



SEMO KPI Performance 2019-2020

KPI Outturn Report 2019-2020

Abstract

This document presents SEMO's performance against the regulatory approved Key Performance Indicators (KPIs) for the 2019-2020 tariff year.

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Introduction

SEMO is incentivised to manage performance through Key Performance Indicator (KPI) incentives, for achieving outcomes aimed at improving performance, promoting customer service, increasing efficiencies and delivering value to customers.

On 04 July 2019, the Single Electricity Market Committee (SEMC) published the SEMO Key Performance Indicators Decision Paper. A summary of the final six KPIs, their definitions, weightings and targets to be applied and the rationale for these decisions is outlined in this Decision Paper ([SEM-19-033](#)). The SEMC determined that these KPIs would not apply to the first year of the new ISEM arrangements rather they would be implemented from the beginning of the tariff year, 01 October 2019, until the end of the current SEMO price control in 2021. The KPIs are linked to a maximum award of 4% of the total Operational Expenditure (OpEx) in each tariff year.

This KPI paper describes SEMO's outturn performance in relation to the six regulatory approved KPIs for the period October 2019 to the End of September 2020.

Key Performance Indicators (KPIs)

SEMO is committed to delivering improved quality and performance levels in the processing of crucial Market Operations data. SEMO is currently rewarded through the delivery of six KPIs which incentivise outcomes aimed at improving performance, promoting customer service, increasing efficiencies and delivering value to customers.

The SEMC published on the 04 July 2019 its SEMO Key Performance Indicators Decision Paper [SEM-19-033](#). Under this paper SEMO is subject to performance assessment against six KPIs related to

1. Invoicing
2. Credit Cover Increase Notices
3. SEMO Resettlement Queries
4. General Queries
5. System Availability
6. Timely Publication of Key Market Information

These KPIs are intended to:

- **Incentivise Improvements** in performance by attaching financial rewards to specific measures of performance.
- Allow for increased **visibility of the operation of a regulated entity** which can help inform future price reviews and lead to better outcomes for market participants and consumers.

Invoicing

The Invoicing targets refer to the percentage of occurrences where invoices to all participants are published on time. For the weekly energy markets and Variable Market Operator Charge (VMOC) initial invoices the target is 12:00 each Friday. The target publication for initial Capacity settlement documents is at 12:00 seven working days after the end of each month, and the target publication for the Fixed Market Operator Charge (FMOC) settlement documents is the first Friday after the end of the month at 12:00.

In a letter from the RAs addressed to SEMO on 05 November 2019 on clarifications regarding KPIs applied to SEMO (the “KPI Clarifications Letter”), the invoicing assumptions to be applied are as follows:

- i. System Operator system failures and issues outside of SEMO’s control are to be excluded from the KPI measurement.
- ii. Planned outages, planned releases and ad-hoc releases that have an impact on measurement of this KPI are excluded.

Credit Cover Increase Notices (CCINs)

The Credit Cover Increase Notices targets refer to the percentage of occurrences where the CCINs (issued as part of the Credit Cover Reports) are published on time. Three credit reports should be issued each day, with publication of each required by 9:45am, 12:45pm and 4:15pm. CCIN reports are used to inform market participants that their posted collateral cover is less than their required collateral cover. Participants then have two working days in which to rectify this on receipt of the CCIN.

As set out in the KPI Clarifications Letter, the credit cover increase notice assumptions to be applied are as follows:

- i. System Operator system failures and issues outside of SEMO's control are to be excluded from the KPI measurement.
- ii. Planned outages, planned releases and ad-hoc releases that have an impact on measurement of this KPI are excluded.

SEMO Resettlement Queries

If the market is settled incorrectly, a market participant raises a query to ensure the error is rectified. This metric refers to the number of upheld formal queries from market participants who have identified errors in settling the market which are attributed to SEMO's operations and processes, including defects and pricing issues. Correction of such errors is completed in either the scheduled Resettlement (M+4 and M+13) or in an ad hoc Resettlement. The materiality of a formal query determines whether an ad hoc Resettlement run is required.

Measurement of this KPI is related to the number of SEMO upheld query incidents and Resettlements per Quarter. Multiple Upheld Queries for one incident shall be classified as one Upheld Query Incident. A Formal Query referencing a number of days shall be classified as Multiple Upheld Queries Incidents.

Not all Formal Queries are the result of SEMO driven issues; others are driven by external factors outside of SEMO's control. The measure is to reduce the number of SEMO related issues hence the number of SEMO upheld query incidents and Resettlements per quarter.

As set out in the KPI Clarifications Letter, the SEMO resettlement queries assumptions to be applied are as follows:

- i. Multiple Upheld Queries for one incident shall be classified as one Upheld Query Incident.
- ii. Planned outages, planned releases and ad-hoc releases that have an impact on measurement of this KPI are excluded.

General Queries

The General Queries targets refer to the percentage of occurrences where a General Query is not resolved within 20 business days. A General Query is defined within this metric as any request logged at the SEMO helpdesk. While the Trading and Settlement Code (TSC) places no obligation on SEMO to respond to general queries, SEMO endeavoured to answer all queries received (2,107 general queries in 2019-20) within set timelines. At times, depending on the complexity, scale, resource issues and operational performance, the time taken to respond to these queries can exceed 20 business days. This target is designed to maintain efficiency and customer focus within SEMO.

As set out in the KPI Clarifications Letter, the general queries assumptions to be applied are as follows:

- i. Queries unresolved for more than 20 business days are only counted once against the metric per quarter and not on a rolling basis.
- ii. If further information is requested following resolution of a query this can be counted as a new query.
- iii. If information requested is dependent on third parties and is outside of SEMO's control this does not impact on the calculation of the metric.

System Availability

System availability is the percentage of time infrastructure systems are said to be in a functioning condition to the total time it is required or expected to be available. Availability of the systems is the responsibility of SEMO. High availability ensures a prearranged level of operational performance will be met during a contractual measurement period as follows:

1. Balancing Market systems on a 24-hour basis Monday to Sunday
2. Settlement and Credit Clearing system between 9am-5pm Monday to Friday
3. Reporting and Market Monitoring system between 9am-5pm Monday to Friday
4. Registration system between 9am-5pm Monday to Friday
5. Website availability between 8am-6pm Monday to Friday

As set out in the KPI Clarifications Letter, the system availability assumptions to be applied are as follows:

- i. Planned outages, planned releases and ad-hoc releases that have an impact on measurement of this KPI are excluded.
- ii. System Operator events beyond the control of the Market Operator are excluded from the metric.
- iii. As the market monitoring system is not yet operational, the availability of the Market Participant Interface will be monitored in its place until it is built and implemented, however this will need to be explicitly noted in MO performance reporting for transparency.
- iv. The overall calculation of system availability is based on the average of the measured availability of systems 1-5 in the KPI.

Timely Publication of Key Market Information

The Timely Publication of Key Market Information targets refer to the percentage of occurrences where the market information listed as part of the KPI is published on time and is accurate and complete at the time of publication (to achieve 75% of this KPI). In order to achieve 100% of this KPI, publication of complete and accurate market information in a timely manner as set out in the TSC and I-SEM Data Publication Guide is required. This is based on the percentage of occurrences where such market information is published on time and is accurate and complete at the time of publication.

Commercial Offer Data
Four Day Aggregated Rolling Wind Unit Forecast
Hourly Dispatch Instructions Report
Imbalance Price
Imbalance Price Supporting Information Report
Half Hourly PNs
Long Term Schedules Operational Schedule Report
RTUC Operational Schedule Report
PN and BOD data for the full trading day and day ahead
Hourly Forecast Imbalance Report
Four Day Rolling Wind Power Unit Forecast aggregated by Jurisdiction
Metered Generation by Jurisdiction

As set out in the KPI Clarifications Letter, the timely publications of key market information assumptions to be applied are as follows:

- i. Where the accuracy and completeness of data is outside of SEMO's control, its performance against the KPI is not affected.
- ii. As per the decision paper, external factors which are demonstrably outside of the Market Operator's direct control are to be excluded. This includes planned outages, planned releases, ad-hoc releases and data feeds outside of the MO's control.
- iii. The second part of the metric applies to all reports published through the Market Participant Interface.

Summary of the agreed Key Performance Indicators

The agreed SEMO Key Performance targets are set out in Table 1¹ below.

Metric	Weighting	Lower Bound Target	Upper Bound Target
1 Invoicing	15%	97%	100%
2 Credit Cover Increase Notices	10%	97%	100%
3 SEMO Resettlement Queries	20%	<15 incidents per quarter	<5 incidents per quarter
4 General Queries	5%	95% resolved within 20 business days	99% resolved within 20 business days
5 System Availability	15%	99%	99.9%
6 Timely Publication of Key Market Information	35%	90% ²	100%

Table 1 - Summary of the agreed Key Performance Indicators

Conditions to be applied to the KPIs

The decision paper SEM-19-033 Section 2.5 also outlines the following KPI parameters:

- The KPIs determined by the SEM Committee will come into effect from 1 October 2019 and apply for the remaining two periods of the SEMO price control.
- Where applicable, metrics should be delivered within one hour of the targeted time.
- External factors which are demonstrably outside of the Market Operator's direct control are to be excluded e.g. Limited Communication failure by Market Participants, late provision of data by the Meter Data Provider, Government policy changes, Regulatory Authorities' policy changes etc.
- In terms of assessing the KPIs, a measure is to be taken at the end of each Quarter using the average value of each KPI over that period.
- The KPI incentive pot will be set at 4% of total OpEx revenue for each year. Any KPI reward will be recovered through an adjustment to the K-Factor.

¹ Extract from Table 4 and Table 7 of SEM-19-033 Decision Paper.

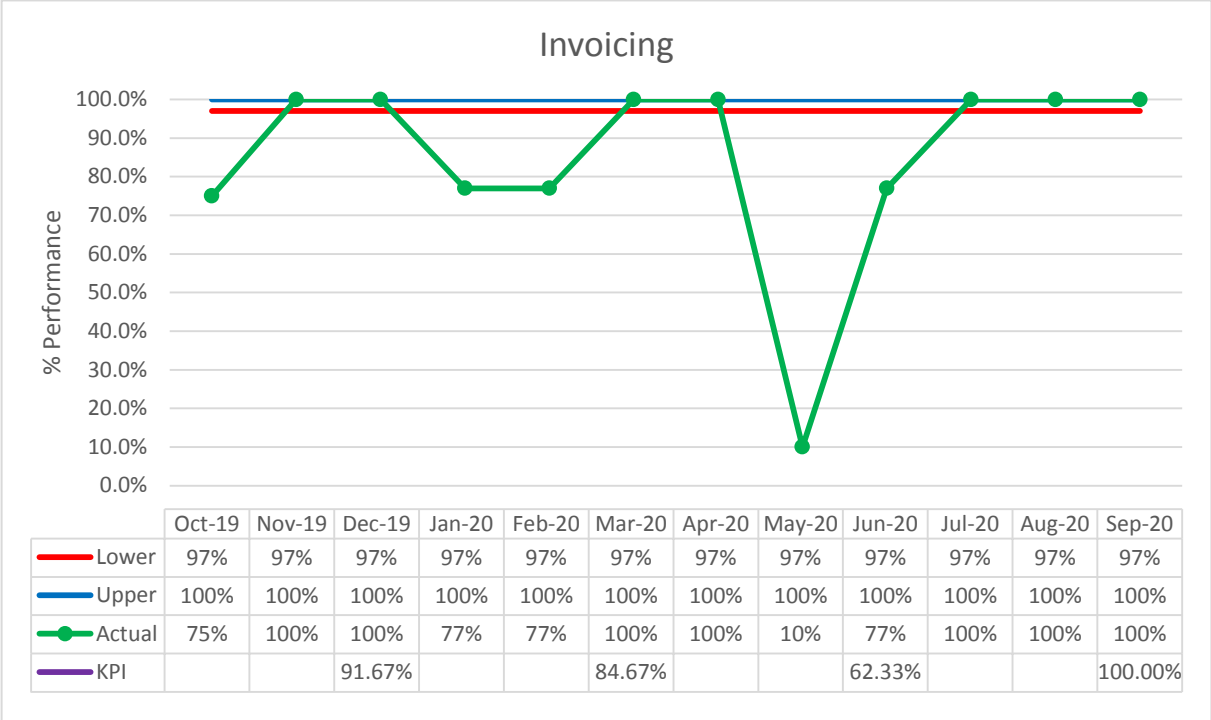
² A maximum of 75% of the award can be considered only if the 90% lower bound target is met for each of the key reports listed as part of the KPI. In addition to this, if the 90% lower bound target is met for all reports required under the TSC and Data Publication Guide, 100% of the award can be achieved. The final amount awarded is dependent on where the outturn performance percentage is within the target bounds.

Outturn Performance 2019-20

The SEMO Revenue Requirement Decision Paper (SEM-19-033), Executive Summary, states that the 'KPI incentive pot should be set at 4% of OPEX in line with current practice'. The approved OpEx revenue for 2019-2020 tariff year was €9,980,386 (2020 monies)³. 4% of this OpEx amount translates to a KPI pot of €399,215. The following sections detail the actual operational outturn performance against each target set out in the Price Control decision paper.

Invoicing

The target for the Invoicing KPI was 97% with an upper bound limit of 100%.



Graph 1 - Invoicing Performance

Neither the upper or lower bound targets were achieved in Quarters 1, 2 and 3 of the Financial Year. The upper bound target was achieved in Quarter 4 as shown in Graph 2 above. The monetary reward for this KPI is illustrated in Table 2 below.

At this time SEMO Settlements were managing around a number of issues. One such known system issue was where "Settlement Document Creation" is limited to four Billing Periods. The vendor has started limiting Settlement Document runs to max of four billing periods as a workaround. This means at least two Settlement Documents have to be issued on weeks where there are more than four billing periods to be settled, which is a regular occurrence given that Settlement Documents can include multiple billing periods for BALIMB,CRM,M4,M13,Adhoc resettlement.

Details on the known issue can be found at the below link under "157930 (136475 & 6148) Settlement Document Creation"; [Known Issues Report](#) for the 4th December 2020 is now available on the SEMO website.

³ Figure as communicated to the Regulatory Authorities on 08 March 2021 by SEMO as per Question Set B18 of the SEMO Price Control; allowance of €9,651,404 in 2017 monies adjusted accordingly for inflation (RPI-x).

While Settlements are managing through these issues on a regular basis, there is always the risk that Settlement Documents will be delayed at least once a Quarter until they are ultimately all resolved.

Further the metric as currently set means that the KPI cannot be achieved if just one Settlement Document is late over one business Quarter/13 week period.

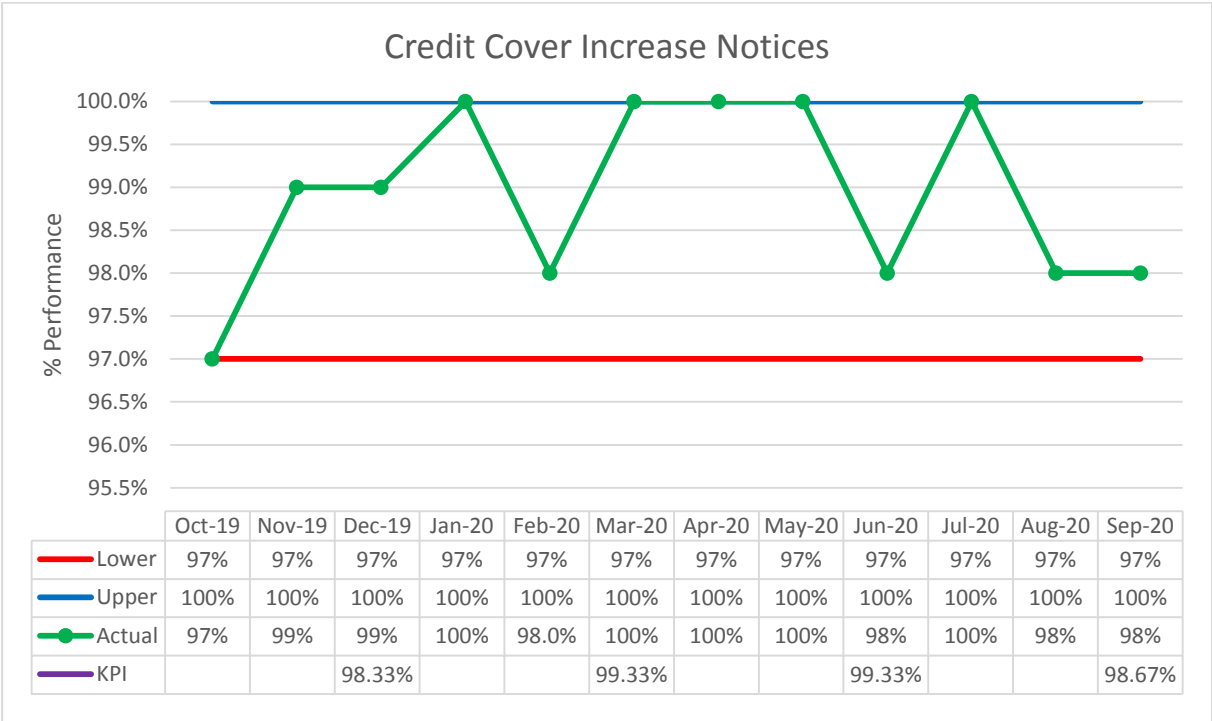
The monetary reward associated with this KPI is illustrated in Table 2 below.

Quarter1	Quarter2	Quarter3	Quarter4	Total Reward
€0,000	€0,000	€0,000	€14,971	€14,971

Table 2 Invoicing outturn

Credit Cover Increase Notices

The target for the Credit Cover Increase Notices (CCIN’s) KPI was 97% with an upper bound limit of 100%.



Graph 2 - Credit Cover Increase Notice Performance

The lower bound targets were achieved in all four Quarters of the Financial Year, as shown in Graph 2 above.

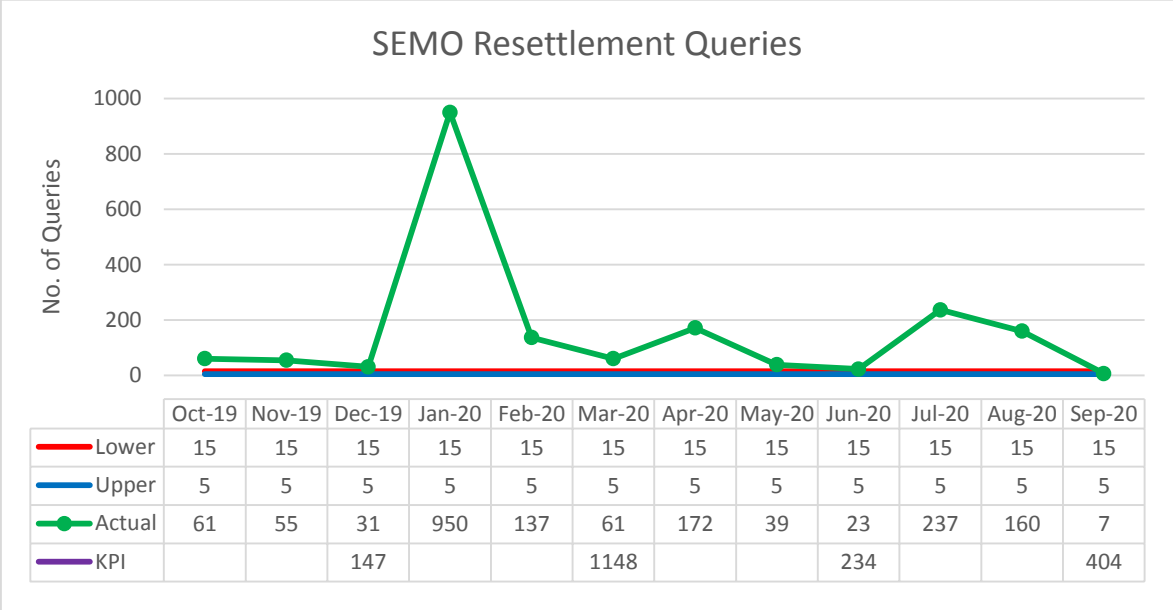
The monetary reward for meeting these targets is illustrated in Table 3 below.

Quarter1	Quarter2	Quarter3	Quarter4	Total Reward
€4,436	€7,763	€7,763	€5,545	€25,505

Table 3 - Credit Cover Increase Notices outturn

SEMO Resettlement Related Queries

The target for SEMO Resettlement Related Queries was 'less than 15' upheld queries which require Resettlement per Quarter.



Graph 3 - SEMO Resettlement Related Queries Performance

The upper bound of this metric was five per Quarter. This target was not achieved in any four Quarters of the financial year, as shown in Graph 3 above.

The lower bound of this metric was fifteen per Quarter. This target was not achieved in any four Quarters of the financial year, as shown in Graph 3 above.

The performance targets for this KPI were set against historic stable market operation as seen in the SEM. The outturn performance against this incentive shows that these targets were overly ambitious for a new market and in the context of that set out above. SEMO believes that further consideration should have been given to the fact that SEMO is now tasked with not only Balancing Market Settlement but Capacity Market and Imbalance Settlement also.

There are three broad categories of areas driving formal queries;

1. Defects;
2. Processing Errors; and
3. Incorrect Parameters/Registrations.

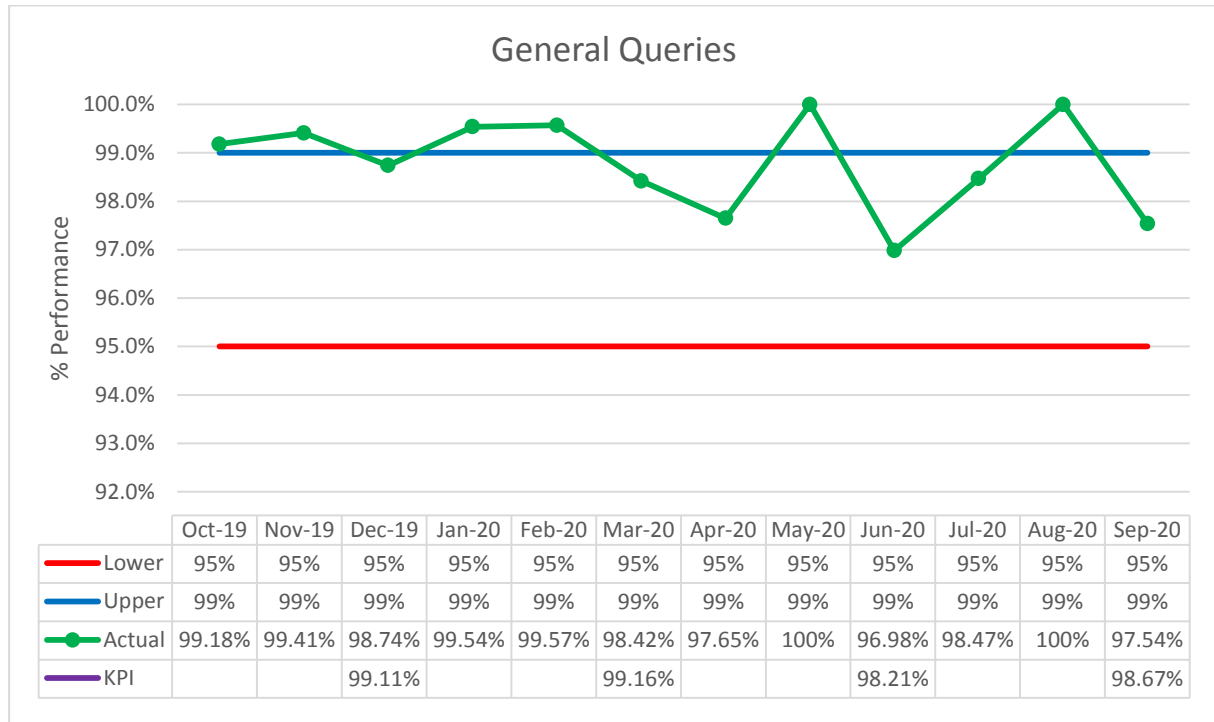
The monetary reward associated with this KPI is illustrated in Table 4 below.

Quarter1	Quarter2	Quarter3	Quarter4	Total Reward
€0,000	€0,000	€0,000	€0,000	€0,000

Table 4 - SEMO Resettlement Related Queries outturn

General Queries

The target for the General Queries Delivery KPI was 95% with an upper bound limit of 99%. The KPI requires that SEMO resolves 99% of its queries within 20 working days.



Graph 4 - General Queries Performance

In financial year 2019-2020 SEMO handled 2,107 helpdesk general queries. Query resolution time is impacted by a number of factors. For example, the complexity and scale of the query received, operational resources availability and the fact that formal and urgent queries have to be prioritized, and often the nature of the request requires cross functional assistance and/or escalation to a third party vendor.

The lower bound target was achieved in Quarters 1, 2, 3 and 4 as shown in Graph 4 above.

The upper bound target was achieved in Quarters 1 and 2 of the financial year, but not in Quarters 3 and 4.

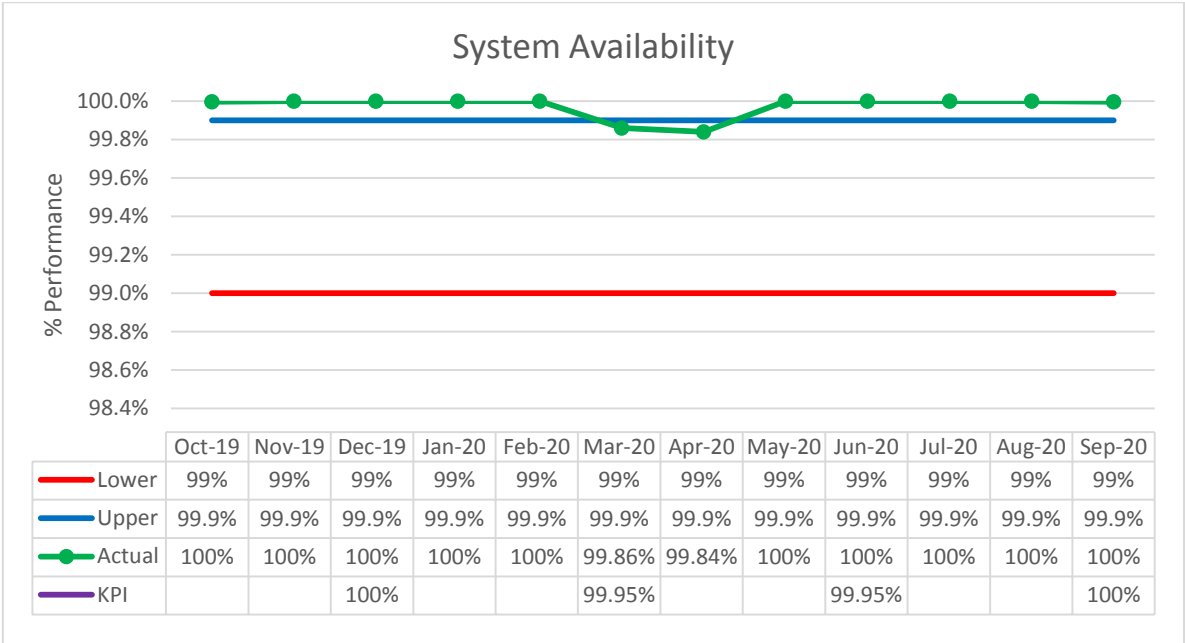
The monetary reward achieved is illustrated in Table 5 below.

Quarter1	Quarter2	Quarter3	Quarter4	Total Reward
€4,990	€4,990	€4,005	€4,579	€18,564

Table 5 - General Queries outturn

System Availability

The target for the System Availability KPI was 99% with an upper bound of 99.9%.



Graph 5 – System Availability Performance

The lower and upper bound targets of this metric have been achieved in all four Quarters of the financial year.

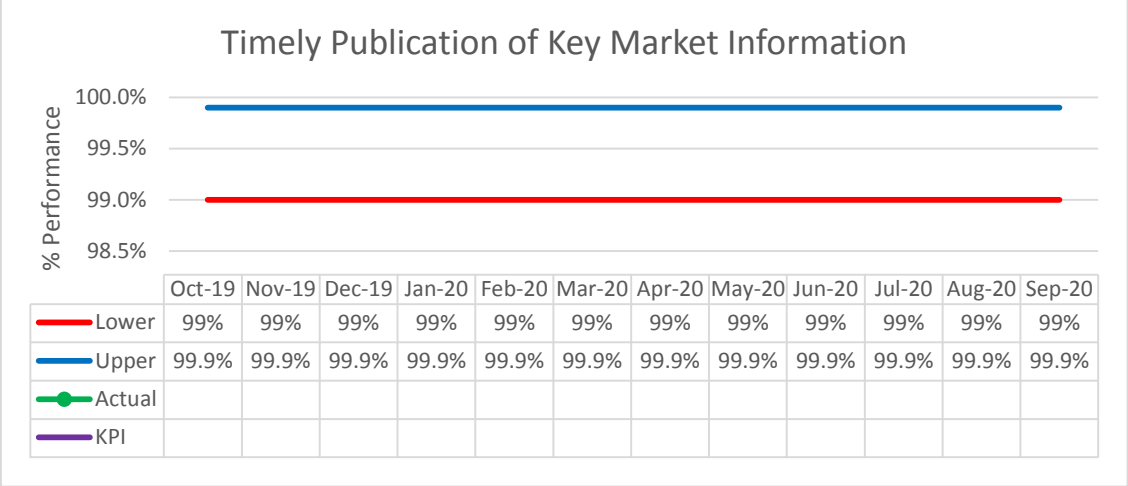
The monetary reward achieved is illustrated in Table 6 below.

Quarter1	Quarter2	Quarter3	Quarter4	Total Reward
€14,971	€14,971	€14,971	€14,971	€59,882

Table 6 – System Availability outturn

Timely Publication of Key Market Information

The target for the Timely Publication of Key Market Information KPI was 90% with an upper bound of 100%.



Graph 6 – Timely Publication of Key Market Information Performance

Neither the upper or lower bound targets were achieved in Quarters 1, 2, 3 and 4 of the Financial Year.

This KPI is currently split into two elements⁴

1. Publication of complete and accurate market information as specified below in a timely manner will be required in order to achieve 75% of this KPI.
2. Publication of complete and accurate market information in a timely manner as set out in the TSC and I-SEM Data Publication Guide will be required in order to achieve 25% of this KPI.

At present however, the information required under this incentive cannot currently be compiled and the scale of the investment required to provide a solution significantly outweighs the discretionary capital that SEMO could reasonably be expected to invest under the KPI framework as structured.

In terms of the first element:

- The current systems archive data on a daily basis but it is not possible to pull old data back into a production environment. While limited manual data retrieval is possible there is no system, hardware or application, for data retrieval currently in place.
- For this KPI the data would have to be pulled back into a production environment with a full set of working applications as complex queries/ workflow analysis would have to be carried out to verify if reports had not only been published but published in line with the prescribed timeframes/requirements. There is no existing data table or log file which keeps a record of these publications and as such new functionality would have to be created.

In terms of the second element:

⁴ For clarity it is noted that the Imbalance Prices tables in the SEMO Annual MO Performance Report are not to the level of detail required under this KPI.

- As noted above the current systems achieve data on a daily basis but it is not possible to pull old data back into a production environment. While limited manual data retrieval is possible there is no system, hardware or application, for data retrieval currently in place.
- Moreover the scale of reporting within the scope of the TSC and Data Publication requirements is significant and the likely investment required to put in place systems to extract the necessary data to the level of detail needed to enable the incentive measure to be calculated outweighs the potential incentive outcome and benefit to market participants.

As part of the forward CapEx programme a scoping exercise is currently underway which should include an archive retrieval system and query application. It is likely that the development of such a system will required the involvement of the main market system vendor. However, high level analysis of this extraction task suggests this would not be straightforward, or may not even be possible in all cases. SEMO will only know the capability of the systems that could and should be put in place when it has completed the analysis and design, noting that the system capability and cost of implementing same which will have to be balanced with the benefit to market participants.

SEMO has and continues to seek to ensure that all market information is available in a timely manner. SEMO is not aware of significant issue with the non-publication of data, notwithstanding that there are instances of delayed publications. However it is the view of SEMO that if this incentive is to be retained then it would require a re-design in order to better support the objectives. As such SEMO is not seeking any return under this incentive KPI.

The monetary reward associated with this KPI is illustrated in Table 7 below.

Quarter1	Quarter2	Quarter3	Quarter4	Total Reward
€0,000	€0,000	€0,000	€0,000	€0,000

Table 7 – Timely Publication of Key Market Information outturn

Performance Summary against KPI Targets

Table 8 below, summarises the overall Regulatory Approved KPI targets and the outturn KPI figures per Quarter. The light grey area indicates the KPI targets agreed in the SEMO Revenue Requirement Decision Paper (SEM-19-033). The darker grey columns show the percentage outturn achieved by SEMO for each KPI per Quarter while the blue column indicates the average performance over the four Quarters. All four Quarters proved challenging for SEMO mainly due to the underperformance associated with three KPIs namely Invoicing, SEMO Resettlement Queries and Timely Publication of Key Market Information. This was due in part to the new I-SEM systems which went live with several known issues and defects.

SEMP KPI Outturn 2019-2020								
SEMO Revenue Requirement Decision Paper (SEM-19-033) Table 4 & Table 7				Performance by Quarter				Overall Performance
Metric	Weighting	Target	Upper Bound	Oct-Dec Q1	Jan-Mar Q2	Apr-June Q3	Jul-Sept Q4	2017-2018
Invoicing	15%	97%	100%	91.67%	84.67%	62.33%	100%	84.67%
Credit Cover Increase Notices	10%	97%	100%	98.33%	99.33%	99.33%	98.67%	98.92%
SEMO Settlement Queries	20%	<15 per Q	<5 per Q	147	1148	234	404	1,933 (total)
General Queries	5%	95%	99%	99.11%	99.16%	98.21%	98.67%	98.79%
System Availability	15%	99%	99.9%	100%	99.95%	99.95%	100%	99.97%
Timely publication of key market information	35%	90%	100%	-	-	-	-	-

Table 8 - SEMO Performance 2019-2020

Incentive earned by SEMO

The SEMO Revenue Requirement Decision Paper (SEM-19-033) states that the 'KPI incentive pot to be set at 4% of the total OPEX revenue for each year'. The approved OPEX revenue for 2019-2020 was €9,980,386 (2020 Monies). 4% of this amount translates to a KPI pot of €399,215.

Table 9 below illustrates:

- The earned reward per Quarter
- The maximum available reward per Quarter
- The percentage KPI reward achieved per Quarter

Incentive earned per Quarter					
Performance Indicator	Oct-Dec	Jan-Mar	Apr-June	Jul-Sept	2019/2020
	Q1	Q2	Q3	Q4	TOTAL (2020 monies)
Invoicing	€0	€0	€0	€14,971	€14,971
Credit Cover Increase Notices	€4,436	€7,763	€7,763	€5,545	€25,505
SEMO Settlement Queries	€0	€0	€0	€0	€0
General Queries	€4,990	€4,990	€4,005	€4,579	€18,564
System Availability	€14,971	€14,971	€14,971	€14,971	€59,882
Timely publication of key market information	€0	€0	€0	€0	€0
KPI reward per Quarter	€24,397	€27,723	€26,738	€40,064	€118,922
Maximum Available Reward in Quarter	€99,804	€99,804	€99,804	€99,804	€399,215
Percentage of Total Achieved in Quarter	24.44%	27.78%	26.79%	40.14%	29.79%

Table 9 – Summary of the KPI monetary reward 2019-2020

Based on a comprehensive set of KPI data SEMO have calculated the KPI reward in Table 9 above to be €118,922. This represents an overall percentage reward of 29.79% of the maximum amount available.

This KPI reward is to be recovered through the adjustment of the K Factor (see section 2.5 of the SEMO Key Performance Indicators Decision Paper – SEM-19-033⁵).

⁵ [SEM-19-033](#)

Conclusion on SEMO’s Overall performance

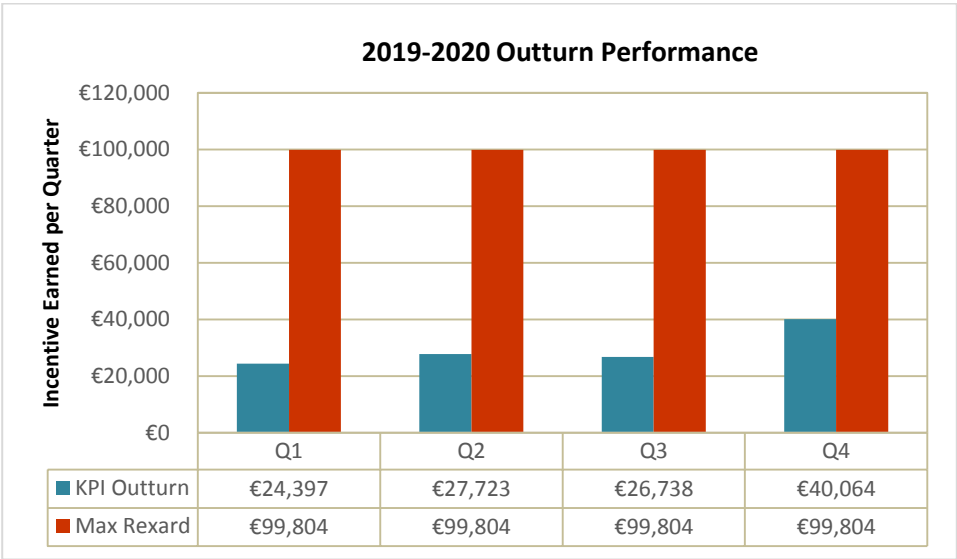
The Market Operator achieved all Credit Cover Increase Notices, General Queries and System Availability KPIs throughout all four Quarters.

Invoicing was achieved in Quarter 4 only noting that the upper bound target was achieved. Neither the upper or lower bound targets for Invoicing were achieved in Quarters 1, 2 and 3 of the Financial Year due to a known issue (157930 (136475 & 6148) Settlement Document Creation).

The target for SEMO Resettlement Queries was not achieved in any four Quarters of the Financial Year. The target for Timely Publication of Key Market Information was not achieved in any four Quarters of the Financial Year.

The best performance was in Quarter 4 with a 40.14% success rate. The least performance was in Q1 with a 24.44% success rate. It is encouraging to see the *Percentage of Total Achieved in Quarter* increase as we moved through the 2019/20 Financial Year.

The overall generally low performance in reaching the SEMO KPI targets for 2019/20 can be contributed for the most part to the very large number of known defects that the market went live with, which are still being remedied, manual workarounds for both defects and de-scoped functionality and the overall complexity of the new market.



Graph 9 – Overall KPI Outturn Performance per Quarter