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## **Subsidiary Body for Implementation**

**Fifty-first session**

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Item 6(b) of the provisional agenda

**Matters relating to the mechanisms under the Kyoto Protocol**

**Report of the administrator of the international transaction log under  
the Kyoto Protocol**

## **Report of the administrator of the international transaction log under the Kyoto Protocol**

### *Summary*

This fifteenth annual report of the administrator of the international transaction log provides information to the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) on the activities of the administrator of the international transaction log in the period from 1 October 2018 to 30 September 2019. It contains information on transactions of Kyoto Protocol units, as requested at CMP 6, and information on the outcomes of the 21<sup>st</sup> Registry System Administrators Forum, which took place in Copenhagen on 2 October 2019.

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## Abbreviations and acronyms

AAU	assigned amount unit
CDM	clean development mechanism
CER	certified emission reduction
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
COP	Conference of the Parties
ERU	emission reduction unit
EUTL	European Union transaction log
ITL	international transaction log
NIR	national inventory report
RMU	removal unit
RSA	registry system administrator
RSA Forum	Registry System Administrators Forum
SBI	Subsidiary Body for Implementation
SEF	standard electronic format
SIAR	standard independent assessment report

## **I. Introduction**

### **A. Mandate**

1. CMP 1 requested the secretariat to establish and maintain the ITL to verify the validity of transactions proposed by registries established under decisions 3/CMP.1 and 13/CMP.1.<sup>1</sup> The ITL is essential for implementing the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol.
2. COP 10 also requested the secretariat, as the ITL administrator, to report annually to the CMP on organizational arrangements, activities and resource requirements and to make any necessary recommendations to enhance the operation of registry systems.<sup>2</sup>
3. CMP 1 further requested the SBI to consider, at its future sessions, the annual reports of the ITL administrator with a view to requesting the CMP to provide guidance, as necessary, in relation to the operation of registry systems.<sup>3</sup>

### **B. Scope of the note**

4. This fifteenth annual report of the ITL administrator to the CMP, covering the reporting period from 1 October 2018 to 30 September 2019, contains information on the implementation of the ITL and its operational status, including the facilitation of cooperation with RSAs through the RSA Forum and the independent assessment of registry systems. It also contains information on transactions of Kyoto Protocol units, organizational arrangements and resources.

### **C. Possible action by the Subsidiary Body for Implementation**

5. The SBI may wish to take note of the information contained in this report and to request the CMP to provide guidance to the secretariat and Parties, as necessary, concerning the implementation of registry systems.
6. The SBI may also wish to provide guidance to the ITL administrator on finalizing the data exchange standards,<sup>4</sup> as divergent views on implementing the carry-over process for Parties included in Annex I<sup>5</sup> without quantified emission limitation or reduction commitments for the second commitment period of the Kyoto Protocol meant that the work could not be completed.

## **II. Work undertaken in the reporting period**

### **A. Summary**

7. The ITL administrator convened the 21<sup>st</sup> RSA Forum and continued to coordinate the tasks of its working groups.
8. Activities related to the eleventh annual assessment of national registries and the accounting of Kyoto Protocol units were conducted, including generating SIARs on the basis of information on changes in national registries and the SEF tables contained in the annual NIRs for 2018.

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<sup>1</sup> Decision 13/CMP.1, annex, para. 38.

<sup>2</sup> Decision 16/CP.10, para. 6(m).

<sup>3</sup> Decision 12/CMP.1, para. 11.

<sup>4</sup> See decision 24/CP.8, para. 3.

<sup>5</sup> The term "Party included in Annex I" is defined in Article 1, para. 7, of the Kyoto Protocol.

9. The ITL administrator continued to support the operations of the ITL. Detailed information on its operational activities and performance is provided in chapter II.C below.

## **B. Implementation activities**

### **1. International transaction log releases**

10. During the reporting period there were no releases of ITL software. A minor release is planned for the end of 2019 to address issues and implement improvements to the application logs.

### **2. Standard electronic format reporting application**

11. Parties included in Annex I report, in the SEF tables, information on ERUs, CERs, temporary CERs, long-term CERs, AAUs and RMUs from their national registry transferred or acquired in the year preceding the reporting year.<sup>6</sup>

12. CMP 11 requested the ITL administrator to develop an application to facilitate the submission of the SEF tables for reporting Kyoto Protocol units for the second commitment period and to report on progress in developing and testing that application in its annual report.<sup>7</sup> The ITL administrator developed an application to enable the preparation of the SEF tables, as specified in the eleventh annual report of the ITL administrator.<sup>8</sup>

13. During the reporting period the ITL administrator prepared and released a new version of the SEF reporting application containing minor bug fixes, which was successfully used by Parties in the 2019 reporting cycle.

### **3. International transaction log operational procedures**

14. During the reporting period no changes were made to the existing operational procedures as they were deemed to be relevant and well established.

### **4. International transaction log technology**

15. Following the acquisition at the end of 2017 of the vendor of the digital certificates used for the ITL by another company, the ITL administrator organized and completed the deployment of a new line of digital certificates used to authenticate registry systems and to comply with industry standards.

### **5. Data centre hosting of the international transaction log infrastructure**

16. During the reporting period the secretariat continued and completed the migration of the data centre hosting of the ITL infrastructure to a cloud-based infrastructure.

17. Following the successful completion of the testing and migration of the non-production environments at the end of 2018, the production environment was implemented and thoroughly tested in November 2018.

18. Migration rehearsals and connectivity tests were scheduled in collaboration with RSAs and carried out in January 2019, and the final migration of the production environment took place at the beginning of February 2019.

19. After completion of the migration and up until the end of the reporting period, the availability of the ITL remained stable and its service well within the agreed levels.

20. The secretariat will continue to monitor the quality of the ITL service and improve service delivery arrangements with the new cloud provider by leveraging the benefits of using a cloud-based environment.

<sup>6</sup> Decision 15/CMP.1, annex, para. 11.

<sup>7</sup> Decision 3/CMP.11, para. 19.

<sup>8</sup> FCCC/SBI/2015/INF.12, para. 13.

## 6. Information technology service management

21. Options for optimizing and consolidating activities related to the ITL service desk and software development were investigated and are reported in paragraphs 69 and 70 below. A review of the options for consolidating and optimizing application support is yet to be carried out.

## C. Operational activities

### 1. Support for registry testing

22. During the reporting period the ITL administrator supported the functional testing for the second commitment period of two national registries.<sup>9</sup>

### 2. International transaction log disaster recovery testing

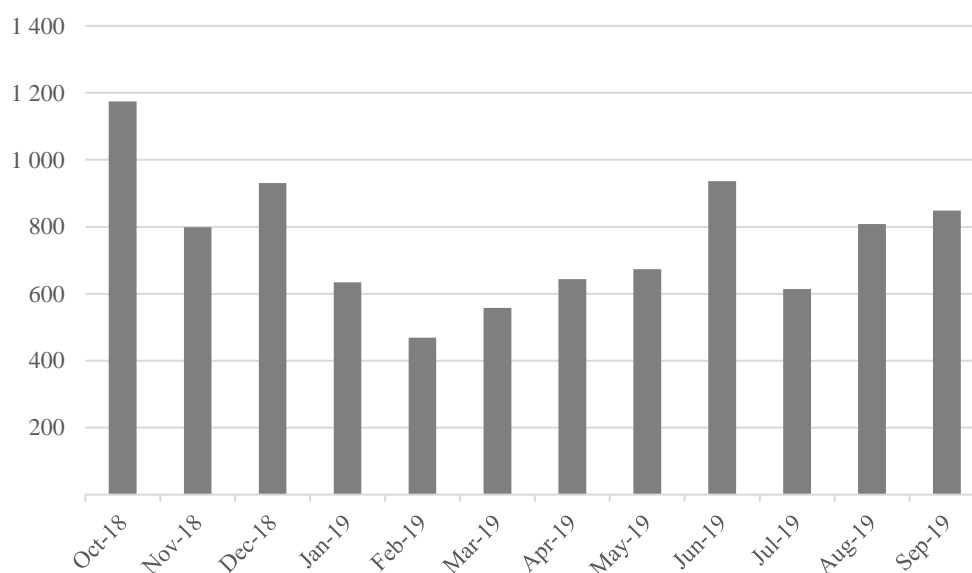
23. Owing to the migration of the ITL infrastructure, no full annual disaster recovery testing was carried out in the reporting period. Such testing is planned to be conducted in 2020 in collaboration with RSAs. The failover of the individual components of the new ITL infrastructure and data replication between the primary and secondary sites of the ITL were tested as part of the ITL migration.

### 3. Transaction data and analysis

24. The level of activity in the ITL can be measured using various transactional and operational metrics. Figure 1 shows the number of transactions proposed to the ITL in the production environment<sup>10</sup> each month during the reporting period. The breakdowns by registry of the number of transactions and the number of Kyoto Protocol units subject to transactions proposed to the ITL in the reporting period are shown in annexes III and IV, respectively.

Figure 1

**Number of transactions proposed to the international transaction log from 1 October 2018 to 30 September 2019**



25. External transactions, in which the units involved leave the originating registry and arrive at a different registry, and non-external transactions, in which the units stay in the same

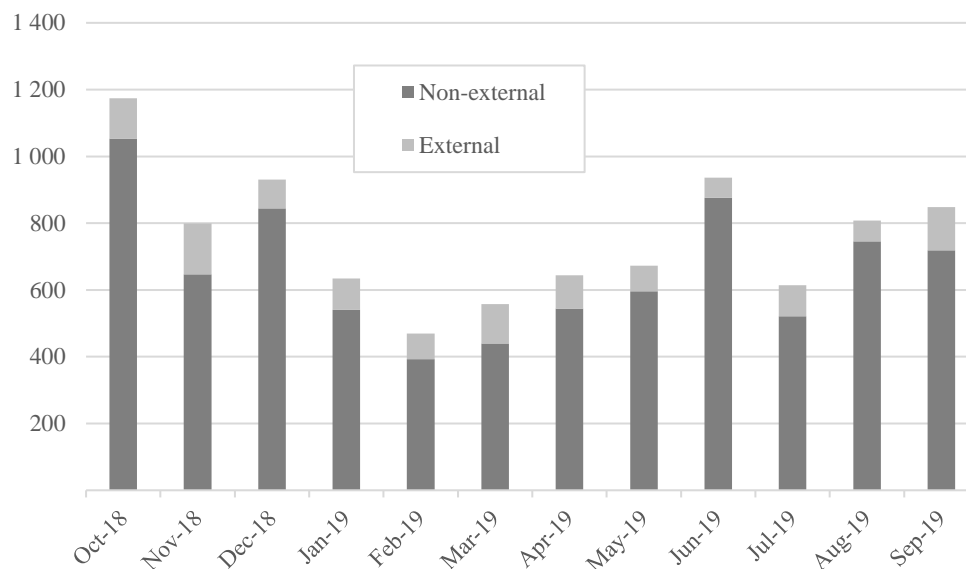
<sup>9</sup> In accordance with annex H to the data exchange standards, which contains functional test suites covering modalities, rules and guidelines for emissions trading under Article 17 of the Kyoto Protocol.

<sup>10</sup> The live system of the ITL used to support emissions trading under the Kyoto Protocol.

registry, take place in the registry systems and the ITL. Figure 2 shows the evolution of the breakdown of external and non-external transactions in the ITL during the reporting period.

Figure 2

**Number of external transactions compared with non-external transactions in the international transaction log from 1 October 2018 to 30 September 2019**



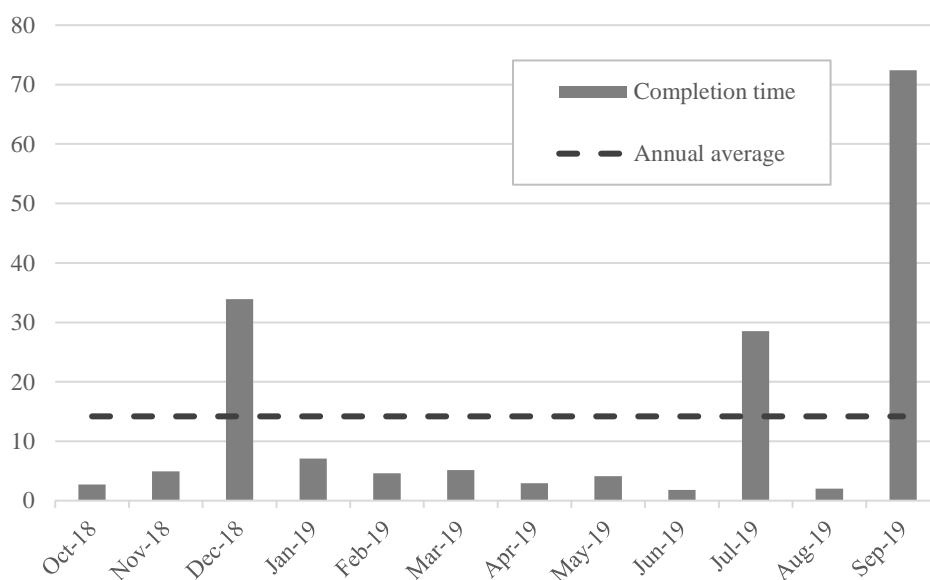
26. Transactions proposed to the ITL end in one of three statuses: terminated, cancelled or completed.

27. The transaction completion time includes the latency incurred due to the travel time of messages through the registry network and the processing time within registries, the ITL and the EUTL if a European Union Emissions Trading System registry is involved in the transaction. The monthly average transaction completion times in the reporting period are displayed in figure 3.

Figure 3

**Monthly average transaction completion times from 1 October 2018 to 30 September 2019**

(seconds)



28. The longer average completion times observed in December, July and September are due to national registry downtime, which caused some ongoing transactions to take longer to complete.

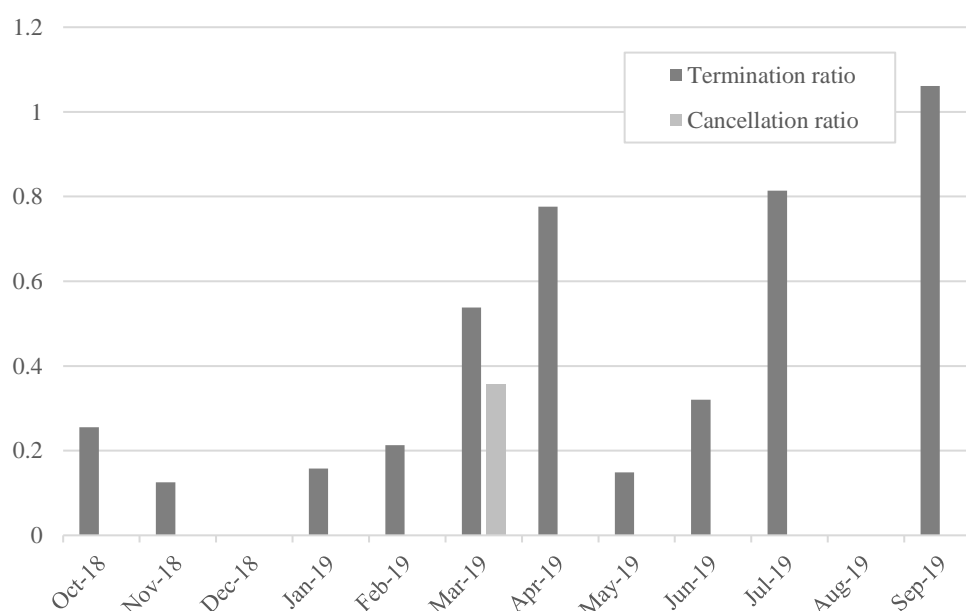
29. Transactions that are not compliant with the data exchange standards are terminated by the ITL. The transaction termination ratio, an indicator of the level of internal checking performed by registries to ensure that the proposed transaction is accurate, is obtained by dividing the number of terminated transactions by the number of transactions proposed in a given time frame. The evolution of the termination ratio in the reporting period is shown in figure 4.

30. If a transaction has not reached a final status within 24 hours, it is automatically cancelled by a clean-up mechanism. The transaction cancellation ratio, an indicator of the extent of communication problems in registry systems, is obtained by dividing the number of cancelled transactions by the number of proposed transactions in a given time frame. Figure 4 also provides the transaction cancellation ratios in the reporting period.

Figure 4

**Transaction cancellation and termination ratios from 1 October 2018 to 30 September 2019**

(per cent)



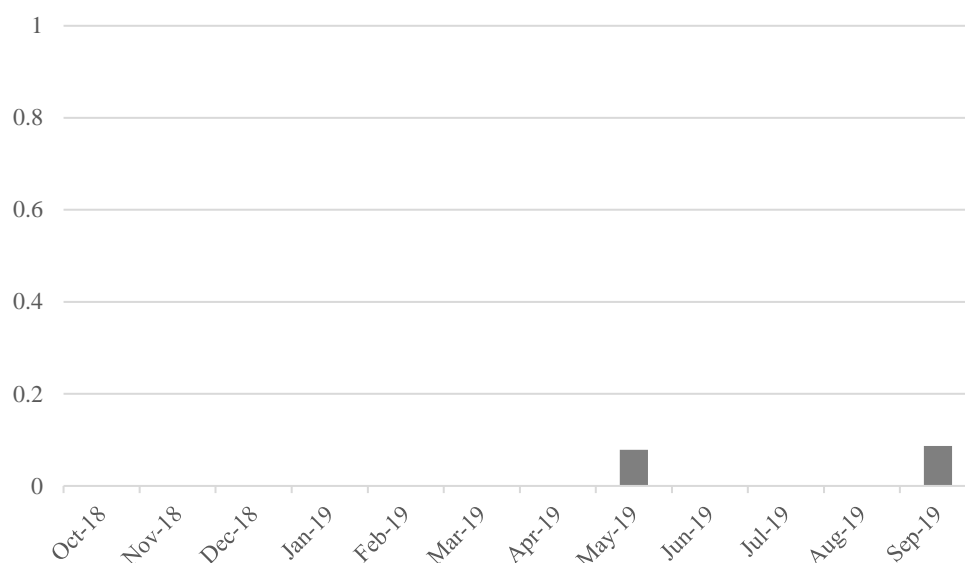
31. The reconciliation process ensures that holdings of Kyoto Protocol units are consistent between registries and the ITL. The occurrence of a reconciliation inconsistency indicates a discrepancy between the ITL and a registry's records. The inconsistent reconciliation ratio is obtained by dividing the number of inconsistent reconciliations by the number of reconciliations initiated in a given time frame. The ratio is an indicator of the capacity of registries to maintain accurate records of their Kyoto Protocol unit holdings. Figure 5 shows the inconsistent reconciliation ratios in the reporting period.



Figure 5

**Inconsistent reconciliation ratios from 1 October 2018 to 30 September 2019**

(per cent)



32. The ITL facilitates communication between registries in performing their transactions. The ITL can become unavailable during planned maintenance windows, of which RSAs are informed in advance, or during unplanned outages caused by operational incidents. The availability of the ITL in the reporting period, taking into account unplanned outages, was 99.82 per cent.

33. The ITL started to receive units applicable to the second commitment period in April 2013, when the first issuance of CERs for the second commitment period was made in the CDM registry. As at 30 September 2019, 535,834,113 CERs for the second commitment period had been issued for 1,275 CDM projects.

#### 4. Status of carry-over

34. Following completion of the true-up period, 18 Parties carried over units issued for the first commitment period to the second commitment period. A total of 137,153,029 CERs, 168,128,873 ERUs and 5,794,523 AAUs were carried over.

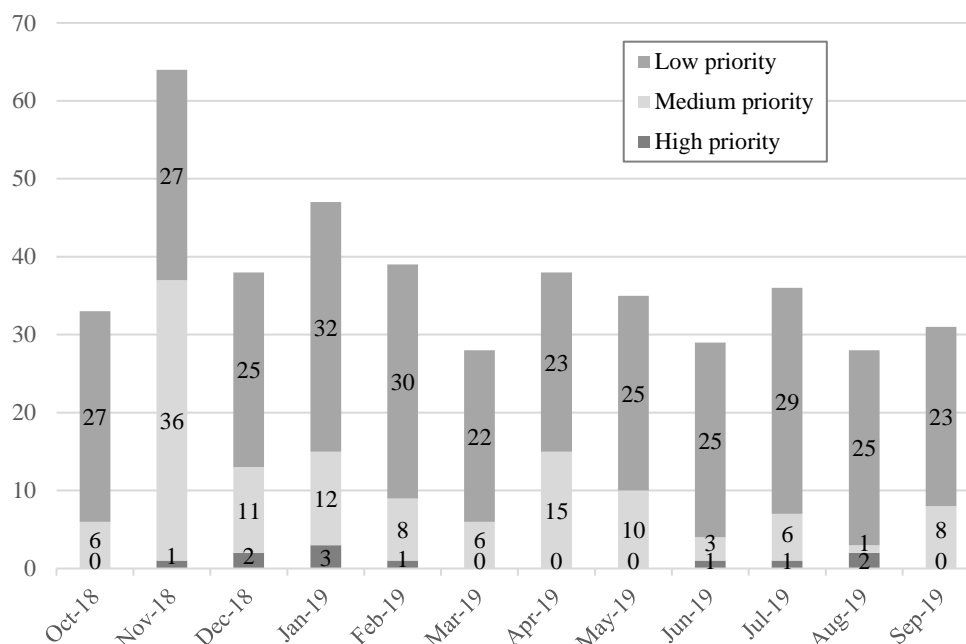
#### 5. International transaction log service desk

35. The ITL service desk is the focal point for all support provided to RSAs for operating and testing their registries. The ITL service desk carries out the technical activities related to the initialization and go-live processes under the supervision of the ITL administrator. The ITL service desk provides continuous support to RSAs from 8 p.m. on Sundays until midnight on Fridays (Coordinated Universal Time).

36. Figure 6 tracks the number of support requests handled by the ITL service desk during the reporting period, categorized by priority. High-priority support requests are initiated when the processing of transactions from one or more registries cannot be performed. Medium-priority support requests are related to the performance or the stability of the ITL, which may affect transaction processing. Low-priority support requests are related to information items or performance issues that do not directly affect transaction processing.

Figure 6

**Number of support requests handled by the international transaction log service desk from 1 October 2018 to 30 September 2019**



## 6. Change management activities

37. Since the go-live of the ITL, the ITL administrator has established a change management procedure for making changes to the data exchange standards and to the common operational procedures governing various processes.

38. In the reporting period no change requests were submitted and the ITL administrator continued to maintain and keep the data exchange standards up to date in collaboration with RSAs.

39. Owing to diverging views on implementing the carry-over process for Parties included in Annex I without quantified emission limitation or reduction commitments for the second commitment period, it has not been possible to issue a final version of the data exchange standards with complete support for the second commitment period processes. The SBI may wish to provide guidance to the ITL administrator on this issue, the resolution of which is essential to ensuring accurate accounting of all Kyoto Protocol units.

## 7. Communications

40. The ITL administrator continues to facilitate collaboration among RSAs to ensure the accurate, efficient and secure operation of registry systems. To support this process, the ITL administrator utilizes and maintains a number of communication channels, including the RSA extranet collaboration platform, pages on the public UNFCCC website and a monthly ITL team newsletter.

41. The ITL administrator supported the work of the secretariat in updating the UNFCCC website to improve public access to the ITL information using modern and user-friendly technology.

42. The turnover in RSAs is relatively high, and the registry system and accounting of Kyoto Protocol units are complex matters, leading to a steep learning curve for newcomers. Since a large body of documentation and presentations, covering over 10 years of operations, is available on the RSA extranet, the ITL administrator has continued to explore how to make the most relevant presentations and documents available to newcomers for them to familiarize themselves quickly with the registry system processes and procedures and the accounting framework of the Kyoto Protocol.

## **D. Independent assessment of national registries and go-live activities**

### **1. Annual assessment activities**

43. The process of creating the SIARs<sup>11</sup> relies on the initial independent assessment of national registries. The process is followed by RSAs when reporting annually on changes in the national registries and providing information on accounting of Kyoto Protocol units, and guides the activities carried out by assessors when reviewing reported changes and accounting information. The final SIARs are forwarded to the expert review teams for consideration as part of the review of national registries.<sup>12</sup>

44. The ITL administrator continues to encourage and promote the engagement of RSAs in the SIAR process<sup>13</sup> with a view to stimulating the sharing of information on national registry related reporting and review and thus improving the quality of the information on national registries in the annual submissions and optimizing the ITL cost structure.

45. Before a registry assessment by the SIAR assessors, the Party submits an NIR and a SEF report to the secretariat. During the reporting period 38 Parties submitted their NIRs with information on changes in their national registries and SEF reports with information on transactions applicable to the second commitment period for 2018.

46. The following issues regarding the assessed registries were identified and addressed in the recommendations provided by the assessors in the final SIARs:

(a) Some Parties did not fully comply with the requirement contained in decision 13/CMP.1, annex, paragraphs 44–48, to make information publicly accessible;

(b) Some Parties did not fully comply with the requirement contained in decision 15/CMP.1, annex, paragraph 32, to provide complete information on changes to their national registry.

### **2. Go-live activities**

47. Since no go-live processes were initiated by registries in the reporting period, the ITL administrator did not need to provide relevant support. As at 30 September 2019, 38 national registries and the CDM registry were connected to the ITL (see annex I).

## **E. Registry System Administrators Forum**

48. The ITL administrator convenes the RSA Forum to coordinate the technical and management activities of RSAs, to provide a platform for RSAs to cooperate with each other and to provide input to the development of common operational procedures, recommended practices and information-sharing measures for registry systems.<sup>14</sup>

49. Participation in the RSA Forum is open to all national registry administrators, the CDM registry administrator and the EUTL administrator. A number of experts from Parties to the Kyoto Protocol that are not included in Annex I to the Convention are also invited to attend.

50. The 21<sup>st</sup> RSA Forum took place in Copenhagen on 2 October 2019. It was held back-to-back with a workshop organized by the Danish Business Authority on fraud prevention in greenhouse gas emissions trading systems, which was attended by the same participants. Presentations and discussions on the operations of registry systems provided:

(a) An update on actions arising from the previous RSA Forum;

(b) An overview of activities related to the ITL data centre migration;

(c) Information on the status of ITL operations, with a focus on transport layer security upgrades;

<sup>11</sup> Decision 16/CP.10, para. 5(a).

<sup>12</sup> Decision 16/CP.10, para. 6(k).

<sup>13</sup> Decision 16/CP.10, para. 6(c).

<sup>14</sup> Decision 16/CP.10.

(d) Feedback on the independent assessment reporting processes conducted during the reporting period.

51. Presentations were made and discussions held to promote information-sharing among RSAs and to provide feedback on related or emerging initiatives on the following matters:

- (a) The status of negotiations under Article 6 of the Paris Agreement;
- (b) The status of ratification of the Doha Amendment;
- (c) The Carbon Offsetting and Reduction Scheme for International Aviation.<sup>15</sup>

52. In discussing the status of ratification of the Doha Amendment, several RSAs expressed an interest in having a more in-depth discussion on issues related to the entry into force of the Doha Amendment, in particular with regard to reporting requirements and the impact on transactions of Kyoto Protocol units. As a result, a working group on those matters will be established in the first quarter of 2020.

## **F. Other activities**

53. The purpose of the security working group is to elaborate options for enhancing information security controls in systems supporting emissions trading under the Kyoto Protocol, as requested at SBI 40.<sup>16</sup>

54. The security working group did not meet during the reporting period as there were no specific matters to discuss. It is expected to meet in the future to discuss and coordinate the approach to implementing Transport Layer Security (TLS) 1.3 in registry systems.

55. The ITL administrator continues to monitor the negotiations under Article 6 of the Paris Agreement for any potential impacts on the ITL.

## **III. Organizational arrangements and resources**

56. The functions of the ITL administrator are assumed by the Information and Communication Technology programme of the secretariat, which is also responsible for software delivery and supporting the secretariat's information technology infrastructure.

### **A. Resource requirements and expenditure**

57. The resource requirements for activities relating to the ITL and the ITL administrator, to be funded from supplementary sources for the bienniums 2006–2007,<sup>17</sup> 2008–2009,<sup>18</sup> 2010–2011,<sup>19</sup> 2012–2013,<sup>20</sup> 2014–2015,<sup>21</sup> 2016–2017,<sup>22</sup> 2018–2019<sup>23</sup> and 2020–2021,<sup>24</sup> were identified in the proposed programme budgets for the respective bienniums.

58. The budget for the ITL for the biennium 2018–2019<sup>25</sup> is EUR 5,204,520, including a working capital reserve of EUR 216,240.

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<sup>15</sup> Presentation provided offline after the meeting owing to the fortieth session of the Assembly of the International Civil Aviation Organization taking place at the same time.

<sup>16</sup> FCCC/SBI/2014/8, para. 72.

<sup>17</sup> See document FCCC/SBI/2005/8/Add.2.

<sup>18</sup> See document FCCC/SBI/2007/8/Add.2.

<sup>19</sup> See document FCCC/SBI/2009/2/Add.3.

<sup>20</sup> See document FCCC/SBI/2011/2/Add.3.

<sup>21</sup> See document FCCC/SBI/2013/6/Add.3.

<sup>22</sup> See document FCCC/SBI/2015/3/Add.3.

<sup>23</sup> See document FCCC/SBI/2017/4/Add.2.

<sup>24</sup> See document FCCC/SBI/2019/4/Add.2.

<sup>25</sup> See decision 7/CMP.13.

59. CMP 3 requested the Executive Secretary to provide a breakdown of expenditure on the development and operation of the ITL with a view to optimizing its cost structure.<sup>26</sup> Table 1 shows the expenditure of the ITL in the biennium 2018–2019 by object of expenditure.

Table 1

**Expenditure of the international transaction log in the biennium 2018–2019 as at 30 September 2019**

(Euros)

<i>Object of expenditure</i>	<i>Expenditure</i>
Staff costs	1 229 319
Contractual and consultancy services	1 589 425 <sup>a</sup>
Expert groups	6 016
Travel of staff	5 321
General operating expenses	30 665
Contributions to common services	170 969
Programme support costs	394 123
<b>Total expenditure</b>	<b>3 425 838</b>

<sup>a</sup> Includes EUR 396,333 obligated for contractual services until the end of 2019 but not spent in the first nine months of 2019.

60. Table 2 shows the expected percentage breakdown of estimated expenditure on contractors and consultants in 2019. Operational services are activities performed by the developer and operators of the ITL to sustain all operations of the ITL, such as infrastructure maintenance and the service desk. Software maintenance services are services performed by the developer of the ITL to support the software implementation activities outlined in this report. Consultancy expenditure is incurred when the secretariat needs to consult experts in specific fields.

Table 2

**Expected percentage breakdown of expenditure of the international transaction log on contractors and consultants in 2019**

<i>Object of expenditure</i>	<i>Percentage of expenditure (%)</i>
Operational services	80
Production and disaster recovery environments	54
Service desk	11
Registry developer support	3
Security and disaster recovery testing	12
Software maintenance services	16
Consultancy	4

61. CMP 4 requested the ITL administrator to report on planned activities and the related resource requirements with a view to ensuring that adequate means are available to perform those activities.<sup>27</sup>

62. In 2019 the focus of the activities of the ITL was on completing the transition to the cloud-based service provider and continuing efforts to ensure that registry systems operate securely and reliably.

63. Owing to several staff departures, the staffing level of the ITL during the reporting period was below the requirements included in its budget.

64. The ITL staff:

<sup>26</sup> Decision 11/CMP.3, para. 14.

<sup>27</sup> FCCC/KP/CMP/2008/11, para. 72.

- (a) Provide technical services through the ITL to enable national registries and the CDM registry to perform transactions of Kyoto Protocol units;
- (b) Ensure reliable hosting for the ITL and perform upgrades to the hardware and software of the ITL infrastructure, as necessary;
- (c) Provide support to national registries, the consolidated system of European Union registries, the EUTL, the CDM registry, the joint implementation and CDM information systems and the compilation and accounting database in order to maintain their connections and operations with the ITL;
- (d) Initialize, perform and support go-live events for registries not yet connected;
- (e) Support changes to the data exchange standards pursuant to decision 24/CP.8 and new releases of ITL and SEF reporting software resulting from operational experience and changes adopted under the common operational procedures for change management;
- (f) Facilitate the annual reporting on and review of national registries and accounting of greenhouse gas emission units under Articles 7 and 8 of the Kyoto Protocol;
- (g) Administer and maintain the RSA extranet;
- (h) Facilitate cooperation among RSAs through the RSA Forum and its working groups to ensure that registry systems are accurate, efficient and secure;
- (i) Support testing of the ITL and registry systems, including through disaster recovery testing and security audits, with a view to enhancing the reliability and security of the ITL;
- (j) Make available online training and guidance materials to RSAs and relevant experts from Parties to the Kyoto Protocol that are not included in Annex I to the Convention on the general functioning of the ITL and registry systems, the common operational procedures and other relevant knowledge areas;
- (k) Support the ITL administrator in meeting its obligations in accordance with all applicable decisions of the COP and the CMP;
- (l) Monitor and support the negotiations under Article 6 of the Paris Agreement to identify potential impacts on the ITL.

## **B. Income for the activities of the administrator of the international transaction log**

65. As at 30 September 2019, USD 1,963,788 in ITL user fees had been received from Parties for 2007,<sup>28</sup> USD 4,518,060 for 2008, USD 4,745,041 for 2009, EUR 3,014,423 for 2010, EUR 3,014,423 for 2011, EUR 2,885,010 for 2012, EUR 2,759,483 for 2013, EUR 2,740,760 for 2014, EUR 2,740,760 for 2015, EUR 2,602,275 for 2016, EUR 2,602,275 for 2017, EUR 1,352,260 for 2018, and EUR 1,187,231 for 2019 with EUR 165,029 outstanding. Two Parties were credited with advances towards their 2019 ITL fees as a result of overpayment of their 2018 fees and advance payment of their 2019 fees. The secretariat would like to express its gratitude to the Parties that have paid their fees. The scale of ITL fees and the status of fee payments for the biennium 2018–2019 as at 30 September 2019 are shown in annex II. The status of fees as at 30 September 2019 is shown in tables 3 and 4.

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<sup>28</sup> This figure differs from that provided in the annual reports of the ITL administrator prior to 2011 because USD 48,693 in user fees for 2007 was received in July 2011.

Table 3  
**Fees for international transaction log activities in the period 2007–2009 and cumulative shortfall as at 30 September 2019**

(United States dollars)

	2007	2008	2009
Fees budgeted	2 500 000	4 518 060	4 745 741
Fees received	1 963 788	4 518 060	4 745 741
Shortfall	536 212	0	0
Cumulative shortfall	536 212	536 212	536 212

Table 4  
**Fees for international transaction log activities in the period 2010–2019 and cumulative shortfall as at 30 September 2019**

(Euros)

	2010 <sup>a</sup>	2011	2012	2013	2014 <sup>b</sup>	2015 <sup>b</sup>	2016 <sup>b</sup>	2017 <sup>b</sup>	2018 <sup>b</sup>	2019 <sup>b</sup>
Fees budgeted original	3 014 423	3 014 423	2 885 010	2 885 010	2 740 760	2 740 760	2 675 679 <sup>c</sup>	2 675 675 <sup>c</sup>	1 352 260	1 352 260
Fees budgeted revised							2 602 275 <sup>d</sup>	2 602 275 <sup>d</sup>		
Fees received	3 014 423	3 014 423	2 885 010	2 759 483	2 740 760	2 740 760	2 602 275	2 602 275	1 352 260	1 187 231
Shortfall	0	0	0	125 527	0	0	0	0	0	165 029
Cumulative shortfall	374 812	374 812	374 812	500 339	374 812	374 812	374 812	374 812	374 812	539 841

<sup>a</sup> The shortfall for 2009 in United States dollars was carried over to 2010 in euros using the average exchange rate of EUR 0.699 applicable on the day of conversion.

<sup>b</sup> Canada's shortfall of EUR 125,527 was not carried over to 2014 and the following years owing to Canada's withdrawal from the Kyoto Protocol and the resulting disconnection of its registry from the ITL.

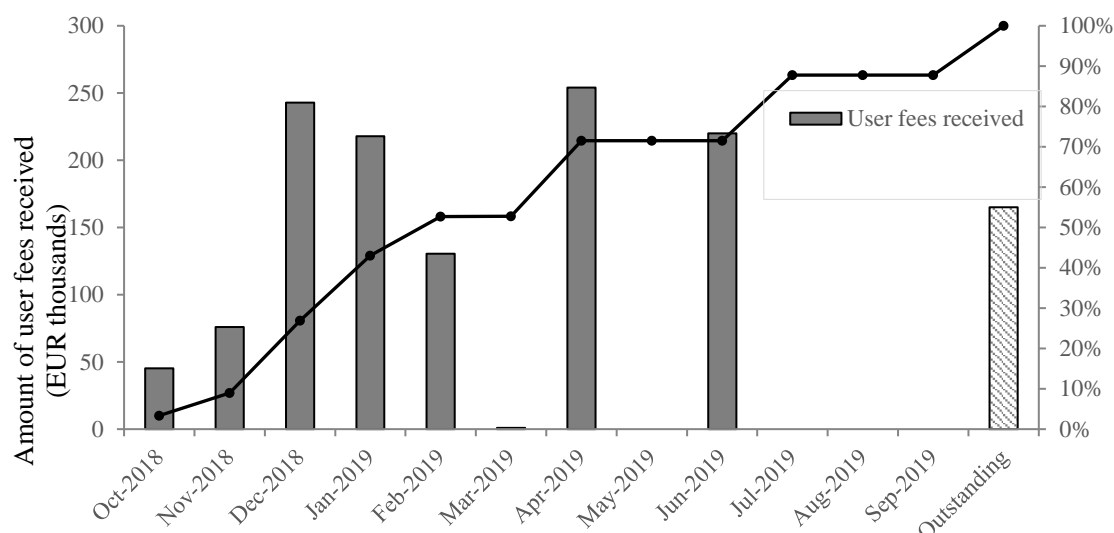
<sup>c</sup> The amount of fees budgeted for the biennium 2016–2017 as per decision 8/CMP.11.

<sup>d</sup> The amount of fees budgeted for the biennium 2016–2017 decreased resulting from the disconnection of a Party from the ITL in 2015.

66. Delays in receiving user fees from Parties were noted in previous annual reports of the ITL administrator. As at 30 September 2019, EUR 165,029 was still due for 2019 (12.2 per cent of the fees budgeted for 2019). Figure 7 shows the user fees received for 2019 in 2018 and 2019 as at 30 September 2019 and the cumulative percentage of resource requirements by month.

Figure 7

**International transaction log user fees for 2019 received in 2018 and 2019 as at 30 September 2019**



67. CMP 13 requested the ITL administrator to disclose in its annual report the unspent balance of the Trust Fund for the International Transaction Log from the previous biennium as at the time of the publication of the report.<sup>29</sup>

68. As at 31 December 2018, the unspent balance of the Trust Fund for the International Transaction Log was USD 7,983,000, not including the operating reserve of USD 247,000.<sup>30</sup>

### C. Optimizing the cost structure of the international transaction log

69. The ITL administrator continues to seek ways to optimize the ITL cost structure and is currently considering or continuing the following measures:

- (a) Optimizing the data hosting, technology refresh, and licence and third-party support costs of the required software and hardware;
- (b) Systematizing, documenting and addressing typical incident, user error and user problem scenarios, while providing proactive guidance to registry systems, to minimize their reoccurrence and associated remedial costs;
- (c) Simplifying registry testing arrangements, registry contact management and digital certificate management with the goal of optimizing the costs associated with those activities;
- (d) Engaging RSAs in the centralized annual review of national registries, thereby avoiding the cost of consultants and minimizing travel costs;
- (e) Providing options for virtual participation and remote meetings with the goal of reducing travel and meeting costs;
- (f) Identifying ways to employ secretariat staff instead of consultants or contractors, where possible, including options for consolidating activities related to the ITL service desk, software development and application support.

70. Options for optimizing the functions and costs of the service desk and software development were identified and quantified. It was concluded that it would not be financially viable to internalize either function. A detailed review of the application support function is yet to be carried out.

<sup>29</sup> Decision 7/CMP.13, para. 7.

<sup>30</sup> These are preliminary figures; audited figures have been made available in the report of the United Nations Board of Auditors on the financial statements of the UNFCCC for the year 2018 (FCCC/SBI/2019/INF.9).



## Annex I

## Registry status as at 30 September 2019

<i>Registry</i>	<i>Issue date of independent assessment report</i>	<i>Date of live connection to the ITL</i>
Australia	19 December 2008	19 December 2008
Austria	12 July 2007	16 October 2008
Belarus	—	—
Belgium	7 December 2007	16 October 2008
Bulgaria	10 April 2008	16 October 2008
CDM	Not applicable	14 November 2007
Croatia	30 April 2008	11 December 2009
Cyprus	1 February 2017	4 November 2016
Czechia	1 August 2007	16 October 2008
Denmark	16 October 2008	16 October 2008
Estonia	12 November 2007	16 October 2008
European Union	1 February 2008	16 October 2008
Finland	16 November 2007	16 October 2008
France	9 November 2007	16 October 2008
Germany	23 November 2007	16 October 2008
Greece	27 September 2007	16 October 2008
Hungary	8 August 2007	11 July 2008
Iceland	3 January 2008	6 May 2010
Ireland	19 September 2007	16 October 2008
Italy	5 December 2007	16 October 2008
Japan	9 July 2007	14 November 2007
Kazakhstan	—	—
Latvia	13 November 2007	16 October 2008
Liechtenstein	7 December 2007	21 October 2008
Lithuania	29 October 2007	16 October 2008
Luxembourg	7 December 2007	16 October 2008
Malta	22 February 2017	4 November 2016
Monaco	9 April 2008	30 July 2015
Netherlands	19 September 2007	16 October 2008
New Zealand	27 July 2007	3 December 2007
Norway	27 September 2007	21 October 2008
Poland	5 December 2007	16 October 2008
Portugal	24 October 2007	16 October 2008
Romania	30 April 2008	16 October 2008
Russian Federation <sup>a</sup>	12 November 2007	4 March 2008
Slovakia	13 September 2007	16 October 2008
Slovenia	25 October 2007	16 October 2008
Spain	8 October 2007	16 October 2008
Sweden	9 November 2007	16 October 2008
Switzerland	8 August 2007	4 December 2007
Ukraine	10 December 2007	28 October 2008
United Kingdom	16 August 2007	16 October 2008

<sup>a</sup> Disconnected from the ITL on 30 December 2015 in accordance with decision 8/CMP.11.

## Annex II

### Scale of international transaction log fees and status of fee payments for the biennium 2018–2019 as at 30 September 2019

Party	Scale of fees (%)	2018				2019			
		Budgeted (EUR)	Balance of fees after credit from unspent balances (EUR)	Received (EUR)	Outstanding (EUR)	Budgeted (EUR)	Balance of fees after credit from unspent balances (EUR)	Received (EUR)	Outstanding (EUR)
Australia	2.841	75 960	39 472	39 472	0	75 960	39 472	0	39 472
Austria	1.588	42 443	22 055	22 055	0	42 443	22 055	22 055	0
Belarus <sup>a</sup>	0.073	—	—	0	—	—	—	—	—
Belgium	1.973	52 748	27 410	0	27 410	52 748	27 410	0	27 410
Bulgaria	0.036	963	500	500	0	963	500	500	0
Croatia	0.079	2 108	1 095	1 095	0	2 108	1 095	1 095	0
Cyprus	0.061	1 639	852	852	0	1 639	852	852	0
Czechia	0.503	13 454	6 991	6 991	0	13 454	6 991	6 991	0
Denmark	1.323	35 365	18 377	18 377	0	35 365	18 377	18 377	0
Estonia	0.028	755	392	392	0	755	392	392	0
European Union	2.685	71 770	37 295	37 295	0	71 770	37 295	37 295	0
Finland	1.009	26 985	14 023	14 023	0	26 985	14 023	0	14 023
France	10.667	285 182	148 194	148 194	0	285 182	148 194	148 194	0
Germany	15.35	410 402	213 266	213 266	0	410 402	213 266	213 266	0
Greece	1.065	28 469	14 794	14 794	0	28 469	14 794	14 794	0
Hungary	0.437	11 684	6 072	6 072	0	11 684	6 072	6 072	0
Iceland	0.737	19 699	10 237	10 237	0	19 699	10 237	10 237	0
Ireland	0.797	21 313	11 075	11 075	0	21 313	11 075	11 075	0
Italy	9.090	242 999	126 274	126 274	0	242 999	126 274	126 274	0
Japan	14.939	399 369	207 531	207 531	0	399 369	207 531	207 531	0
Kazakhstan <sup>a</sup>	0.157	—	—	0	—	—	—	—	—
Latvia	0.032	859	446	446	0	859	446	446	0
Liechtenstein	0.188	5 022	2 610	2 610	0	5 022	2 610	2 610	0
Lithuania	0.055	1 483	771	771	0	1 483	771	771	0
Luxembourg	0.153	4 086	2 123	2 123	0	4 086	2 123	2 123	0
Malta	0.021	572	297	0	297	572	297	297	0
Monaco	0.181	4 840	2 515	2 515	0	4 840	2 515	2 515	0
Netherlands	3.352	89 622	46 572	46 572	0	89 622	46 572	46 572	0
New Zealand	0.961	25 684	13 347	13 347	0	25 684	13 347	13 347	0
Norway	2.319	61 986	32 211	0	32 211	61 986	32 211	32 211	0
Poland	0.896	23 941	12 441	12 441	0	23 941	12 441	12 441	0
Portugal	0.943	25 216	13 103	13 103	0	25 216	13 103	13 103	0
Romania	0.125	3 331	1 731	1 731	0	3 331	1 731	1 731	0
Russian Federation <sup>a</sup>	2.743	—	—	0	—	—	—	—	—
Slovakia	0.113	3 019	1 569	1 569	0	3 019	1 569	1 569	0
Slovenia	0.171	4 580	2 380	2 380	0	4 580	2 380	2 380	0
Spain	5.311	141 979	73 779	73 779	0	141 979	73 779	0	73 779
Sweden	1.917	51 238	26 626	26 626	0	51 238	26 626	26 626	0
Switzerland	2.760	73 774	38 337	38 337	0	73 774	38 337	38 337	0
Ukraine	0.745	19 907	10 345	0	10 345	19 907	10 345	0	10 345
United Kingdom	11.888	317 814	165 152	165 152	0	317 814	165 152	165 152	0
<b>Total</b>		<b>2 602 260</b>	<b>1 352 260</b>	<b>1 281 997</b>	<b>70 263</b>	<b>2 602 260</b>	<b>1 352 260</b>	<b>1 187 231</b>	<b>165 029</b>

<sup>a</sup> Not currently connected to the ITL, but will be subject to ITL fees in case of connection or reconnection to the ITL in accordance with decision 7/CMP.13, paras. 11–13.

## Annex III

### Number of transactions proposed to the international transaction log from 1 October 2018 to 30 September 2019

<i>Registry</i>	<i>Acquisition<sup>a</sup></i>	<i>Transfer<sup>b</sup></i>	<i>Forwarding<sup>c</sup></i>	<i>Internal transfer<sup>d</sup></i>	<i>Issuance<sup>e</sup></i>	<i>Retirement<sup>f</sup></i>	<i>Cancellation<sup>g</sup></i>	<i>Total</i>
Australia	53	46	0	0	0	0	156	255
Austria	1	3	0	1	0	0	0	5
Belarus <sup>h</sup>	0	0	0	0	0	0	0	0
Belgium	0	1	0	0	0	0	0	1
Bulgaria	0	0	0	0	0	0	0	0
CDM	0	16	444	0	275	0	5 757	6 492
Croatia	0	0	0	0	0	0	0	0
Cyprus	0	0	0	0	0	0	0	0
Czechia	0	0	0	0	0	0	1	1
Denmark	2	1	0	0	0	0	0	3
Estonia	0	0	0	0	0	0	0	0
European Union	278	178	0	0	0	0	588	1 044
Finland	24	14	0	6	0	0	3	47
France	5	0	0	0	0	0	22	27
Germany	46	53	0	0	0	0	89	188
Greece	0	0	0	0	0	0	0	0
Hungary	0	0	0	0	0	0	1	1
Iceland	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	0	0
Italy	24	6	0	0	0	0	1	31
Japan	0	0	0	0	0	0	0	0
Kazakhstan <sup>h</sup>	0	0	0	0	0	0	0	0
Latvia	0	0	0	0	0	0	0	0
Liechtenstein	3	0	0	0	0	0	0	3
Lithuania	0	0	0	0	0	0	0	0
Luxembourg	8	0	0	0	0	0	0	8
Malta	0	0	0	0	0	0	0	0
Monaco	4	0	0	0	0	0	0	4
Netherlands	19	76	0	1	0	0	110	206
New Zealand	0	0	0	0	0	0	121	121
Norway	15	6	0	4	0	0	30	55
Poland	0	0	0	0	0	0	0	0
Portugal	0	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0	0
Russian Federation <sup>h</sup>	0	0	0	0	0	0	0	0
Slovakia	0	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0	0
Spain	16	30	0	30	0	0	33	109
Sweden	32	44	0	19	0	0	38	133
Switzerland	122	136	0	67	0	0	179	504
Ukraine	0	0	0	0	0	0	0	0
United Kingdom	37	95	0	0	0	0	124	256
<b>Total</b>	<b>689</b>	<b>705</b>	<b>444</b>	<b>128</b>	<b>275</b>	<b>0</b>	<b>7 253</b>	<b>9 494</b>

*Note:* Completed transactions of AAUs, ERUs, RMUs, CERs, long-term CERs and temporary CERs have been accounted for.

<sup>a</sup> Acquisition from another national registry. See decision 13/CMP.1, annex, para. 30.

<sup>b</sup> Transfer to another national registry. See decision 13/CMP.1, annex, para. 30.

<sup>c</sup> Forwarding from the CDM registry to a national registry. See decision 3/CMP.1, annex, para. 66(b). Transfers from the CDM registry to a national registry in support of the Adaptation Fund are excluded.

<sup>d</sup> Transfer within the registry. See decision 13/CMP.1, annex, para. 30.

<sup>e</sup> See decisions 13/CMP.1, annex, paras. 23–29; 3/CMP.1, annex, paras. 64–66; and 5/CMP.1, annex, paras. 36–37. Issuance of ERUs by converting AAUs or RMUs is included.

<sup>f</sup> See decision 13/CMP.1, annex, para. 34.

<sup>g</sup> See decision 13/CMP.1, annex, para. 33.

<sup>h</sup> Not currently connected to the ITL.

## Annex IV

**Number of Kyoto Protocol units subject to transactions proposed to the international transaction log  
from 1 October 2018 to 30 September 2019**

<i>Registry</i>	<i>Acquisition<sup>a</sup></i>	<i>Transfer<sup>b</sup></i>	<i>Net transfer<sup>c</sup></i>	<i>Forwarding<sup>d</sup></i>	<i>Internal transfer<sup>e</sup></i>	<i>Issuance<sup>f</sup></i>	<i>Retirement<sup>g</sup></i>	<i>Cancellation<sup>h</sup></i>
Australia	14 202 006	1 335 953	-12 866 053	0	0	0	0	2 727 661
Austria	9 684	1 637 678	1 627 994	0	68 238	0	0	0
Belarus <sup>i</sup>	0	0	0	0	0	0	0	0
Belgium	0	1 523	1 523	0	0	0	0	0
Bulgaria	0	0	0	0	0	0	0	0
CDM	0	616 802	616 802	43 005 374	0	46 320 421	0	11 277 809
Croatia	0	0	0	0	0	0	0	0
Cyprus	0	0	0	0	0	0	0	0
Czechia	0	0	0	0	0	0	0	15 675
Denmark	952	1 199	247	0	0	0	0	0
Estonia	0	0	0	0	0	0	0	0
European Union	31 108 342	6 820 997	-24 287 345	0	0	0	0	4 839 091
Finland	394 888	306 201	-88 687	0	37 492	0	0	11 332
France	642 732	0	-642 732	0	0	0	0	136 864
Germany	4 236 729	6 119 778	1 883 049	0	0	0	0	2 079 881
Greece	0	0	0	0	0	0	0	0
Hungary	0	0	0	0	0	0	0	1 301
Iceland	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	0	0
Italy	130 000	57 409	-72 591	0	0	0	0	375
Japan	0	0	0	0	0	0	0	0
Kazakhstan <sup>i</sup>	0	0	0	0	0	0	0	0
Latvia	0	0	0	0	0	0	0	0
Liechtenstein	50 938	0	-50 938	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0	0
Luxembourg	17 069	0	-17 069	0	0	0	0	0
Malta	0	0	0	0	0	0	0	0
Monaco	37 000	0	-37 000	0	0	0	0	0
Netherlands	8 529 729	18 401 485	9 871 756	0	1 106	0	0	492 551
New Zealand	0	0	0	0	0	0	0	3 237 682

<i>Registry</i>	<i>Acquisition<sup>a</sup></i>	<i>Transfer<sup>b</sup></i>	<i>Net transfer<sup>c</sup></i>	<i>Forwarding<sup>d</sup></i>	<i>Internal transfer<sup>e</sup></i>	<i>Issuance<sup>f</sup></i>	<i>Retirement<sup>g</sup></i>	<i>Cancellation<sup>h</sup></i>
Norway	206 099	355 359	149 260	0	3 752 187	0	0	80 684
Poland	0	0	0	0	0	0	0	0
Portugal	0	0	0	0	0	0	0	0
Romania	0	0	0	0	0	0	0	0
Russian Federation <sup>i</sup>	0	0	0	0	0	0	0	0
Slovakia	0	0	0	0	0	0	0	0
Slovenia	0	0	0	0	0	0	0	0
Spain	346 954	365 755	18 801	0	25 769	0	0	357 437
Sweden	1 626 833	3 115 232	1 488 399	0	304 616	0	0	150 188
Switzerland	9 258 827	12 607 107	3 348 280	0	2 498 287	0	0	1 936 167
Ukraine	0	0	0	0	0	0	0	0
United Kingdom	6 530 029	26 203 135	19 673 106	0	0	0	0	4 362 333
<b>Total</b>	<b>77 328 811</b>	<b>77 945 613</b>	<b>616 802</b>	<b>43 005 374</b>	<b>6 687 695</b>	<b>46 320 421</b>	<b>0</b>	<b>31 707 031</b>

*Note:* Completed transactions of AAUs, ERUs, RMUs, CERs, long-term CERs and temporary CERs have been accounted for.

<sup>a</sup> Acquisition from another national registry. See decision 13/CMP.1, annex, para. 30.

<sup>b</sup> Transfer to another national registry. See decision 13/CMP.1, annex, para. 30.

<sup>c</sup> Net transfer is equal to transfer minus acquisition.

<sup>d</sup> Forwarding from the CDM registry to a national registry. See decision 3/CMP.1, annex, para. 66(b). Transfers from the CDM registry to a national registry in support of the Adaptation Fund are excluded.

<sup>e</sup> Transfer within the registry. See decision 13/CMP.1, annex, para. 30.

<sup>f</sup> See decisions 13/CMP.1, annex, paras. 23–29; 3/CMP.1, annex, paras. 64–66; and 5/CMP.1, annex, paras. 36–37. Issuance of ERUs by converting AAUs or RMUs is included.

<sup>g</sup> See decision 13/CMP.1, annex, para. 34.

<sup>h</sup> See decision 13/CMP.1, annex, para. 33.

<sup>i</sup> Not currently connected to the ITL.