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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 twelfth annual report of the administrator of the international transaction log (ITL) 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 ITL administrator for the period from 1 October 2015 to 30 September 2016. This report also contains information on transactions of Kyoto Protocol units, as requested at CMP 6, and information on the outcomes of the 18th Registry System Administrators Forum, which took place on 29 and 30 September 2016 in Bonn, Germany. The CMP, by decision 12/CMP.1, requested the Subsidiary Body for Implementation (SBI) to consider, at its future sessions, the annual reports of the ITL administrator. The SBI may wish to take note of the information contained in this report and to provide guidance to the secretariat and Parties, as necessary, concerning the implementation of registry systems.

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I. Introduction

A. Mandate

1. The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP), by decision 13/CMP.1, paragraph 38, requested the secretariat to establish and maintain an international transaction log (ITL) to verify the validity of transactions proposed by registries established under decisions 3/CMP.1 and 13/CMP.1. The ITL is essential for the implementation of the mechanisms under Articles 6, 12 and 17 of the Kyoto Protocol.

2. The Conference of the Parties (COP), by decision 16/CP.10, paragraph 6(m), 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.

3. The CMP, by decision 12/CMP.1, paragraph 11, requested the Subsidiary Body for Implementation (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.

B. Scope of the note

4. This twelfth annual report of the ITL administrator to the CMP provides information on the implementation of the ITL and its operational status, including the facilitation of cooperation with registry system administrators (RSAs) through the activities of the Registry System Administrators Forum (RSA Forum) and the independent assessment of registry systems. The report also contains information on transactions of Kyoto Protocol units.

5. The reporting period covered by this report is 1 October 2015 to 30 September 2016.

C. Possible action by the Subsidiary Body for Implementation

6. 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.

II. Work undertaken since the publication of the eleventh annual report of the administrator of the international transaction log under the Kyoto Protocol

A. Summary of work undertaken

7. The ITL administrator has continued to convene the RSA Forum and to coordinate the work of its working groups.

8. The activities related to the seventh and eighth annual assessments of national registries and accounting of Kyoto Protocol units were conducted. These activities included the generation of standard independent assessment reports (SIARs) on the basis of annual national inventory reports (NIRs) and annual standard electronic format (SEF) reports with

information on transactions and changes in national registries applicable to the first and second commitment periods of the Kyoto Protocol for 2014 and 2015.

9.   The activities related to the assessment of the true-up period[1] for the first commitment period of the Kyoto Protocol were completed successfully. The activities included the generation of true-up period assessment reports on the basis of reported information for the additional period for fulfilling commitments for the first commitment period of the Kyoto Protocol.

10.   The ITL administrator has 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

11.   During the reporting period, there were three releases of the ITL software. The first release included new ITL checks that were required to manage the end of the true-up period and the time frame for carry-over. The second release contained mostly minor bug fixes for the ITL management interface and the third release addressed some security-related issues that had been reported in the ITL security audit performed during the previous reporting period.

2.   Standard electronic format reporting application releases

12.   In accordance with decision 15/CMP.1, annex, paragraph 11, Parties included in Annex I shall report, in SEF, information on emission reduction units, certified emission reductions (CERs), temporary CERs, long-term CERs, assigned amount units and removal units from their national registry transferred or acquired in the year preceding the reporting year.

13.   Decision 3/CMP.11 requests the ITL administrator to develop an application to facilitate the submission of the SEF for reporting Kyoto Protocol units under the second commitment period of the Kyoto Protocol and to report on progress in the development and testing of that application in the present annual report.

14.   The ITL administrator developed a SEF reporting application to enable the preparation of the reports, as specified in the eleventh annual report of the ITL administrator.[2] During the reporting period, the ITL administrator prepared and released a new version of the SEF reporting application, containing minor bug fixes.

3.   International transaction log operational procedures

15.   The existing operational procedure for the management of registry contacts and personal identification number credentials has been extended to support e-mail certificates as an alternative means of authentication and authorization for RSAs.

16.   There were two other operational procedures adopted during the reporting period: the new change management procedure that had been presented to RSAs at the 17th RSA Forum in 2015 and the new security incident procedure (see para. 58 below).

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[1] A 100-day period after final emissions have been reported for the commitment period during which Parties have the opportunity to undertake final decisions necessary to achieve compliance with their commitments under Article 3, paragraph 1, of the Kyoto Protocol.

[2] FCCC/SBI/2015/INF.12, paragraph 13.

4. International transaction log technology maintenance

17.   During the reporting period, a migration of all digital server certificates deployed with registry systems was carried out to support the new industry-recommended encryption grade SHA-256.

5. Data centre hosting procurement process

18.   In support of the activity included in the budget for the ITL for the biennium 2016–2017,[3] the secretariat initiated an international competitive procurement process for the hosting of the data centre, which includes the contracting of vendors sustaining the work of the secretariat on the ITL. Following the finalization of the procurement process, migration of the ITL system including application, hardware and network infrastructure along with the ITL service desk and systems support, will take place; the plan is to complete the migration in 2018.

6. Information and communication technology security framework agreement

19.   The ITL system continues to be operated in a safe and secure manner by, among other measures, conducting annual security audits to determine and evaluate potential security weaknesses in the system. Historically, these security audits have been conducted by the operator of the ITL. The secretariat is in the process of completing a competitive procurement process to select external vendors under the information and communication technology (ICT) security framework agreement. The selected vendors will be utilized to conduct periodic vulnerability and penetration testing of the ITL system in an independent manner consistent with the recommended ICT security audit practices, with the goal of improving the security of the ITL and registry systems.

7. Project and service management

20.   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 information technology infrastructure for the secretariat. The ITL administrator is supporting arrangements to enhance the ICT project and service management in order to further optimize ITL services and the outcomes of the data centre hosting and the ICT security framework activities described in paragraphs 18 and 19 above.

C. Operational activities

1. Support for registry testing

21.   During the reporting period, the ITL administrator supported the initialization of functional testing for the second commitment period of the Kyoto Protocol for two national registries[4] that are part of the European Union Emissions Trading System (EU ETS). Furthermore, the functional testing and complete software and infrastructure migration of one national registry not part of the EU ETS was supported by the ITL administrator.

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[3] FCCC/SBI/2015/3/Add.3, paragraph 11.

[4] 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.

### 2. International transaction log disaster recovery testing

22.   The annual disaster recovery testing of the ITL was executed in July 2016 in collaboration with the EU ETS support teams and with the participation of two registries, one being an EU ETS registry. The testing was successful and the time to failover, that is the time within which the ITL service is restored on the secondary site after a simulated disaster on the primary site, was 75 minutes, where the recovery time objective for such a situation is 180 minutes. The improved time to failover compared with the testing in the previous year was due to the consideration of the findings made in the previous year after a major infrastructure upgrade was undertaken on the ITL. A number of new findings were made and incorporated into the disaster recovery plan to be tested in 2017.

3. Transaction data and analysis

23.   The volume of activity in the ITL can be measured with various transactional and operational metrics. Figure 1 shows the number of transactions proposed to the ITL in the production environment[5] each month during the reporting period. Furthermore, the breakdown by registry of the number of transactions and the number of Kyoto Protocol units subject to transactions proposed to the ITL from 1 October 2015 to 30 September 2016 are shown in annexes III and IV, respectively.

Figure 1
Number of transactions proposed to the international transaction log from 1 October 2015 to 30 September 2016
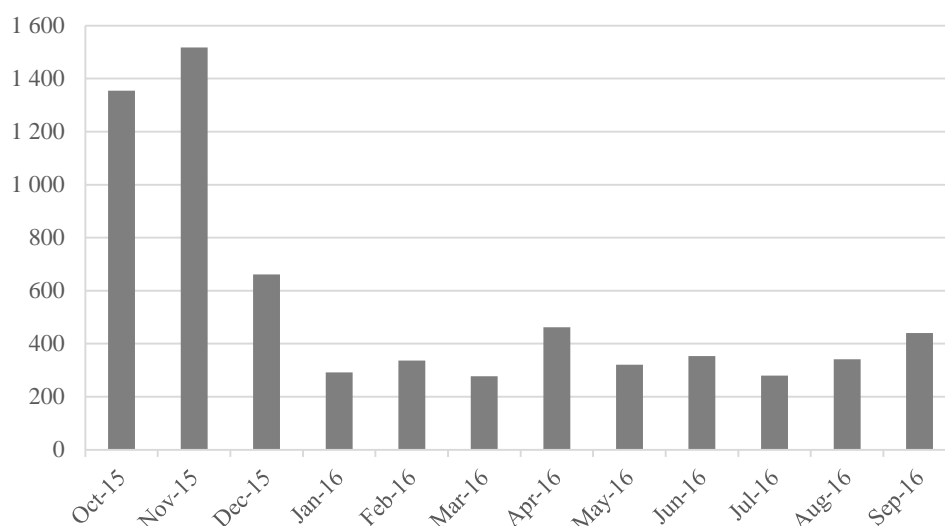
24.   The higher number of transactions observed in October and November 2015 is an effect of the end of the true-up period, which was set as 18 November 2015. After this date no further external transfers involving first commitment period units were allowed by the ITL.

25.   There are two types of transaction in the registry systems and the ITL: external transactions and non-external transactions. External transactions are transactions in which the units involved leave the originating registry and arrive in a different registry. Non-external transactions are transactions in which the units stay in the same registry. Figure 2

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[5]   The live system of the ITL used to support emissions trading under the Kyoto Protocol.

shows the evolution of the breakdown of external and non-external transactions in the ITL from 1 October 2015 to 30 September 2016.

Figure 2
Number of external compared with non-external transactions from 1 October 2015 to 30 September 2016
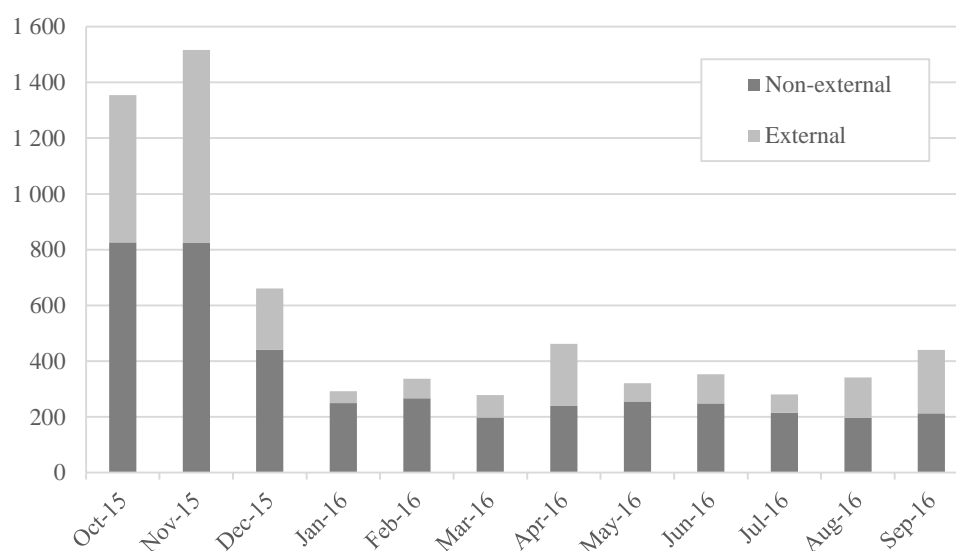
26.   Transactions proposed to the ITL end in one of three statuses: terminated, cancelled or completed.

27.   The transaction completion time includes the latency incurred by the travel time of messages through the registry network and the processing time within registries, the ITL and the European Union Transaction Log (EUTL) if an EU ETS registry is involved in the transaction. The monthly averages of the transaction completion time from 1 October 2015 to 30 September 2016 are displayed in figure 3.

Figure 3
Monthly averages of transaction completion time from 1 October 2015 to 30 September 2016
(seconds)
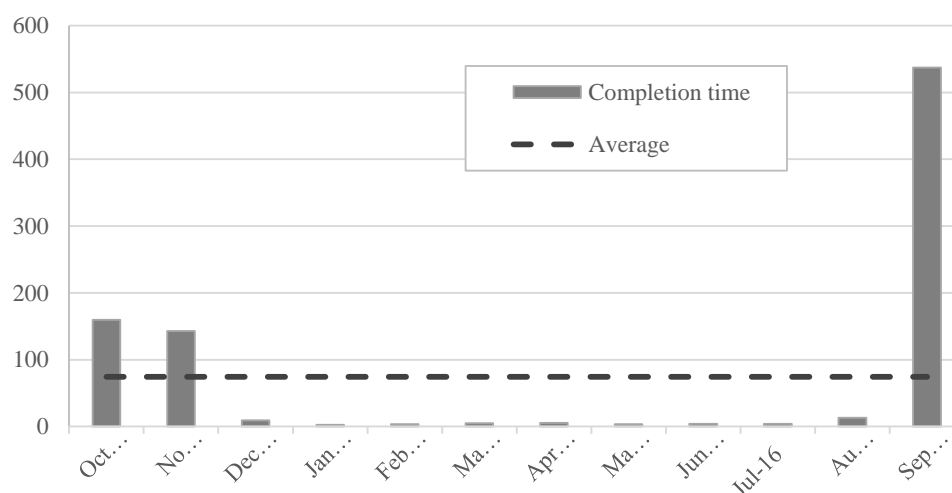
28.   The longer average completion time observed in September 2016 was due to the unplanned unavailability of one national registry, causing some transactions to stall for one day before being completed. The elevated average completion times in October and November 2015 were also due to temporary periods of unavailability on the side of one national registry and supplementary transaction log system.

29.   Transactions that are not compliant with ITL specifications in the Data Exchange Standards (DES)[6] are terminated by the ITL. The transaction termination ratio is obtained by dividing the number of terminated transactions by the number of transactions proposed in a given time frame. This ratio can be considered an indicator of the level of internal checking performed by registries to ensure that the proposed transaction and its data records are accurate. The evolution of the ratio from 1 October 2015 to 30 September 2016 is shown in figure 4.

30.   When a transaction has not reached a final status within 24 hours, it is automatically cancelled through a clean-up mechanism. The transaction cancellation ratio is obtained by dividing the number of cancelled transactions by the number of proposed transactions in a given time frame. This ratio can be considered an indicator of the extent of communication problems in registry systems. Figure 4 provides the transaction cancellation ratios from 1 October 2015 to 30 September 2016.

Figure 4
Transaction cancellation and termination ratios from 1 October 2015 to 30 September 2016
(per cent)
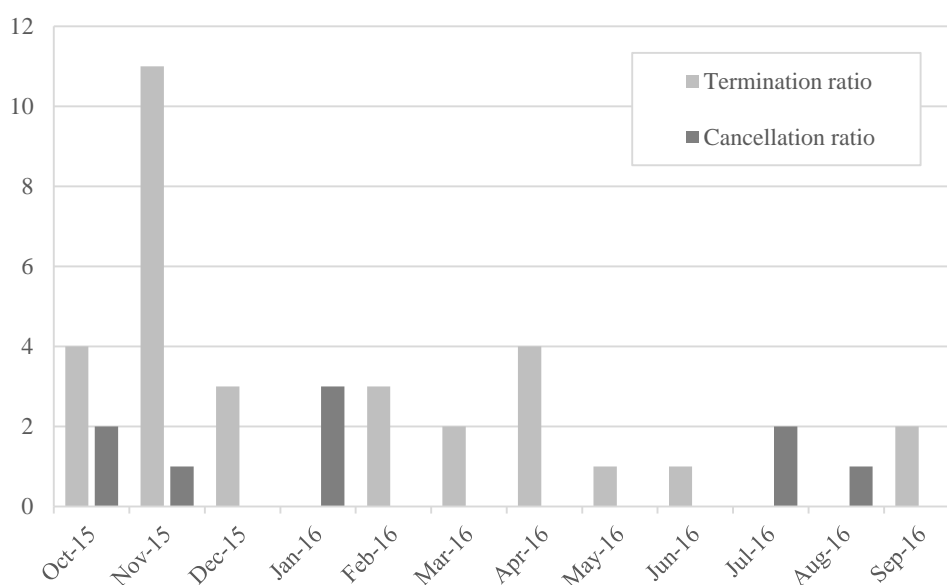
31.   The elevated termination ratio observed in November 2015 resulted from the termination of external transfers by registries that involved first commitment period units and that were proposed after the end of the true-up period.

32.   The reconciliation process ensures that records of Kyoto Protocol unit holdings 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

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[6]   Available at <http://unfccc.int/4065.php>.

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 from 1 October 2015 to 30 September 2016.

Figure 5
Inconsistent reconciliation ratios from 1 October 2015 to 30 September 2016
(per cent)

33.   The unavailability of the ITL prevents registries from performing their transactions. The ITL can be unavailable due to planned maintenance windows, of which RSAs are informed in advance, and unplanned outages caused by operational incidents. The availability of the ITL in the period from 1 October 2015 to 30 September 2016, taking into account unplanned outages, was 99.99 per cent.

34.   The ITL started to receive units applicable to the second commitment period of the Kyoto Protocol in April 2013, when the first issuance of second commitment period CERs was made in the clean development mechanism (CDM) registry. As at 30 September 2016, 254,560,397 second commitment period CERs had been issued for 857 CDM projects.

4.   International transaction log service desk

35.   The ITL service desk is the focal point for all support provided to RSAs in the operation and testing of their registries. The ITL service desk also 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 2015 to 30 September 2016
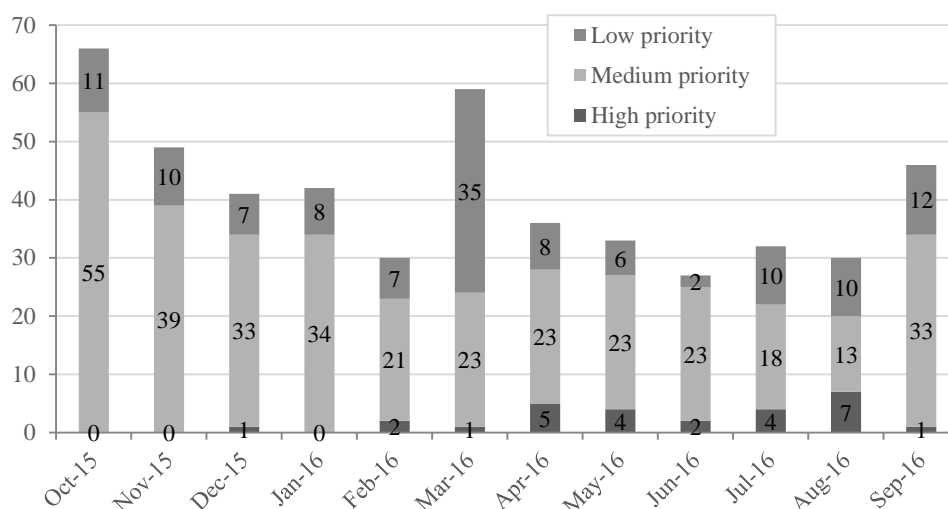
37.   The increased number of medium-priority support requests observed in October and November 2015 were due to preparation activities related to the end of the true-up period. The higher number of low-priority support requests in March 2016 is the result of bulk renewals of digital certificates.

5.   Change management activities

38.   The ITL administrator has established a change management procedure since the go-live of the ITL. The procedure is followed when making changes to the ITL software and to the procedures governing various processes.

39.   In the reporting period, there was one ITL change request submitted, as shown in table 1.

Table 1
Changes submitted for the international transaction log from 1 October 2015 to 30 September 2016

Change title[a]	Date proposed	Status as at 30 September 2016
RSNCM 60 – Updated security incident management procedure	1 December 2015	Approved[b]

[a] The document contains the prefix RSNCM, which refers to registry systems network change management.

[b] Approved on 29 December 2015.

6.   Communications

40.   The ITL administrator continues to facilitate collaboration among RSAs to ensure accurate, efficient and secure operations 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.

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

1. True-up assessment activities

41. During the reporting period, the ITL administrator coordinated the assessment of information reported upon the expiration of the true-up period for the first commitment period of the Kyoto Protocol.

42. A total of 37 Parties submitted to the secretariat a true-up period report.

43. In February 2016, a collaborative and centralized true-up period review process, including a true-up period assessment, was conducted by the secretariat together with RSAs, serving as assessors, and expert review teams. The true-up period assessment approach followed a similar pattern to the established annual SIAR process. The true-up period assessment successfully concluded as a result of comprehensive preparations involving the ITL administrator and RSAs, which had started more than two years before. This process progressed smoothly, which was greatly appreciated by the assessors, expert review teams and the Parties themselves.

2. Annual assessment activities

44. The process of creating the SIARs, mandated by decision 16/CP.10, paragraph 5(a), expands on the initial independent assessment of national registries. The process is to be 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 to be carried out by assessors when reviewing reported changes and accounting information. The final SIARs are forwarded to expert review teams for consideration as part of the review of national registries, in accordance with decision 16/CP.10, paragraph 6(k).

45. In accordance with decision 16/CP.10, paragraph 6(c), the ITL administrator has continued to encourage and promote the engagement of RSAs in the SIAR process, with a view to stimulating the sharing of information on national registry related reporting and review, thus improving the quality of the information on national registries in the annual submissions and optimizing the ITL cost structure.

46. Before the registry assessment by the SIAR assessors, the Party submits an NIR and a SEF report to the secretariat. During the reporting period, 33 Parties submitted their annual NIRs with information on transactions and changes in national registries applicable to the first commitment period of the Kyoto Protocol for 2014. During the reporting period, 36 Parties submitted their annual NIRs and 35 Parties submitted their annual SEF reports with information on transactions and changes in national registries applicable to the second commitment period of the Kyoto Protocol for 2014 and 2015.

47. Based on a request of the SBI,[7] the SIAR assessors reassessed changes in the business continuity plans of the national registries that reported incomplete implementation of the controls contained in these plans.

48. The following issues regarding the assessed registries were identified:

(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 in the national registry.

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[7] FCCC/SBI/2015/10, paragraph 45(c).

49.   Those issues were addressed in the recommendations provided by the assessors in the final SIARs.

3.   Go-live activities

50.   In the reporting period, the ITL administrator provided ongoing support for the go-live of two EU ETS registries. As at 30 September 2016, 36 national registries and the CDM registry were connected to the ITL (see annex I).

E.   Registry System Administrators Forum

51.   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, in accordance with decision 16/CP.10.

52.   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.

53.   The 18th RSA Forum took place in Bonn, Germany, on 29 and 30 September 2016. The key objectives of the meeting were the following:

     (a)   To provide RSAs with an update on actions from the 17th RSA Forum;

     (b)   To provide RSAs with an update on operational status and issues;

     (c)   To inform RSAs about the new versions of the ITL and SEF software and to discuss the work to replace an obsolete web service encoding;

     (d)   To inform RSAs about the finalization of the draft DES and seek their feedback;

     (e)   To inform RSAs about updates to the contact management processes and the RSA extranet and seek their feedback;

     (f)   To provide RSAs with an update on the activities and outcomes of the security working group;

     (g)   To provide RSAs with an update on the finalization of the first commitment period of the Kyoto Protocol;

     (h)   To provide RSAs with feedback on the independent assessment reporting processes conducted during the reporting period;

     (i)   To provide RSAs with an overview of the second commitment period of the Kyoto Protocol and the corresponding testing arrangements, and to seek their feedback on the preparedness of registry systems;

     (j)   To provide RSAs with an update on the online platform for voluntary cancellation of CERs;

     (k)   To provide RSAs with an update on recent developments under the Convention, including ongoing negotiations under Article 6 of the Paris Agreement;

     (l)   To enable Parties to share their experiences in detecting and combating emissions trading fraud.

54. All of the above-mentioned objectives were met, with a number of comments and actions noted during the meeting.

F. Working group on the second commitment period of the Kyoto Protocol

55. The purpose of the working group on the second commitment period of the Kyoto Protocol is to assess the impact of decisions made at CMP 7, 8, 9 and 10 on registry systems and the ITL, and to recommend relevant changes to the DES and common operational procedures. The working group on the second commitment period also considers issues related to the transition from the first to the second commitment period of the Kyoto Protocol, such as the processes related to the true-up period.

56. The working group on the second commitment period successfully concluded its work in October 2015 by issuing recommendations to revise the DES to take into account the true-up period requirements, as well as by issuing final guidance for the true-up period assessment. The secretariat would like to express its gratitude to all RSAs that contributed to the work of this working group and to the successful outcome of the true-up period.

G. Security working group

57. The purpose of the security working group is to further elaborate on options for enhancing information security controls in systems supporting emissions trading under the Kyoto Protocol, as requested by SBI 40.[8]

58. Following consideration at SBI 42 of the document[9] containing the implementation status of information security controls in registry systems and pursuant to the request of SBI 42,[10] the ITL administrator and security working group updated the security incident management procedure by including asset inventory requirements and enhancing the security incident handling process. The updated procedure was consequently approved through the change management process. The security working group further agreed to review this procedure on an annual basis.

59. The security working group will continue to meet biannually to discuss information on security matters related to registry systems.

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[8] FCCC/SBI/2014/8, paragraph 72.
[9] FCCC/SBI/2015/INF.2.
[10] FCCC/SBI/2015/10, paragraph 45.

III. Organizational arrangements and resources

A. Resource requirements and expenditure

60.   The resource requirements for activities relating to the ITL and the ITL administrator, to be funded from supplementary sources for the bienniums 2006–2007,[11] 2008–2009,[12] 2010–2011,[13] 2012–2013,[14] 2014–2015[15] and 2016–2017,[16] were identified in the proposed programme budget for each of those bienniums.

61.   The budget for the ITL for the biennium 2016–2017,[17] not including the deduction of fees paid by Parties, which were not listed in decision 11/CMP.3, annex II, is EUR 5,351,356, including a working capital reserve of EUR 222,316.

62.   The CMP, by decision 11/CMP.3, requested the Executive Secretary to provide a breakdown of the expenditure on the development and operation of the ITL, with a view to optimizing the cost structure. Table 2 shows the expenditure of the ITL in 2016 by object of expenditure.

Table 2
Expenditure of the international transaction log in 2016
(euros)

Object of expenditure	As at 30 September 2016
Staff costs	557 393
Contractual services[a]	682 061
Expert groups	6 793
Travel by staff	0
General operating expenses	1 103
Contributions to common services	98 329
Programme support costs	174 938
Total expenditure	**1 520 617**

[a] The amount for contractual services includes EUR 63,603 obligated for contractual services until the end of 2016 but not spent in the first nine months of 2016.

63.   Table 3 shows the breakdown of expenditure, as expected, on contractors and consultants for the ITL in 2016. Operation services are activities performed by the developer and operator of the ITL to sustain all operations of the ITL, such as infrastructure maintenance and the ITL 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 expenditures are incurred when the secretariat needs to consult experts in specific fields.

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[11] FCCC/SBI/2005/8/Add.2.
[12] FCCC/SBI/2007/8/Add.2.
[13] FCCC/SBI/2009/2/Add.3.
[14] FCCC/SBI/2011/2/Add.3.
[15] FCCC/SBI/2013/6/Add.3.
[16] FCCC/SBI/2015/3/Add.3.
[17] Decision 12/CMP.11.

Table 3

Breakdown of expenditure of the international transaction log on contractors and consultants in 2016

Object of expenditure	Percentage of expenditure on contractors and consultants
Operation services	69
Production and disaster recovery environments	46
Service desk	7
Registry developer support	12
Security and disaster recovery testing	4
Software maintenance services	16
Consultancies	15

64.   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.[18]

65.   In 2016, the focus of the activities of the ITL was on continued efforts to ensure that registry systems operate securely and reliably. In addition, the ITL administrator continued with making arrangements for the completion of the true-up period and for the support of the second commitment period of the Kyoto Protocol by the ITL and registry systems.

66.   The staffing level was in accordance with the requirements included in the ITL budget. The level of staffing is expected to remain unchanged in 2017.

67.   The ITL staff perform the following activities:

        (a)   Initializing and performing go-live events for the national registries not yet connected to the ITL and potential new national registries;

        (b)   Supporting future changes to the DES and releases of ITL and SEF software resulting from operational experience and changes adopted under the common operational procedures for change management;

        (c)   Steering the work related to the implementation of the second commitment period of the Kyoto Protocol;

        (d)   Steering the work of a working group to improve the security of registry systems on the basis of internationally recognized information system security standards;

        (e)   Steering the work of a working group to combat fraud and criminal activities in registry systems;

        (f)   Managing data hosting arrangements and upgrading the hardware and software in the ITL infrastructure, as necessary;

        (g)   Administering and maintaining the RSA extranet;

        (h)   Continuing to support the live operations and test activities of the ITL system and registry systems in all supported environments;

        (i)   Performing an annual disaster recovery test and security audit on the ITL and taking into account the results of that test and audit to enhance the reliability and security of the ITL;

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[18] FCCC/KP/CMP/2008/11, paragraph 72.

(j)   Performing all required activities to support the common operational procedures;

(k)   Continuing to facilitate cooperation among RSAs through the RSA Forum and its working groups and registry developers;

(l)   Offering training material to RSAs on the general functioning of the ITL and registry systems, the common operational procedures and other relevant knowledge areas;

(m)   Continuing to support the obligations of the ITL administrator in accordance with all relevant decisions of the COP and the CMP;

(n)   Monitoring the developments of negotiations under Article 6 of the Paris Agreement in order to determine its potential impact on the ITL in the future.

B.   Income to support the activities of the administrator of the international transaction log

68.   As at 30 September 2016, USD 1,963,788 in ITL user fees had been received from Parties for 2007,[19] 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 2,740,770 for 2015 and EUR 2,582,305 for 2016 with EUR 19,970 outstanding. Two Parties have been credited with advances towards their 2017 ITL fees as a result of overpayment of their 2016 fees. As at 30 September 2016, a total amount of EUR 6,508 in ITL fees had been received for 2017. The secretariat would like to express its gratitude to those Parties that have paid their fees. The scale of ITL fees and the status of fee payments for the biennium 2016–2017 as at 30 September 2016 are shown in annex II. The status of fees as at 30 September 2016 is shown in tables 4 and 5.

Table 4
Fees for international transaction log activities in the period 2007–2009 and cumulative shortfall as at 30 September 2016
(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

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[19]   This figure differs from that 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 5
Fees for international transaction log activities in the period 2010–2016 and cumulative shortfall as at 30 September 2016
(euros)

	2010[a]	*2011*	*2012*	*2013*	*2014*[b]	*2015*[b]	*2016*[b]
Fees budgeted	3 014 423	3 014 423	2 885 010	2 885 010	2 740 760	2 740 760	2 675 679
Fees received	3 014 423	3 014 423	2 885 010	2 759 483	2 740 760	2 740 760	2 582 305
Shortfall	0	0	0	125 527	0	0	93 374[c]
Cumulative shortfall	374 812	374 812	374 812	500 339	374 812	374 812	468 186

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

[b] 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 international transaction log.

[c] The shortfall includes an amount of EUR 73,404 resulting from the disconnection of a Party from the international transaction log, in accordance with decision 8/CMP.11. This amount will be drawn from unspent balances (carry-over) of the Trust Fund for the International Transaction Log from previous financial periods, in accordance with decision 8/CMP.11, paragraph 9.

69.   Delays in receiving user fees from Parties have been noted in previous annual reports of the ITL administrator. As at 30 September 2016, EUR 19,970 was still due for 2016 (0.75 per cent of the fees budgeted for 2016). Figure 7 shows the user fees received for 2016 in 2015 and 2016 as at 30 September 2016 and the cumulative percentage of resource requirements, by month.

Figure 7
International transaction log user fees for 2016 received in 2015 and 2016 as at 30 September 2016
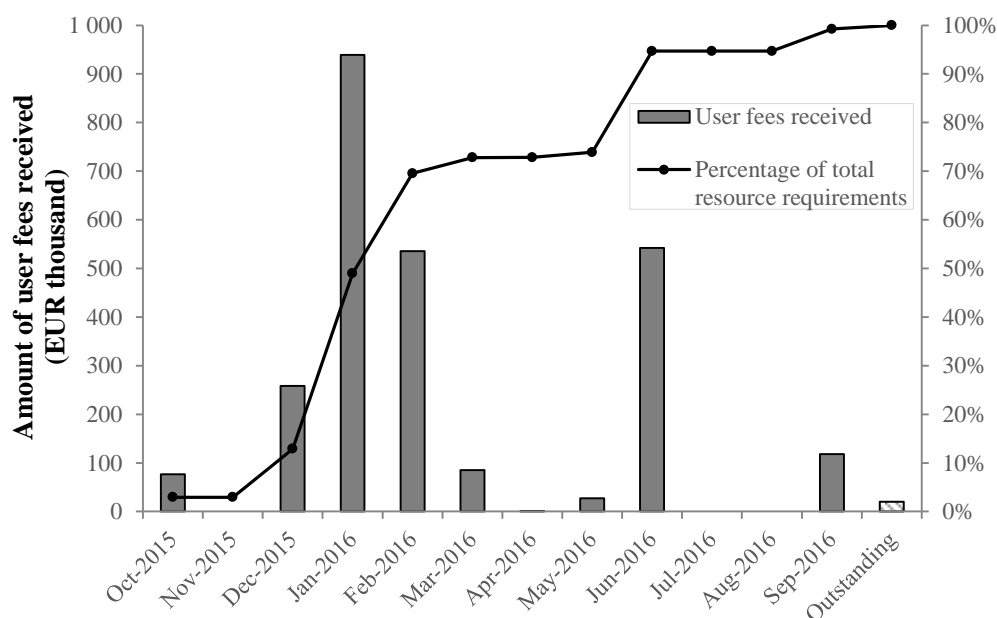
C. Actions and proposals to optimize the cost structure of the international transaction log

70.   The ITL administrator is continuing to seek ways to further optimize the ITL cost structure and is currently considering the following measures:

(a)   Optimizing data hosting, technology refresh, and licence and third-party support costs of the software and hardware used to run the ITL, including through a competitive procurement process;

(b)   Systematizing, documenting and addressing typical incident, user error and user problem scenarios, while providing proactive guidance to registry systems, in order to minimize their reoccurrence and associated remedial costs;

(c)   Simplifying registry testing arrangements and registry contact management, with the goal of optimizing the costs associated with those activities;

(d)   Using secretariat staff instead of consultants, where possible.

Annex I

Registry status as at 30 September 2016

Registry	Date independent assessment report was issued	Date of live connection to the international transaction log
Australia	19 December 2008	19 December 2008
Austria	12 July 2007	16 October 2008
Belgium	7 December 2007	16 October 2008
Bulgaria	10 April 2008	16 October 2008
Croatia	30 April 2008	11 December 2009
Clean development mechanism	Not applicable	14 November 2007
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
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
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[a]	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

[a] The Party disconnected from the international transaction log 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 2016–2017 as at 30 September 2016

Party	Scale of fees[a]	2016			2017		
		Budgeted[b]	Received	Outstanding	Budgeted[b]	Received	Outstanding
Australia	2.841	76 005	76 005	0	76 005	0	76 005
Austria	1.588	42 492	42 492	0	42 492	0	42 492
Belgium	1.973	52 787	52 787	0	52 787	0	52 787
Bulgaria	0.036	951	951	0	951	0	951
Croatia	0.079	2 126	2 126	0	2 126	0	2 126
Czechia	0.503	13 455	13 455	0	13 455	0	13 455
Denmark	1.323	35 387	35 387	0	35 387	0	35 387
Estonia	0.028	755	755	0	755	0	755
European Commission	2.685	71 837	71 837	0	71 837	0	71 837
Finland	1.009	26 995	26 995	0	26 995	0	26 995
France	10.667	285 418	285 418	0	285 418	0	285 418
Germany	15.350	410 714	410 714	0	410 713	0	410 713
Greece	1.065	28 505	28 505	0	28 505	6 506	21 999
Hungary	0.437	11 693	11 693	0	11 693	0	11 693
Iceland	0.737	19 722	19 697	25	19 722	0	19 722
Ireland	0.797	21 316	21 316	0	21 316	0	21 316
Italy	9.089	243 206	243 206	0	243 205	0	243 205
Japan	14.939	399 720	399 720	0	399 719	0	399 719
Latvia	0.032	867	867	0	867	0	867
Liechtenstein	0.188	5 035	5 035	0	5 035	0	5 035
Lithuania	0.055	1 483	1 483	0	1 483	0	1 483
Luxembourg	0.153	4 084	4 084	0	4 084	0	4 084
Monaco	0.181	4 839	4 839	0	4 839	0	4 839
Netherlands	3.352	89 684	89 684	0	89 684	0	89 684
New Zealand	0.961	25 708	25 708	0	25 708	2	25 706
Norway	2.319	62 046	62 046	0	62 046	0	62 046
Poland	0.896	23 974	23 974	0	23 974	0	23 974
Portugal	0.943	25 233	25 233	0	25 232	0	25 232
Romania	0.125	3 357	3 357	0	3 357	0	3 357
Russian Federation[c]	2.743	73 404	0	0	73 404	0	0
Slovakia	0.113	3 021	3 021	0	3 021	0	3 021
Slovenia	0.171	4 588	4 588	0	4 588	0	4 588
Spain	5.311	142 108	142 108	0	142 108	0	142 108
Sweden	1.917	51 304	51 304	0	51 304	0	51 304
Switzerland	2.760	73 851	73 851	0	73 851	0	73 851
Ukraine	0.745	19 945	0	19 945	19 945	0	19 945
United Kingdom	11.887	318 064	318 064	0	318 064	0	318 064
Total	**100.000**	**2 675 679**	**2 582 305**	**19 970**	**2 675 675**	**6 508**	**2 595 763**

[a] For presentation purposes all percentages are shown with three decimal places only.
[b] Minor adjustments on actual values are due to rounding.
[c] The Party disconnected from the international transaction log on 30 December 2015, in accordance with decision 8/CMP.11.

Annex III

Number of transactions proposed to the international transaction log from 1 October 2015 to 30 September 2016

Registry	Acquisition[a]	Transfer[b]	Forwarding[c]	Internal transfer[d]	Issuance[e]	Retirement[f]	Cancellation[g]	Total
Australia	167	29	0	0	0	1	39	236
Austria	6	7	0	2	0	2	6	23
Belgium	9	9	0	6	0	4	13	41
Bulgaria	16	1	0	0	0	2	3	22
Clean development mechanism	0	41	924	0	560	0	961	2 486
Croatia	1	1	0	0	0	1	0	3
Czechia	2	1	0	0	0	5	0	8
Denmark	4	13	0	0	0	9	8	34
Estonia	4	1	0	0	0	1	0	6
European Union	407	441	0	0	0	0	268	1 116
Finland	31	15	0	0	0	3	6	55
France	32	11	0	1	0	11	39	94
Germany	161	143	0	0	0	10	334	648
Greece	3	1	0	0	0	1	2	7
Hungary	11	1	0	0	1	5	1	19
Iceland	3	1	0	0	0	48	0	52
Ireland	4	4	0	1	0	3	1	13
Italy	63	6	0	2	0	12	3	86
Japan	1	0	0	0	0	97	7	105
Latvia	1	1	0	0	0	5	0	7
Liechtenstein	3	0	0	0	0	6	0	9
Lithuania	6	16	0	0	0	1	0	23
Luxembourg	1	3	0	0	0	141	1	146
Monaco	0	0	0	0	0	0	0	0
Netherlands	37	296	0	0	0	77	88	498
New Zealand	157	26	0	0	0	137	128	448
Norway	30	2	0	6	0	6	20	64
Poland	2	2	0	3	0	5	4	16
Portugal	2	14	0	2	0	4	3	25
Romania	13	1	0	0	0	1	58	73
Russian Federation[h]	0	0	0	0	2	1	1	4
Slovakia	1	1	0	0	0	4	1	7
Slovenia	1	1	0	0	0	3	2	7
Spain	56	26	0	22	0	9	15	128
Sweden	16	48	0	22	0	2	88	176
Switzerland	77	114	0	33	0	11	140	375
Ukraine	0	0	0	0	0	0	0	0
United Kingdom	142	234	0	1	0	1	92	470
Total	**1 470**	**1 511**	**924**	**101**	**563**	**629**	**2 332**	**7 530**

Note: Completed transactions of assigned amount units, emission reduction units, removal units, certified emission reductions, long-term certified emission reductions and temporary certified emission reductions have been accounted for.

[a] Acquisition from another national registry. See decision 13/CMP.1, annex, paragraph 30.

[b] Transfer to another national registry. See decision 13/CMP.1, annex, paragraph 30.

[c] Forwarding from the clean development mechanism registry to a national registry. See decision 3/CMP.1, annex, paragraph 66(b). Transfers from the clean development mechanism registry to a national registry in support of the Adaptation Fund are excluded.

[d] Transfer within the registry. See decision 13/CMP.1, annex, paragraph 30.

[e] See decision 13/CMP.1, annex, paragraphs 23–29; decision 3/CMP.1, annex, paragraphs 64–66; and decision 5/CMP.1, annex, paragraphs 36 and 37. Issuance of emission reduction units by converting assigned amount units or removal units is included.

[f] See decision 13/CMP.1, annex, paragraph 34.

[g] See decision 13/CMP.1, annex, paragraph 33.

[h] The Party disconnected from the international transaction log on 30 December 2015, in accordance with decision 8/CMP.11.

Annex IV

Number of Kyoto Protocol units subject to transactions proposed to the international transaction log from 1 October 2015 to 30 September 2016

Registry	Acquisition[a]	Transfer[b]	Net transfer[c]	Forwarding[d]	Internal transfer[e]	Issuance[f]	Retirement[g]	Cancellation[h]
Australia	30 490 062	3 322 142	−27 167 920	0	0	0	2 711 153 478	2 212 301
Austria	3 557 628	3 917 210	359 582	0	2 990	0	52 223 071	115 103
Belgium	15 510 128	13 827 620	−1 682 508	0	14 873 673	0	385 329 044	453 192
Bulgaria	2 130 258	1 449 938	−680 320	0	0	0	189 035 740	565 157
Clean development mechanism	0	1 488 784	1 488 784	57 448 859	0	105 331 578	0	9 997 753
Croatia	706 416	706 416	0	0	0	0	144 820 156	0
Czechia	8 166 356	8 144 627	−21 729	0	0	0	306 889 284	0
Denmark	9 311 103	9 341 883	30 780	0	0	0	161 616 065	3 483 316
Estonia	4 327 080	4 311 906	−15 174	0	0	0	42 061 428	0
European Union	421 854 168	418 698 682	−3 155 486	0	0	0	0	2 371 797
Finland	14 193 960	3 690 056	−10 503 904	0	0	0	191 607 422	66 674
France	11 316 487	12 675 570	1 359 083	0	4 640	0	1 980 026 713	974 038
Germany	127 119 733	136 582 072	9 462 339	0	0	0	2 363 358 620	3 539 745
Greece	7 471 953	7 470 104	−1 849	0	0	0	284 757 060	347
Hungary	2 917 350	2 906 622	−10 728	0	0	1 229 593	240 727 987	182 829
Iceland	102 346	102 346	0	0	0	0	20 098 931	0
Ireland	4 255 982	4 258 066	2 084	0	3 052 416	0	220 882 502	7 893
Italy	69 524 347	46 846 793	−22 677 554	0	7 389 165	0	1 513 742 620	99 200
Japan	250 000	0	−250 000	0	0	0	6 089 758 432	947 899
Latvia	103 456	103 456	0	0	0	0	45 057 551	0
Liechtenstein	5 732	0	−5 732	0	0	0	1 175 109	0
Lithuania	1 021 945	1 049 639	27 694	0	0	0	80 176 952	0
Luxembourg	498 698	597 202	98 504	0	0	0	49 541 133	62 959
Monaco	0	0	0	0	0	0	0	0
Netherlands	19 870 177	52 388 696	32 518 519	0	0	0	192 384 628	2 764 135
New Zealand	20 557 096	13 894 764	−6 662 332	0	0	0	372 797 622	794 127
Norway	15 509 313	9 880	−15 499 433	0	3 154 993	0	184 891 949	33 028 981
Poland	15 816 767	39 203 067	23 386 300	0	728	0	1 411 273 897	4 627
Portugal	2 260 751	6 107 302	3 846 551	0	4 402 252	0	229 515 167	4 520
Romania	7 742 951	7 257 533	−485 418	0	0	0	404 468 375	70 401

Registry	Acquisition[a]	Transfer[b]	Net transfer[c]	Forwarding[d]	Internal transfer[e]	Issuance[f]	Retirement[g]	Cancellation[h]
Russian Federation[i]	0	0	0	0	0	12 891 203	11 187 543 419	12 891 203
Slovakia	6 750 416	6 750 416	0	0	0	0	115 909 371	150
Slovenia	225 635	225 635	0	0	0	0	57 879 402	24
Spain	62 294 520	62 013 364	–281 156	0	2 121	0	1 237 364 486	122 400
Sweden	3 314 474	6 084 901	2 770 427	0	578 755	0	225 113 637	66 102 561
Switzerland	8 351 744	12 621 066	4 269 322	0	282 817	0	261 721 728	13 312 388
Ukraine	0	0	0	0	0	0	0	0
United Kingdom	45 883 729	56 853 787	10 970 058	0	10 636	0	14 425 995	2 931 917
Total	**943 412 761**	**944 901 545**	**1 488 784**	**57 448 859**	**33 755 186**	**119 452 374**	**32 969 328 974**	**157 107 637**

Note: Completed transactions of assigned amount units, emission reduction units, removal units, certified emission reductions, long-term certified emission reductions and temporary certified emission reductions have been accounted for.

[a] Acquisition from another national registry. See decision 13/CMP.1, annex, paragraph 30.

[b] Transfer to another national registry. See decision 13/CMP.1, annex, paragraph 30.

[c] Net transfer is equal to transfer minus acquisition.

[d] Forwarding from the clean development mechanism registry to a national registry. See decision 3/CMP.1, annex, paragraph 66(b). Transfers from the clean development mechanism registry to a national registry in support of the Adaptation Fund are excluded.

[e] Transfer within the registry. See decision 13/CMP.1, annex, paragraph 30.

[f] See decision 13/CMP.1, annex, paragraphs 23–29; decision 3/CMP.1, annex, paragraphs 64–66; and decision 5/CMP.1, annex, paragraphs 36 and 37. Issuance of emission reduction units by converting assigned amount units or removal units is included.

[g] See decision 13/CMP.1, annex, paragraph 34.

[h] See decision 13/CMP.1, annex, paragraph 33.

[i] The Party disconnected from the international transaction log on 30 December 2015, in accordance with decision 8/CMP.11.