %
Poland	EPEX		1,015		0.00 %	0.000 %
Poland	EMCO		110		0.00 %	0.000 %
Poland		157,314	6,009	4.222 %	100.00 %	4.222 %
Portugal	REN		0		100.00 %	2.524 %
Portugal	OMIE		52,128		0.00 %	0.000 %
Portugal		48,117	52,128	2.524 %	100.00 %	2.524 %
Romania	Transelectrica		0		100.00 %	2.033 %
Romania	OPCOM		23,069		0.00 %	0.000 %
Romania		49,623	23,069	2.033 %	100.00 %	2.033 %
Slovakia	SEPS		0		100.00 %	1.205 %
Slovakia	OKTE		7,045		0.00 %	0.000 %
Slovakia		26,457	7,045	1.205 %	100.00 %	1.205 %
Slovenia	ELES		0		100.00 %	0.829 %
Slovenia	BSP		2,866		0.00 %	0.000 %
Slovenia		13,550	2,866	0.829 %	100.00 %	0.829 %
Spain	REE		0		100.00 %	9.083 %
Spain	OMIE		174,673		0.00 %	0.000 %
Spain		235,025	174,673	9.083 %	100.00 %	9.083 %

Table 80

Member State	Parties	Final Consumption of 2021 of SDAC Operational MS	Traded volume (TV) 2022 DA (GWh) to be used for sharing of SDAC costs in 2023	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
Sweden	Affärsverket svenska kraftnät		0		100.00 %	5.927 %
Sweden	EMCO		121,551		0.00 %	0.000 %
Sweden	EPEX		12,142		0.00 %	0.000 %
Sweden	Nasdaq		0		0.00 %	0.000 %
Sweden		131,028	133,693	5.927 %	100.00 %	5.927 %
Northern Ireland	EMCO		0		0.00 %	0.000 %
Northern Ireland	SONI (TSO)		0		100.00 %	0.818 %
Northern Ireland	SONI (NEMO)		8,085		0.00 %	0.000 %
Northern Ireland		9,000	8,085	0.818 %	100.00 %	0.818 %
Norway	Statnett		0		100.00 %	5.975 %
Norway	EPEX		6,210		0.00 %	0.000 %
Norway	EMCO		133,416		0.00 %	0.000 %
Norway		128,443	139,625	5.975 %	100.00 %	5.975 %

1.6 The following sharing key was used for the sharing of all TSOs costs of Operating the SDAC in 2023:

Table 81

Member State	Parties	Final Consumption of 2021 (GWh)	Traded volume (TV) 2022 DA (GWh)	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
Austria	APG		0		100.00 %	2.421 %
Austria	EPEX		13,562		0.00 %	0.000 %
Austria	EXAA		6,605		0.00 %	0.000 %
Austria	EMCO		1,088		0.00 %	0.000 %
Austria		66,861	21,255	2.421 %	100.00 %	2.421 %
Belgium	ELIA		0		100.00 %	2.814 %
Belgium	EPEX		17,519		0.00 %	0.000 %
Belgium	EMCO		4,610		0.00 %	0.000 %
Belgium		83,069	22,128	2.814 %	100.00 %	2.814 %
Bulgaria	ESO		0		100.00 %	1.733 %
Bulgaria	IBEX		27,925		0.00 %	0.000 %
Bulgaria		32,089	27,925	1.733 %	100.00 %	1.733 %
Croatia	HOPS		0		100.00 %	0.942 %
Croatia	Cropex		3,835		0.00 %	0.000 %
Croatia		16,854	3,835	0.942 %	100.00 %	0.942 %

Table 81

Member State	Parties	Final Consumption of 2021 (GWh)	Traded volume (TV) 2022 DA (GWh)	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
Czech Republic	ČEPS		0		100.00 %	2.347 %
Czech Republic	OTE		24,308		0.00 %	0.000 %
Czech Republic		61,304	24,308	2.347 %	100.00 %	2.347 %
Denmark	Energinet		0		100.00 %	1.751 %
Denmark	EMCO		20,898		0.00 %	0.000 %
Denmark	EPEX		6,047		0.00 %	0.000 %
Denmark	Nasdaq		0		0.00 %	0.000 %
Denmark		33,602	26,944	1.751 %	100.00 %	1.751 %
Estonia	Elering		0		100.00 %	0.797 %
Estonia	EMCO		7,018		0.00 %	0.000 %
Estonia	EPEX		0		0.00 %	0.000 %
Estonia		8,135	7,018	0.797 %	100.00 %	0.797 %
Finland	Fingrid		0		99.50 %	3.377 %
Finland	Kraftnät Åland		0		0.50 %	0.017 %
Finland	EMCO		51,854		0.00 %	0.000 %
Finland	EPEX		1,968		0.00 %	0.000 %
Finland	Nasdaq		0		0.00 %	0.000 %
Finland		83,301	53,822	3.394 %	100.00 %	3.394 %
France	RTE		0		100.00 %	12.709 %
France	EPEX		101,074		0.00 %	0.000 %
France	EMCO		5,948		0.00 %	0.000 %
France		442,322	107,023	12.709 %	100.00 %	12.709 %
Germany	50Hertz		0		22.06 %	3.484 %
Germany	Amprion		0		31.64 %	4.997 %
Germany	TenneT DE		0		28.04 %	4.428 %
Germany	Transnet		0		17.27 %	2.727 %
Germany	Baltic Cable		0		1.00 %	0.158 %
Germany	EPEX		154,321		0.00 %	0.000 %
Germany	EMCO		33,295		0.00 %	0.000 %
Germany	EXAA		8,944		0.00 %	0.000 %
Germany	Nasdaq		0		0.00 %	0.000 %
Germany		505,175	196,560	15.794 %	100.00 %	15.794 %
Greece	ADMIE		0		100.00 %	2.686 %
Greece	Henex		56,803		0.00 %	0.000 %

Table 81

Member State	Parties	Final Consumption of 2021 (GWh)	Traded volume (TV) 2022 DA (GWh)	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
Greece		50,554	56,803	2.686 %	100.00 %	2.686 %
Hungary	Mavir		0		100.00 %	1.837 %
Hungary	HUPX		19,142		0.00 %	0.000 %
Hungary		43,387	19,142	1.837 %	100.00 %	1.837 %
Ireland	EirGrid (TSO)		0		100.00 %	1.780 %
Ireland	EirGrid (NEMO)		33,619		0 %	0.000 %
Ireland	EMCO		0		0 %	0.000 %
Ireland		29,659	33,619	1.780 %	100.00 %	1.780 %
Italy	Terna		0		100.00 %	10.787 %
Italy	GME		182,439		0.00 %	0.000 %
Italy		300,887	182,439	10.787 %	100.00 %	10.787 %
Latvia	AST		0		100.00 %	0.747 %
Latvia	EMCO		5,820		0.00 %	0.000 %
Latvia	EPEX		0		0.00 %	0.000 %
Latvia		6,930	5,820	0.747 %	100.00 %	0.747 %
Lithuania	Litgrid		0		100.00 %	0.897 %
Lithuania	EMCO		7,611		0.00 %	0.000 %
Lithuania	EPEX		0		0.00 %	0.000 %
Lithuania		11,954	7,611	0.897 %	100.00 %	0.897 %
Luxembourg	CREOS					
Luxembourg	EPEX					
Luxembourg	EMCO					
Luxembourg	Nasdaq					
Luxembourg						
Netherlands	TenneT BV		0		100.00 %	3.740 %
Netherlands	EPEX		25,136		0.00 %	0.000 %
Netherlands	EMCO		10,511		0.00 %	0.000 %
Netherlands		112,349	35,647	3.740 %	100.00 %	3.740 %
Poland	PSE		0		100.00 %	4.249 %
Poland	TGE		4,884		0.00 %	0.000 %
Poland	EPEX		1,015		0.00 %	0.000 %
Poland	EMCO		110		0.00 %	0.000 %
Poland		157,314	6,009	4.249 %	100.00 %	4.249 %

Table 81

Member State	Parties	Final Consumption of 2021 (GWh)	Traded volume (TV) 2022 DA (GWh)	Shares MS as used for the costs as of 2023	Share within MS as used for the costs of 2023	Shares per TSO for the costs as of 2023
Portugal	REN		0		100.00 %	2.545 %
Portugal	OMIE		52,128		0.00 %	0.000 %
Portugal		48,117	52,128	2.545 %	100.00 %	2.545 %
Romania	Transelectrica		0		100.00 %	2.053 %
Romania	OPCOM		23,069		0.00 %	0.000 %
Romania		49,623	23,069	2.053 %	100.00 %	2.053 %
Slovakia	SEPS		0		100.00 %	1.224 %
Slovakia	OKTE		7,045		0.00 %	0.000 %
Slovakia		26,457	7,045	1.224 %	100.00 %	1.224 %
Slovenia	ELES		0		100.00 %	0.848 %
Slovenia	BSP		2,866		0.00 %	0.000 %
Slovenia		13,550	2,866	0.848 %	100.00 %	0.848 %
Spain	REE		0		100.00 %	9.114 %
Spain	OMIE		174,673		0.00 %	0.000 %
Spain		235,025	174,673	9.114 %	100.00 %	9.114 %
Sweden	Affärsverket svenska kraftnät		0		100.00 %	5.952 %
Sweden	EMCO		121,551		0.00 %	0.000 %
Sweden	EPEX		12,142		0.00 %	0.000 %
Sweden	Nasdaq		0		0.00 %	0.000 %
Sweden		131,028	133,693	5.952 %	100.00 %	5.952 %
Northern Ireland	EMCO		0		0.00 %	0.000 %
Northern Ireland	SONI (TSO)		0		100.00 %	0.837 %
Northern Ireland	SONI (NEMO)		8,085		0.00 %	0.000 %
Northern Ireland		9,000	8,085	0.837 %	100.00 %	0.837 %
Norway	Statnett		0		100.00 %	5.999 %
Norway	EPEX		6,210		0.00 %	0.000 %
Norway	EMCO		133,416		0.00 %	0.000 %
Norway		128,443	139,625	5.999 %	100.00 %	5.999 %

2.1 The following sharing key was used for the sharing of all TSOs and NEMOs costs of establishing and amending the SIDC in 2023:

Table 82

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
Austria	APG		0		50.000 %	1.318 %
Austria	EPEX		3,925		37.124 %	0.978 %
Austria	EXAA		0		0.000 %	0.000 %
Austria	EMCO		619		12.876 %	0.339 %
Austria		66,861	4,544	2.635 %	100.000 %	2.635 %
Belgium	ELIA		0		50.000 %	1.581 %
Belgium	EPEX		3,702		40.972 %	1.295 %
Belgium	EMCO		415		9.028 %	0.285 %
Belgium		83,069	4,117	3.162 %	100.000 %	3.162 %
Bulgaria	ESO		0		50.000 %	0.753 %
Bulgaria	IBEX		1,188		50.000 %	0.753 %
Bulgaria		32,089	1,188	1.505 %	100.000 %	1.505 %
Croatia	HOPS		0		50.000 %	0.505 %
Croatia	Cropex		420		50.000 %	0.505 %
Croatia		16,854	420	1.011 %	100.000 %	1.011 %
Czech Republic	ČEPS		0		50.000 %	1.227 %
Czech Republic	OTE		5,111		50.000 %	1.227 %
Czech Republic		61,304	5,111	2.455 %	100.000 %	2.455 %
Denmark	Energinet		0		50.000 %	0.777 %
Denmark	EMCO		1,270		17.653 %	0.274 %
Denmark	EPEX		3,271		32.347 %	0.503 %
Denmark	Nasdaq		0		0.000 %	0.000 %
Denmark		33,602	4,541	1.555 %	100.000 %	1.555 %
Estonia	Elering		0		50.000 %	0.364 %
Estonia	EMCO		274		41.665 %	0.303 %
Estonia	EPEX		0		8.335 %	0.061 %
Estonia		8,135	274	0.727 %	100.000 %	0.727 %
Finland	Fingrid		0		50.000 %	1.585 %
Finland	EMCO		1,232		38.239 %	1.212 %
Finland	EPEX		141		11.761 %	0.373 %
Finland	Nasdaq		0		0.000 %	0.000 %
Finland		83,301	1,374	3.169 %	100.000 %	3.169 %
France	RTE		0		50.000 %	7.416 %

Table 82

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
France	EPEX		12,708		25.000 %	3.708 %
France	EMCO		610		25.000 %	3.708 %
France	Nasdaq		0		0.000 %	0.000 %
France		442,322	13,318	14.833 %	100.000 %	14.833 %
Germany	50Hertz		0		22.280 %	3.760 %
Germany	Amprion		0		31.960 %	5.393 %
Germany	TenneT DE		0		28.320 %	4.779 %
Germany	Transnet		0		17.440 %	2.943 %
Germany	EPEX		40,918		0.000 %	0.000 %
Germany	EMCO		8,795		0.000 %	0.000 %
Germany	EXAA		0		0.000 %	0.000 %
Germany	Nasdaq		0		0.000 %	0.000 %
Germany		505,175	49,713	16.875 %	100.000 %	16.875 %
Greece	ADMIE		0		50.000 %	1.053 %
Greece	Henex		347		50.000 %	1.053 %
Greece		50,554	347	2.105 %	100.000 %	2.105 %
Hungary	Mavir		0		50.000 %	0.936 %
Hungary	HUPX		2,535		50.000 %	0.936 %
Hungary		43,387	2,535	1.872 %	100.000 %	1.872 %
Ireland	EirGrid (TSO)		0		50.000 %	0.713 %
Ireland	EirGrid (NEMO)		0		50.000 %	0.713 %
Ireland	EMCO		0		0.000 %	0.000 %
Ireland		29,659	0	1.427 %	100.000 %	1.427 %
Italy	Terna		0		50.000 %	5.119 %
Italy	GME		2,675		50.000 %	5.119 %
Italy		300,887	2,675	10.238 %	100.000 %	10.238 %
Latvia	AST		0		50.000 %	0.344 %
Latvia	EMCO		149		41.667 %	0.287 %
Latvia	EPEX		0		8.333 %	0.057 %
Latvia		6,930	149	0.688 %	100.000 %	0.688 %
Lithuania	Litgrid		0		50.000 %	0.426 %
Lithuania	EMCO		177		41.667 %	0.355 %

Table 82

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
Lithuania	EPEX		0		8.333 %	0.071 %
Lithuania		11,954	177	0.851 %	100.000 %	0.851 %
Luxembourg	CREOS		0		100.000 %	0.671 %
Luxembourg	EPEX		0		0.000 %	0.000 %
Luxembourg	EMCO		0		0.000 %	0.000 %
Luxembourg	Nasdaq		0		0.000 %	0.000 %
Luxembourg		6,393	0	0.671 %	100.000 %	0.671 %
Netherlands	Tennet BV		0		50.000 %	2.056 %
Netherlands	EPEX		7,457		46.280 %	1.903 %
Netherlands	EMCO		599		3.720 %	0.153 %
Netherlands		112,349	8,057	4.113 %	100.000 %	4.113 %
Poland	PSE		0		50.000 %	2.787 %
Poland	TGE		1,331		29.829 %	1.663 %
Poland	EPEX		200		5.556 %	0.310 %
Poland	EMCO		497		14.616 %	0.815 %
Poland		157,314	2,028	5.574 %	100.000 %	5.574 %
Portugal	REN		0		50.000 %	1.013 %
Portugal	OMIE		1,057		50.000 %	1.013 %
Portugal		48,117	1,057	2.026 %	100.000 %	2.026 %
Romania	Transelectrica		0		50.000 %	1.038 %
Romania	OPCOM		607		50.000 %	1.038 %
Romania		49,623	607	2.075 %	100.000 %	2.075 %
Slovakia	SEPS		0		50.000 %	0.661 %
Slovakia	OKTE		25		50.000 %	0.661 %
Slovakia		26,457	25	1.322 %	100.000 %	1.322 %
Slovenia	ELES		0		50.000 %	0.452 %
Slovenia	BSP		1,025		50.000 %	0.452 %
Slovenia		13,550	1,025	0.903 %	100.000 %	0.903 %
Spain	REE		0		50.000 %	4.049 %
Spain	OMIE		6,120		50.000 %	4.049 %
Spain		235,025	6,120	8.098 %	100.000 %	8.098 %
Sweden	Affärsverket svenska kraftnät		0		50.000 %	2.360 %
Sweden	EMCO		2,707		29.488 %	1.392 %
Sweden	EPEX		1,558		20.512 %	0.968 %
Sweden	Nasdaq		0		0.000 %	0.000 %

Table 82

Member State	Parties	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
Sweden		131,028	4,265	4.720 %	100.000 %	4.720 %
Northern Ireland	EMCO		0		0.000 %	0.000 %
Northern Ireland	SONI (TSO)		0		100.000 %	0.755 %
Northern Ireland	SONI (NEMO)		0		0.000 %	0.000 %
Northern Ireland		9,000	0	0.755 %	100.000 %	0.755 %
Norway	Statnett		0		50.000 %	2.318 %
Norway	EPEX		674		18.665 %	0.865 %
Norway	Nasdaq		0		0.000 %	0.000 %
Norway	EMCO		1,500		31.335 %	1.453 %
Norway		128,443	2,174	4.636 %	100.000 %	4.636 %

2.2 The following sharing key was used for the sharing of all TSOs and NEMOs costs of operating the SIDC in 2023:

Table 83

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
Austria	APG	AustriaAPG		0		50.000 %	1.365 %
Austria	EPEX	AustriaEPEX		3,925		37.124 %	1.013 %
Austria	EXAA	AustriaEXAA		0		0.000 %	0.000 %
Austria	EMCO	AustriaEMCO		619		12.876 %	0.352 %
Austria			66,861	4,544	2.730 %	100.000 %	2.730 %
Belgium	ELIA	BelgiumELIA		0		50.000 %	1.633 %
Belgium	EPEX	BelgiumEPEX		3,702		40.972 %	1.338 %
Belgium	EMCO	BelgiumEMCO		415		9.028 %	0.295 %
Belgium			83,069	4,117	3.265 %	100.000 %	3.265 %
Bulgaria	ESO	BulgariaESO		0		50.000 %	0.791 %
Bulgaria	IBEX	BulgariaIBEX		1,188		50.000 %	0.791 %
Bulgaria			32,089	1,188	1.581 %	100.000 %	1.581 %
Croatia	HOPS	CroatiaHOPS		0		50.000 %	0.539 %
Croatia	Cropex	CroatiaCropex		420		50.000 %	0.539 %
Croatia			16,854	420	1.078 %	100.000 %	1.078 %

Table 83

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
Czech Republic	ČEPS	Czech RepublicCEPS		0		50.000 %	1.273 %
Czech Republic	OTE	Czech RepublicOTE		5,111		50.000 %	1.273 %
Czech Republic			61,304	5,111	2.546 %	100.000 %	2.546 %
Denmark	Energinet	DenmarkEnerginet		0		50.000 %	0.816 %
Denmark	EMCO	DenmarkEMCO		1,270		17.653 %	0.288 %
Denmark	EPEX	DenmarkEPEX		3,271		32.347 %	0.528 %
Denmark	Nasdaq	DenmarkNasdaq		0		0.000 %	0.000 %
Denmark			33,602	4,541	1.631 %	100.000 %	1.631 %
Estonia	Elering	EstoniaElering		0		50.000 %	0.395 %
Estonia	EMCO	EstoniaEMCO		274		41.665 %	0.329 %
Estonia	EPEX	EstoniaEPEX		0		8.335 %	0.066 %
Estonia			8,135	274	0.790 %	100.000 %	0.790 %
Finland	Fingrid	FinlandFingrid		0		50.000 %	1.637 %
Finland	EMCO	FinlandEMCO		1,232		38.239 %	1.252 %
Finland	EPEX	FinlandEPEX		141		11.761 %	0.385 %
Finland	Nasdaq	FinlandNasdaq		0		0.000 %	0.000 %
Finland			83,301	1,374	3.273 %	100.000 %	3.273 %
France	RTE	FranceRTE		0		50.000 %	7.568 %
France	EPEX	FranceEPEX		12,708		47.710 %	7.221 %
France	EMCO	FranceEMCO		610		2.290 %	0.347 %
France	Nasdaq	FranceNasdaq		0		0.000 %	0.000 %
France			442,322	13,318	15.135 %	100.000 %	15.135 %
Germany	50Hertz	Germany50Hertz		0		22.280 %	3.835 %
Germany	Amprion	GermanyAmprion		0		31.960 %	5.501 %
Germany	TenneT DE	GermanyTennet DE		0		28.320 %	4.874 %
Germany	Transnet	GermanyTransnet		0		17.440 %	3.002 %
Germany	EPEX	GermanyEPEX		40,918		0.000 %	0.000 %
Germany	EMCO	GermanyEMCO		8,795		0.000 %	0.000 %
Germany	EXAA	GermanyEXAA		0		0.000 %	0.000 %
Germany	Nasdaq	GermanyNasdaq		0		0.000 %	0.000 %
Germany			505,175	49,713	17.212 %	100.000 %	17.212 %
Greece	ADMIE	GreeceADMIE		0		50.000 %	1.096 %
Greece	Henex	GreeceHenex		347		50.000 %	1.096 %
Greece			50,554	347	2.191 %	100.000 %	2.191 %
Hungary	Mavir	HungaryMavir		0		50.000 %	0.977 %

Table 83

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
Hungary	HUPX	HungaryHUPX		2,535		50.000 %	0.977 %
Hungary			43,387	2,535	1.954 %	100.000 %	1.954 %
Ireland	EirGrid (TSO)	IrelandEirGrid (TSO)					
Ireland	EirGrid (NEMO)	IrelandEirGrid (NEMO)					
Ireland	EMCO	IrelandEMCO					
Ireland							
Italy	Terna	ItalyTerna		0		50.000 %	5.231 %
Italy	GME	ItalyGME		2,675		50.000 %	5.231 %
Italy			300,887	2,675	10.462 %	100.000 %	10.462 %
Latvia	AST	LatviaAST		0		50.000 %	0.375 %
Latvia	EMCO	LatviaEMCO		149		41.667 %	0.312 %
Latvia	EPEX	LatviaEPEX		0		8.333 %	0.062 %
Latvia			6,930	149	0.750 %	100.000 %	0.750 %
Lithuania	Litgrid	LithuaniaLitgrid		0		50.000 %	0.458 %
Lithuania	EMCO	LithuaniaEMCO		177		41.667 %	0.382 %
Lithuania	EPEX	LithuaniaEPEX		0		8.333 %	0.076 %
Lithuania			11,954	177	0.916 %	100.000 %	0.916 %
Luxembourg	CREOS	LuxembourgCREOS					
Luxembourg	EPEX	LuxembourgEPEX					
Luxembourg	EMCO	LuxembourgEMCO					
Luxembourg	Nasdaq	LuxembourgNasdaq					
Luxembourg							
Netherlands	TenneT BV	NetherlandsTennet BV		0		50.000 %	2.116 %
Netherlands	EPEX	NetherlandsEPEX		7,457		46.280 %	1.959 %
Netherlands	EMCO	NetherlandsEMCO		599		3.720 %	0.157 %
Netherlands			112,349	8,057	4.233 %	100.000 %	4.233 %
Poland	PSE	PolandPSE		0		50.000 %	2.859 %
Poland	TGE	PolandTGE		1,331		29.829 %	1.706 %
Poland	EPEX	PolandEPEX		200		5.556 %	0.318 %
Poland	EMCO	PolandEMCO		497		14.616 %	0.836 %
Poland			157,314	2,028	5.718 %	100.000 %	5.718 %
Portugal	REN	PortugalREN		0		50.000 %	1.055 %
Portugal	OMIE	PortugalOMIE		1,057		50.000 %	1.055 %
Portugal			48,117	1,057	2.111 %	100.000 %	2.111 %

Table 83

Member State	Parties	CONCATENATE	Final Consumption of 2021 – Used for the costs of 2023	Traded volume (TV) 2022 ID (GWh) – Used for the costs of 2023	Shares MS Used for the costs of 2023	Share within MS	Shares per Party used for the costs of 2023
Romania	Transelectrica	RomaniaTranselectrica		0		50.000 %	1.080 %
Romania	OPCOM	RomaniaOPCOM		607		50.000 %	1.080 %
Romania			49,623	607	2.160 %	100.000 %	2.160 %
Slovakia	SEPS	SlovakiaSEPS		0		50.000 %	0.697 %
Slovakia	OKTE	SlovakiaOKTE		25		50.000 %	0.697 %
Slovakia			26,457	25	1.395 %	100.000 %	1.395 %
Slovenia	ELES	SloveniaELES		0		50.000 %	0.484 %
Slovenia	BSP	SloveniaBSP		1,025		50.000 %	0.484 %
Slovenia			13,550	1,025	0.969 %	100.000 %	0.969 %
Spain	REE	SpainREE		0		50.000 %	4.143 %
Spain	OMIE	SpainOMIE		6,120		50.000 %	4.143 %
Spain			235,025	6,120	8.286 %	100.000 %	8.286 %
Sweden	Affärsverket svenska kraftnät	SwedenAffärsverket svenska kraftnät		0		50.000 %	2.425 %
Sweden	EMCO	SwedenEMCO		2,707		29.488 %	1.430 %
Sweden	EPEX	SwedenEPEX		1,558		20.512 %	0.995 %
Sweden	Nasdaq	SwedenNasdaq		0		0.000 %	0.000 %
Sweden			131,028	4,265	4.850 %	100.000 %	4.850 %
Northern Ireland	EMCO	Northern IrelandEMCO					
Northern Ireland	SONI (TSO)	Northern IrelandSONI (TSO)					
Northern Ireland	SONI (NEMO)	Northern IrelandSONI (NEMO)					
Northern Ireland							
Norway	Statnett	NorwayStatnett		0		50.000 %	2.382 %
Norway	EPEX	NorwayEPEX		674		18.665 %	0.889 %
Norway	Nasdaq	NorwayNasdaq		0		0.000 %	0.000 %
Norway	EMCO	NorwayEMCO		1,500		31.335 %	1.493 %
Norway			128,443	2,174	4.765 %	100.000 %	4.765 %

2.3 The following sharing key was used for the sharing of all NEMOs costs of establishing and amending the SIDC in 2023:

Table 84

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 ID (GWh) – used only for sharing calc. in some MNA areas	MS share to be used for sharing of SIDC costs in 2023 – establishing and amending	NEMO share within MS to be used for sharing of SIDC costs in 2023 – establishing and amending	CACM Share – SIDC to be used for sharing of SIDC costs in 2023 – establishing and amending
Austria	66,861.49	EPEX	3,924.63	2.6351 %	74.2472 %	1.9565 %
		EXAA	0.00			
		EMCO	619.30		25.7528 %	0.6786 %
Belgium	83,068.70	EPEX	3,702.10	3.1616 %	81.9448 %	2.5908 %
		EMCO	414.50		18.0552 %	0.5708 %
Bulgaria	32,088.80	IBEX	1,187.80	1.5054 %	100.0000 %	1.5054 %
Croatia	16,854.40	CROPEX	419.80	1.0105 %	100.0000 %	1.0105 %
Czechia	61,303.99	OTE	5,110.54	2.4545 %	100.0000 %	2.4545 %
Denmark	33,602.44	EMCO	1,269.50	1.5546 %	35.3058 %	0.5489 %
		EPEX	3,271.12		64.6942 %	1.0057 %
		NASDAQ				0.0000 %
Estonia	8,134.59	EMCO	274.10	0.7272 %	83.3333 %	0.6060 %
		EPEX	0.00		16.6667 %	0.1212 %
Finland	83,301.00	EMCO	1,232.45	3.1692 %	76.4775 %	2.4237 %
		EPEX	141.27		23.5225 %	0.7455 %
		NASDAQ				
France	442,322.44	EPEX	12,708.20	14.8327 %	50.0000 %	7.4164 %
		NASDAQ				
		EMCO	610.00		50.0000 %	7.4164 %
Germany	505,174.50	EPEX	40,918.21	16.8746 %	50.0000 %	8.4373 %
		EMCO	8,794.75		50.0000 %	8.4373 %
		NASDAQ				
		EXAA	0.00			
Greece	50,554.44	HENEX	3,465.89	2.1053 %	100.0000 %	2.1053 %
Hungary	43,387.00	HUPX	2,534.53	1.8725 %	100.0000 %	1.8725 %
Ireland	29,659.30	EirGRID	0.00	1.4265 %	100.0000 %	1.4265 %
		EMCO	0.00		0.0000 %	0.0000 %
Italy	300,887.06	GME	2,674.94	10.2379 %	100.0000 %	10.2379 %
Latvia	6,930.29	EMCO	149.05	0.6881 %	83.3333 %	0.5734 %
		EPEX	0.00		16.6667 %	0.1147 %
Lithuania	11,953.60	EMCO	176.80	0.8513 %	83.3333 %	0.7094 %
		EPEX	0.00		16.6667 %	0.1419 %

Table 84

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 ID (GWh) – used only for sharing calc. in some MNA areas	MS share to be used for sharing of SIDC costs in 2023 – establishing and amending	NEMO share within MS to be used for sharing of SIDC costs in 2023 – establishing and amending	CACM Share – SIDC to be used for sharing of SIDC costs in 2023 – establishing and amending
Luxembourg	6,392,85	EPEX	0.00	0.6706 %	50.0000 %	0.3353 %
		NASDAQ				
		EMCO	0.00		50.0000 %	0.3353 %
Netherlands	112,348,57	EPEX	7,457.35	4.1128 %	92.5597 %	3.8068 %
		EMCO	599.45		7.4403 %	0.3060 %
Poland	157,314,15	TGE	1,331.49	5.5736 %	59.6572 %	3.3251 %
		EPEX	199.60		11.1111 %	0.6193 %
		EMCO	497.00		29.2317 %	1.6293 %
Portugal	48,116,52	OMIE	1,057.40	2.0261 %	100.0000 %	2.0261 %
Romania	49,623,17	OPCOM	607.20	2.0751 %	100.0000 %	2.0751 %
Slovakia	26,457,00	OKTE	25.34	1.3225 %	100.0000 %	1.3225 %
Slovenia	13,550,05	BSP	1,024.50	0.9032 %	100.0000 %	0.9032 %
Spain	235,025,00	OMIE	6,120.40	8.0982 %	100.0000 %	8.0982 %
Sweden	131,028,00	EMCO	2,706.65	4.7197 %	58.9755 %	2.7835 %
		EPEX	1,558.26		41.0245 %	1.9362 %
		NASDAQ				
Northern Ireland (calculated as part of 9 TWh of UK)	9,000,00	SONI	0.00	0.7553 %	100.0000 %	0.7553 %
		EMCO	0.00		0.0000 %	0.0000 %
Norway	128,442,63	EPEX	673.78	4.6357 %	37.3310 %	1.7305 %
		EMCO	1,499.95		62.6690 %	2.9051 %
		NASDAQ				
Total / Checksum	2,693,381.94		115,838.54	100.000 %		100.000 %

2.4 The following sharing key was used for the sharing of all NEMOs costs of operating the SIDC in 2023:

Table 85

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 ID (GWh) – used only for sharing calc. in some MNA areas	MS share to be used for sharing of SIDC costs in 2023 – operating	NEMO share within MS to be used for sharing of SIDC costs in 2023 – operating	CACM Share – SIDC to be used for sharing of SIDC costs in 2023 – operating
Austria	66,861.49	EPEX	3,924.63	2.7299 %	74.2472 %	2.0269 %
		EXAA	0,00			0.0000 %
		EMCO	619.30		25.7528 %	0.7030 %
Belgium	83,068.70	EPEX	3,702.10	3.2654 %	81.9448 %	2.6758 %
		EMCO	414.50		18.0552 %	0.5896 %
Bulgaria	32,088.80	IBEX	1,187.80	1.5810 %	100.0000 %	1.5810 %
Croatia	16,854.40	CROPEX	419.80	1.0777 %	100.0000 %	1.0777 %
Czechia	61,303.99	OTE	5,110.54	2.5463 %	100.0000 %	2.5463 %
Denmark	33,602.44	EMCO	1,269.50	1.6310 %	35.3058 %	0.5759 %
		EPEX	3,271.12		64.6942 %	1.0552 %
		NASDAQ				0.0000 %
Estonia	8,134.59	EMCO	274.10	0.7896 %	83.3333 %	0.6580 %
		EPEX	0.00		16.6667 %	0.1316 %
Finland	83,301.00	EMCO	1,232.45	3.2731 %	76.4775 %	2.5032 %
		EPEX	141.27		23.5225 %	0.7699 %
		NASDAQ				0.0000 %
France	442,322.44	EPEX	12,708.20	15.1350 %	95.4198 %	14.4418 %
		NASDAQ				0.0000 %
		EMCO	610.00		4.5802 %	0.6932 %
Germany	505,174.50	EPEX	40,918.21	17.2116 %	50.0000 %	8.6058 %
		EMCO	8,794.75		50.0000 %	8.6058 %
		NASDAQ				0.0000 %
		EXAA	0.00			0.0000 %
Greece	50,554.44	HENEX	3,465.89	2.1911 %	100.0000 %	2.1911 %
Hungary	43,387.00	HUPX	2,534.53	1.9543 %	100.0000 %	1.9543 %
Ireland	29,659.30	EirGRID	0.00	0.0 %		0.0000 %
		EMCO	0.00			0.0000 %
Italy	300,887.06	GME	2,674.94	10.4620 %	100.0000 %	10.4620 %
Latvia	6,930.29	EMCO	149.05	0.7498 %	83.3333 %	0.6248 %
		EPEX	0,00		16.6667 %	0.1250 %

Table 85

MS	Final consumption in 2021 according to Report nrg_cb_e (21/02/2023 23:00) in GWh	Entity	Traded volume 2022 ID (GWh) – used only for sharing calc. in some MNA areas	MS share to be used for sharing of SIDC costs in 2023 – operating	NEMO share within MS to be used for sharing of SIDC costs in 2023 – operating	CACM Share – SIDC to be used for sharing of SIDC costs in 2023 – operating
Lithuania	11,953.60	EMCO	176.80	0.9158 %	83.3333 %	0.7631 %
		EPEX	0,00		16.6667 %	0.1526 %
Luxembourg	6,392.85	EPEX	0,00	0.0 %	50.0000 %	0.0000 %
		NASDAQ				0.0000 %
		EMCO	0,00		50.0000 %	0.0000 %
Netherlands	112,348.57	EPEX	7,457.35	4.2328 %	92.5597 %	3.9179 %
		EMCO	599.45		7.4403 %	0.3149 %
Poland	157,314.15	TGE	1,331.49	5.7184 %	59.6572 %	3.4115 %
		EPEX	199.60		11.1111 %	0.6354 %
		EMCO	497.00		29.2317 %	1.6716 %
Portugal	48,116.52	OMIE	1,057.40	2.1106 %	100.0000 %	2.1106 %
Romania	49,623.17	OPCOM	607.20	2.1604 %	100.0000 %	2.1604 %
Slovakia	26,457.00	OKTE	25.34	1.3950 %	100.0000 %	1.3950 %
Slovenia	13,550.05	BSP	1,024.50	0.9685 %	100.0000 %	0.9685 %
Spain	235,025.00	OMIE	6,120.40	8.2860 %	100.0000 %	8.2860 %
Sweden	131,028.00	EMCO	2,706.65	4.8500 %	58.9755 %	2.8603 %
		EPEX	1,558.26		41.0245 %	1.9897 %
		NASDAQ				0.0000 %
Northern Ireland (calculated as part of 9 TWh of UK)	9,000.00	SONI	0.00	0.0 %	100.0000 %	0.0000 %
		EMCO	0.00		0.0000 %	0.0000 %
Norway	128,442.63	EPEX	673.78	4.6357 %	37.3310 %	1.7305 %
		EMCO	1,499.95		62.6690 %	2.9051 %
		NASDAQ				
Total / Checksum	2,693,381.94		115,838.54	100.000 %		100.000 %

Related to 2.5 and 2.6, the following sharing key was used for sharing of all TSOs costs of the SIDC in 2023:

Table 86

Member State	Final consumption in 2021 according to Report nrg_cb_e (data from 14.02.2022) [GWh]	MS share [%]	TSO	Establishment and amendment Share within MS	Establishment and amendment Share per TSO [%]	Operating Share per TSO [%]
Austria	66,861	2.642 %	APG	100.000 %	100.00000 %	2.73720 %
Belgium	83,069	3.170 %	ELIA	100.000 %	100.00000 %	3.27445 %
Bulgaria	32,089	1.509 %	ESO	100.000 %	100.00000 %	1.58453 %
Croatia	16,854	1.012 %	HOPS	100.000 %	100.00000 %	1.07953 %
Czech Republic	61,304	2.461 %	ČEPS	100.000 %	100.00000 %	2.55298 %
Denmark	33,602	1.558 %	Energinet	100.000 %	100.00000 %	1.63471 %
Estonia	8,135	0.728 %	Elering	100.000 %	100.00000 %	0.79048 %
Finland	83,301	3.178 %	Fingrid	100.000 %	100.00000 %	3.28215 %
France	442,322	14.879 %	RTE	100.000 %	100.00000 %	15.18321 %
Germany	505,175	16.928 %	50Hertz	22.280 %	22.28000 %	3.84701 %
			Amprion	31.960 %	31.96000 %	5.51843 %
			Tennet DE	28.320 %	28.32000 %	4.88992 %
			Transnet	17.440 %	17.44000 %	3.01131 %
Greece	50,554	2.111 %	ADMIE	100.000 %	100.00000 %	2.19664 %
Hungary	43,387	1.877 %	Mavir	100.000 %	100.00000 %	1.95905 %
Ireland	29,659	1.430 %	Eirgrid	100.000 %		0.00000 %
Italy	300,887	10.270 %	Terna	100.000 %	100.00000 %	10.49483 %
Latvia	6,930	0.689 %	AST	100.000 %	100.00000 %	0.75056 %
Lithuania	11,954	0.853 %	Litgrid	100.000 %	100.00000 %	0.91708 %
Luxembourg	6,393	0.671 %	CREOS	100.000 %		0.00000 %
Netherlands	112,349	4.125 %	Tennet BV	100.000 %	100.00000 %	4.24503 %
Poland	157,314	5.590 %	PSE	100.000 %	100.00000 %	5.73558 %
Portugal	48,117	2.031 %	REN	100.000 %	100.00000 %	2.11583 %
Romania	49,623	2.080 %	Transelectrica	100.000 %	100.00000 %	2.16577 %
Slovakia	26,457	1.325 %	SEPS	100.000 %	100.00000 %	1.39785 %
Slovenia	13,550	0.905 %	ELES	100.000 %	100.00000 %	0.97000 %
Spain	235,025	8.123 %	REE	100.000 %	100.00000 %	8.31159 %
Sweden	128,443	4.649 %	Affärsverket svenska kraftnät	100.000 %	100.00000 %	4.77853 %
Northern Ireland	9,000	0.756 %	SONI	100.000 %		0.00000 %
Norway	122,325	4.450 %	Statnett	100.000 %	100.00000 %	4.57574 %

Regional Core DA Sharing keys CSK E&A / O DA with IBEX & ESO

Table 87

Party	CSK E&A DA with IBEX & ESO	CSK O DA with IBEX & ESO
50Hertz	6.7537 %	6.7863 %
Amprion	9.6880 %	9.7347 %
APG	2.2736 %	2.3131 %
BSP	0.7804 %	0.8158 %
ČEPS	2.2430 %	2.2820 %
Creos	1.1400 %	0.0000 %
CROPEX	0.8687 %	0.9043 %
ELES	0.7804 %	0.8158 %
ELIA	2.6088 %	2.6495 %
EMCO	8.3554 %	3.1995 %
EPEX	12.2697 %	17.6206 %
ESO	1.7693 %	1.8061 %
EXAA	0.7236 %	0.7362 %
HOPS	0.8687 %	0.9043 %
HUPX	1.7667 %	1.8044 %
IBEX	1.7693 %	1.8061 %
Mavir	1.7667 %	1.8044 %
Nasdaq	0.0000 %	0.0000 %
OKTE	1.1351 %	1.1714 %
OPCOM	1.9860 %	2.0242 %
OTE	2.2430 %	2.2820 %
PSE	3.6383 %	3.6847 %
RTE	11.6888 %	11.7571 %
SEPS	1.1351 %	1.1714 %
TenneT BV	3.5149 %	3.5579 %
TenneT DE	8.5846 %	8.6260 %
TGE	2.3757 %	2.4060 %
Transelectrica	1.9860 %	2.0242 %
Transnet	5.2866 %	5.3121 %
Total/Checksum	100.0000 %	100.0000 %

Regional Core DA Sharing keys CSK E&A / O DA without IBEX & ESO

Table 88

Party	CSK E&A DA without IBEX & ESO	CSK O DA without IBEX & ESO
50Hertz	6.9884 %	7.0242 %
Amprion	10.0246 %	10.0760 %
APG	2.3659 %	2.4113 %
BSP	0.8244 %	0.8655 %
ČEPS	2.3377 %	2.3827 %
Creos	1.2137 %	0.0000 %
CROPEX	0.9154 %	0.9568 %
ELES	0.8244 %	0.8655 %
ELIA	2.7088 %	2.7555 %
EMCO	8.6312 %	3.3172 %
EPEX	12.6929 %	18.2272 %
EXAA	0.7530 %	0.7675 %
HOPS	0.9154 %	0.9568 %
HUPX	1.8467 %	1.8902 %
Mavir	1.8467 %	1.8902 %
Nasdaq	0.0000 %	0.0000 %
OKTE	1.1903 %	1.2325 %
OPCOM	2.0743 %	2.1184 %
OTE	2.3377 %	2.3827 %
PSE	3.7433 %	3.7959 %
RTE	12.0566 %	12.1320 %
SEPS	1.1903 %	1.2325 %
TenneT BV	3.6466 %	3.6957 %
TenneT DE	8.8829 %	8.9284 %
TGE	2.4442 %	2.4786 %
Transelectrica	2.0743 %	2.1184 %
Transnet	5.4702 %	5.4983 %
Total/Checksum	100.0000 %	100.0000 %

Regional Core DA sharing key among NEMOs for CIP (Central Interface Point)

Table 89

Party	CSK NEMO only DA Operational	Party	CSK NEMO only DA Operational
BSP	1.6632 %	HUPX	3.6033 %
CROPEX	1.8484 %	OKTE	2.4007 %
EMCO	17.0658 %	OPCOM	4.0275 %
EPEX	47.5057 %	OTE	4.6045 %
EXAA	11.8388 %	TGE	5.4421 %
Total/Checksum			100.0000 %

Regional Core IDA Sharing keys CSK IDA with IBEX & ESO

Table 90

Party	CSK IDA with IBEX & ESO
50Hertz	6.2904 %
Amprion	9.0234 %
APG	2.2557 %
BSP	0.8131 %
ČEPS	2.1053 %
Creos	1.2388 %
CROPEX	0.9025 %
ELES	0.8131 %
ELIA	2.6943 %
EMCO	8.9096 %
EPEX	13.8404 %
ESO	1.3148 %
EXAA	0.0000 %
HOPS	0.9025 %
HUPX	1.6205 %
IBEX	1.3148 %
Mavir	1.6205 %
Nasdaq	0.0000 %
OKTE	1.1624 %
OPCOM	1.7893 %
OTE	2.1053 %
PSE	4.7034 %
RTE	12.4159 %
SEPS	1.1624 %
TenneT BV	3.4866 %
TenneT DE	7.9957 %
TGE	2.8059 %
Transelectric	1.7893 %
Transnet	4.9239 %
Total/Checksum	100.0000 %

Regional Core DA Sharing keys CSK IDA **without** IBEX & ESO

Table 91

Party	CSK IDA with IBEX & ESO
50Hertz	6.4291 %
Amprion	9.2223 %
APG	2.3267 %
BSP	0.8549 %
ČEPS	2.1733 %
Creos	1.3145 %
CROPEX	0.9461 %
ELES	0.8549 %
ELIA	2.7742 %
EMCO	9.1231 %
EPEX	14.1991 %
EXAA	0.0000 %
HOPS	0.9461 %
HUPX	1.6786 %
Mavir	1.6786 %
Nasdaq	0.0000 %
OKTE	1.2112 %
OPCOM	1.8508 %
OTE	2.1733 %
PSE	4.8240 %
RTE	12.6926 %
SEPS	1.2112 %
TenneT BV	3.5825 %
TenneT DE	8.1719 %
TGE	2.8778 %
Transelectrica	1.8508 %
Transnet	5.0324 %
Total/Checksum	100.0000 %

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