



United Nations

FCCC/SBI/2017/INF.11



Framework Convention on
Climate Change

Distr.: General
20 October 2017

English only

Subsidiary Body for Implementation

Forty-seventh session

Bonn, 6–15 November 2017

Item 8(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 thirteenth 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 2016 to 30 September 2017. This report also contains information on transactions of Kyoto Protocol units, including on carried-over units, as requested at CMP 6, and information on the outcomes of the 19th Registry System Administrators Forum, which took place on 28 and 29 September 2017 in Berlin, 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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Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Introduction	1–7	3
A. Mandate	1–3	3
B. Scope of the note	4–5	3
C. Possible action by the Subsidiary Body for Implementation	6–7	3
II. Work undertaken since the publication of the twelfth annual report of the administrator of the international transaction log under the Kyoto Protocol.....	8–70	3
A. Summary of work undertaken.....	8–12	3
B. Implementation activities.....	13–25	4
C. Operational activities	26–47	5
D. Independent assessment of national and go-live activities.....	48–55	10
E. Registry System Administrators Forum.....	56–68	11
F. Other activities.....	69–70	12
III. Organizational arrangements and resources	71–82	12
A. Resource requirements and expenditure	72–79	12
B. Income to support the activities of the administrator of the international transaction log.....	80–81	14
C. Actions and proposals to optimize the cost structure of the international transaction log.....	82	16
Annexes		
I. Registry status as at 30 September 2017		17
II. Scale of international transaction log fees and status of fee payments for the biennium 2016–2017 as at 30 September 2017.....		19
III. Number of transactions proposed to the international transaction log from 1 October 2016 to 30 September 2017		20
IV. Number of Kyoto Protocol units subject to transactions proposed to the international transaction log from 1 October 2016 to 30 September 2017.....		22

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, annex, 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 thirteenth 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, including carried-over units.
5. The reporting period covered is 1 October 2016 to 30 September 2017.

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.
7. The SBI may also wish to note that the data exchange standards with support for the second commitment period processes cannot be finalized at this stage, owing to divergent views regarding the implementation of the carry-over process for Parties included in Annex I without quantified emission limitation and reduction commitments for the second commitment period.

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

A. Summary of work undertaken

8. The ITL administrator has continued to convene the RSA Forum and to coordinate the work of its working groups.
9. The activities related to the ninth 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

containing information on transactions and changes in national registries applicable to the second commitment period of the Kyoto Protocol for 2016.

10. The initial assessments of two national registries were conducted, with the assessment recommendations expected to be implemented by the end of 2017.

11. A true-up period¹ assessment of one national registry was conducted on an exceptional basis following a request by the CMP.²

12. 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

13. During the reporting period, a new version of the ITL software, which includes fixes for minor issues raised during the latest security and penetration tests of the ITL, was developed. The new version of the ITL software will be released in October 2017.

2. Standard electronic format reporting application releases

14. In accordance with decision 15/CMP.1, annex, paragraph 11, Parties included in Annex I shall report, in a 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.

15. 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. 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.³

16. During the reporting period, the ITL administrator prepared and released a new version of the SEF reporting application containing minor bug fixes. That version of the application was used in the SIAR reporting and assessment processes in 2017.

3. International transaction log operational documentation

17. The operational guidance for the management of registry contacts has been updated to reflect changes to the management of personal identification numbers proposed during the 18th RSA Forum.

4. International transaction log technology maintenance

18. During the reporting period, a migration of the certificate infrastructure for the issuance of client digital certificates was implemented to ensure continued registry connectivity.

19. The ITL network connectivity was upgraded to support a new network encryption protocol (Transport Layer Security) whilst maintaining backwards compatibility with its predecessor (Secure Sockets Layer).

20. Regular firmware and software updates were carried out on the infrastructure and software components of the ITL system, including application server and database systems, to keep them to the latest security patch level.

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/KP/CMP/2016/8, paragraph 50.

³ FCCC/SBI/2015/INF.12, paragraph 13.

5. Data centre hosting procurement process

21. In support of the activity included in the budget for the ITL for the biennium 2016–2017,⁴ the secretariat is finalizing an international competitive procurement process for the data centre hosting of the ITL infrastructure, which includes contracting new vendors. Following the completion of this procurement process, migration of the ITL service, including application, hardware and network infrastructure and systems support, will take place with a view to completing the migration during 2018.

6. Cyber security audit

22. The ITL administrator continues to ensure secure ITL operations by, among other measures, conducting annual cyber security audits to determine and evaluate potential security weaknesses in the system. These security audits have historically been conducted by the operator of the ITL.

23. As part of its ongoing focus on cyber security, the secretariat has recently completed a competitive procurement process to select external vendors under the cyber security framework agreement.

24. Following the recommendation of internal auditors to have the security audit done by a third party other than the operator of the ITL, one of the cyber security framework vendors conducted the security audit and vulnerability test of the ITL in 2017. No major issues were found in the test. The identified recommendations were scheduled for implementation, with a view to enhancing the reliability and security of the ITL and registry systems.

7. Information technology service management

25. The ITL administrator is supporting arrangements to enhance the information technology service management to optimize further the ITL service and the outcomes of the data centre hosting described in paragraph 21 above. In this context, the secretariat is currently exploring options to consolidate and optimize activities related to the ITL service desk, software development and application support.

C. Operational activities

1. Support for registry testing

26. During the reporting period, the ITL administrator supported the functional testing for the second commitment period of the Kyoto Protocol for three national registries.⁵

2. International transaction log disaster recovery testing

27. The annual disaster recovery testing of the ITL was executed in July 2017 in collaboration with the European Union Emissions Trading System (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 93 minutes, where the recovery time objective for such a situation is 180 minutes. The time to failover was well within the objective and comparable with the testing in the previous year. A number of new findings were made and incorporated into the disaster recovery plan to be tested in 2018.

3. Transaction data and analysis

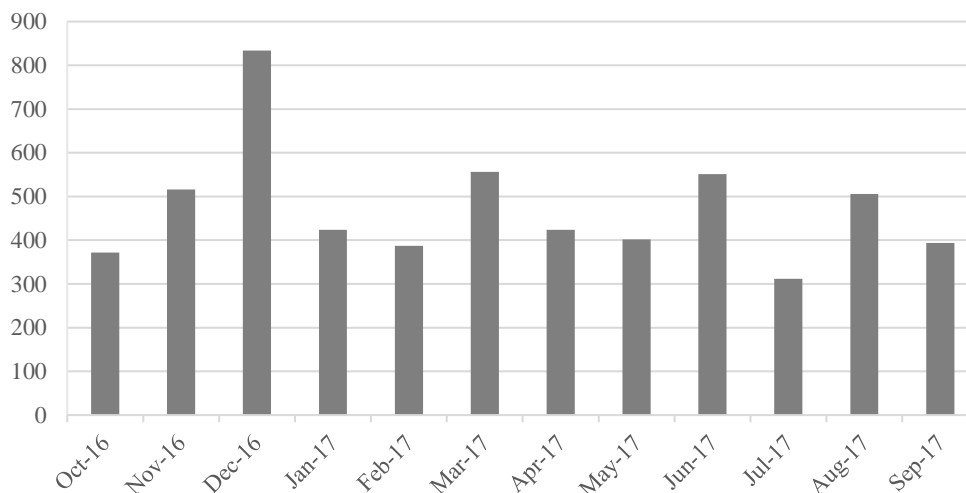
28. The volume of activity in the ITL can be measured with various transactional and operational metrics. Figure 1 shows the number of transactions proposed to the ITL in the

⁴ FCCC/SBI/2015/3/Add.3, paragraph 11.

⁵ 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.

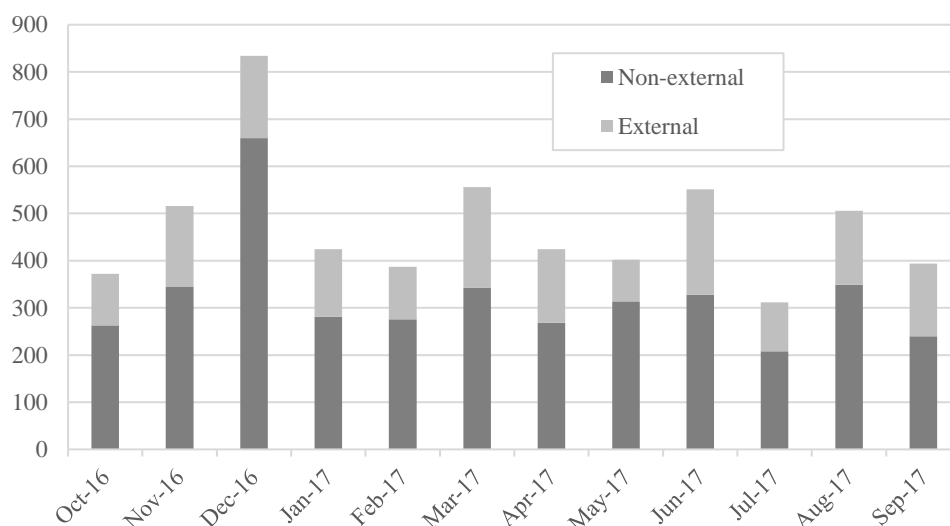
production environment⁶ each month during the reporting period. Furthermore, the breakdown by registry of the number of transactions and the number of Kyoto Protocol units subject to transactions proposed to the ITL from 1 October 2016 to 30 September 2017 are shown in annexes III and IV, respectively.

Figure 1
Number of transactions proposed to the international transaction log from 1 October 2016 to 30 September 2017



29. There are two types of transactions 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 shows the evolution of the breakdown of external and non-external transactions in the ITL from 1 October 2016 to 30 September 2017.

Figure 2
Number of external compared with non-external transactions from 1 October 2016 to 30 September 2017



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

31. The transaction completion time includes the latency incurred by the travel time of messages through the registry network and the processing time within the registries, ITL

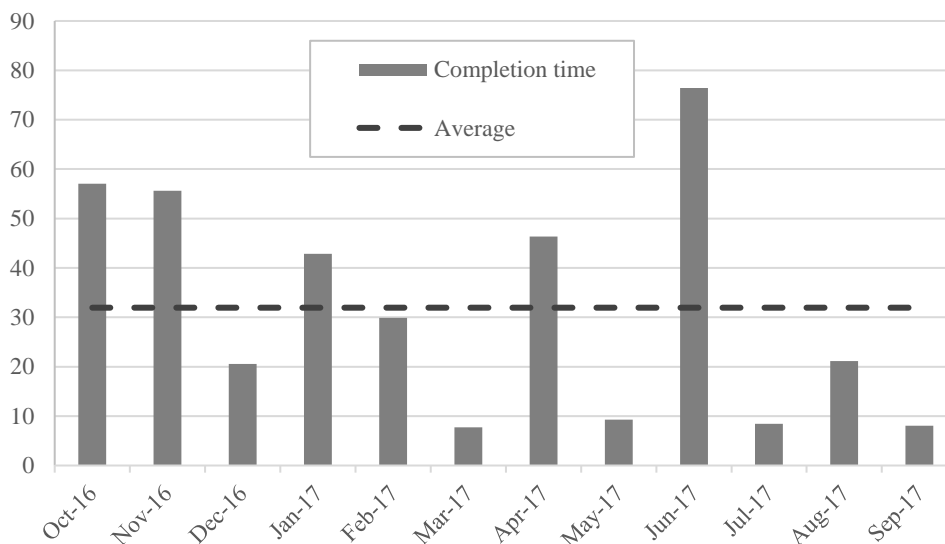
⁶ The live system of the ITL used to support emissions trading under the Kyoto Protocol.

and 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 2016 to 30 September 2017 are shown in figure 3.

Figure 3

Monthly averages of transaction completion time from 1 October 2016 to 30 September 2017

(seconds)

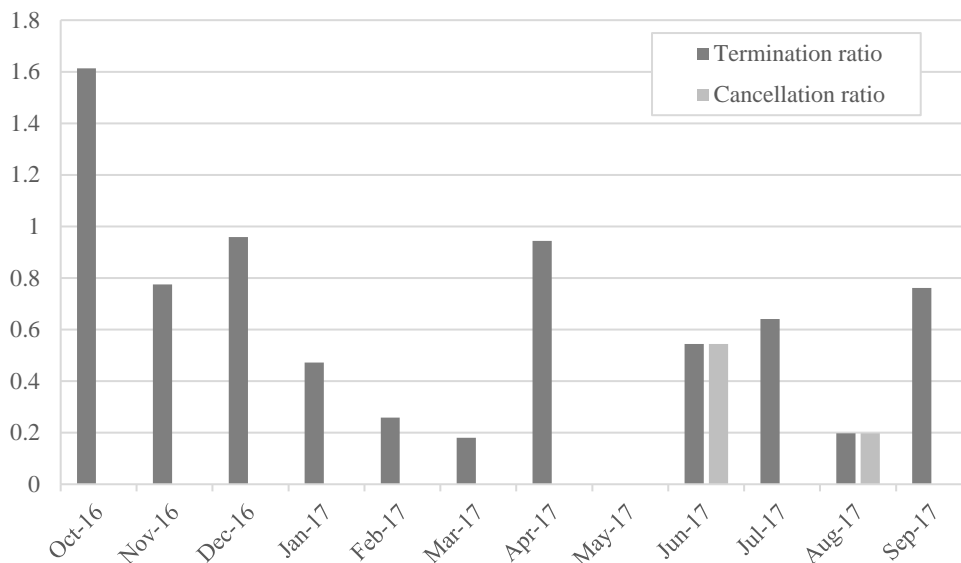


32. Transactions that are not compliant with the data exchange standards are terminated by the ITL. The transaction termination ratio is obtained by dividing the number of terminated transactions by the number of transactions proposed in a given time frame. This ratio is an indicator of the level of internal checking performed by registries to ensure the proposed transaction is accurate. The evolution of the ratio from 1 October 2016 to 30 September 2017 is shown in figure 4.

33. 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 is an indicator of the extent of communication problems in registry systems. Figure 4 provides the transaction cancellation ratios from 1 October 2016 to 30 September 2017.

Figure 4
Transaction cancellation and termination ratios from 1 October 2016 to 30 September 2017

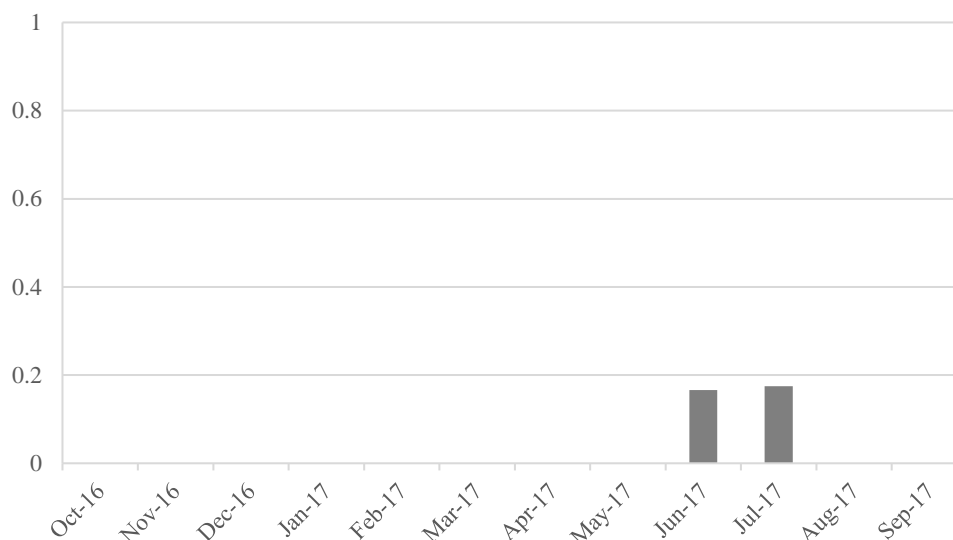
(per cent)



34. 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 from 1 October 2016 to 30 September 2017.

Figure 5
Inconsistent reconciliation ratios from 1 October 2016 to 30 September 2017

(per cent)



35. The ITL facilitates communications between registries while 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 2016 to 30 September 2017, taking into account unplanned outages, was 99.99 per cent.

36. The ITL started to receive units applicable to the second commitment period of the Kyoto Protocol in April 2013, when the first issuance of CERs from the second commitment period was made in the clean development mechanism (CDM) registry. As at 30 September 2017, a total of 396,680,779 CERs from the second commitment period had been issued for 1,085 CDM projects.

4. Status of carry-over

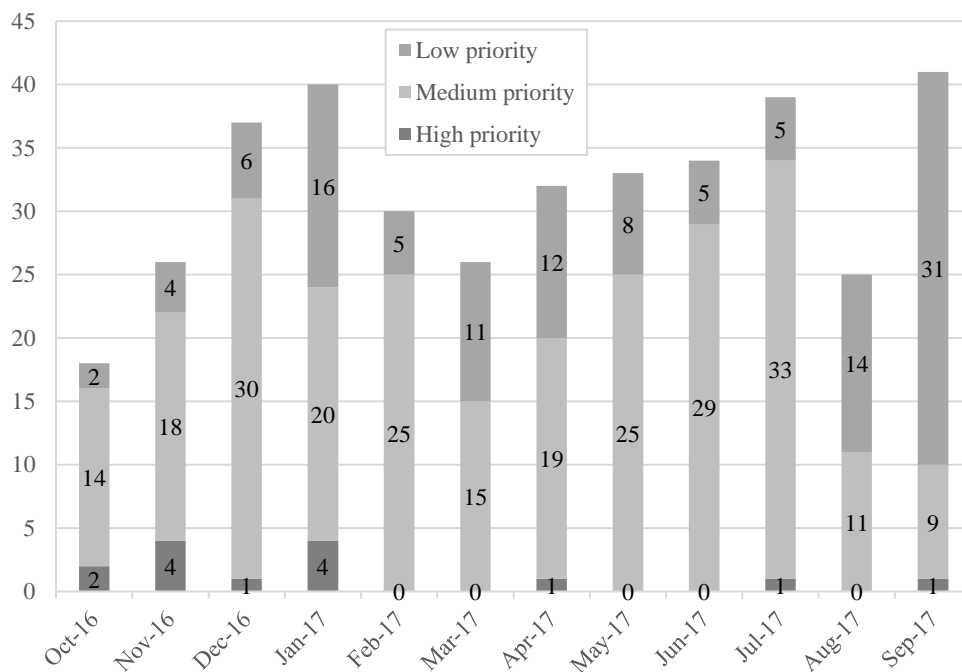
37. Following completion of the true-up period, 14 Parties carried over units issued for the first commitment period to the second commitment period of the Kyoto Protocol. A total of 102,524,458 CERs, 60,124,004 emission reduction units and 5,794,523 assigned amount units were carried over.

5. International transaction log service desk

38. 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).

39. 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 2016 to 30 September 2017



6. Change management activities

40. 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.

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

Table 1
Changes submitted for the international transaction log from 1 October 2016 to 30 September 2017

<i>Change title^a</i>	<i>Date proposed</i>	<i>Status as at 30 September 2017</i>
RSNCM 61 – Simplification for European common registry and international transaction log communication (single subject-alternative-name certificate)	9 August 2017	Approved ^b

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

^b Approved on 8 September 2017.

42. During the reporting period, the ITL administrator continued to maintain and keep the data exchange standards up to date, in collaboration with registry administrators. One ad hoc meeting was organized to communicate and coordinate changes to the latest draft of the updated data exchange standards, including clarifications on voluntary cancellations after the carry-over process and clarifications on the validations contained in its annex E. Further work was also prepared with regard to the communications standard used in registry systems (web services encoding).

43. It was not possible to issue a final version of the data exchange standards with complete support for the second commitment period processes, as Parties expressed different views with regard to the carry-over process for Parties included in Annex I without quantified emission limitation and reduction commitments for the second commitment period.

7. Communication

44. 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.

45. In November 2016, the ITL administrator launched a new version of the RSA extranet, with a view to improving the structure, navigation and search function of the previous collaboration platform and to enhance the availability of the website by moving it to the externally managed collaboration environment. The new extranet also incorporated the changes proposed by RSAs and other users.

46. The ITL administrator is planning to complement the RSA extranet with relevant introductory and training material to facilitate onboarding of any new registry system administrators. This activity is planned to be completed by the end of 2017.

47. In August 2017, the ITL administrator conducted a survey to assess the level of satisfaction of registry teams with the ITL. The survey questions were focused on substantive, process, technical and communications aspects of the services provided by the ITL administrator. The survey results were very positive and were discussed at the 19th RSA Forum.

D. Independent assessment of national and go-live activities

1. True-up assessment activities

48. During the reporting period, the assessment of information reported upon the expiration of the true-up period for the first commitment period of the Kyoto Protocol was finished.

49. In June 2017, an exceptional true-up period assessment of one national registry was conducted by the ITL administrator, together with RSAs serving as assessors. The true-up period assessment approach followed a similar pattern to the established annual SIAR process.

2. Annual assessment activities

50. 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).

51. 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.

52. Before the 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 annual NIRs and 36 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 2016.

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

(a) Some Parties did not fully comply with the requirements 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.

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

3. Go-live activities

55. In the reporting period, the ITL administrator provided ongoing support for the go-live of two national registries. As at 30 September 2017, 38 national registries and the CDM registry were connected to the ITL (see annex I).

E. Registry System Administrators Forum

56. 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.

57. 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.

58. The 19th RSA Forum took place in Berlin, Germany, on 28 and 29 September 2017. The key objectives of the meeting were the following:

- (a) To provide RSAs with an update on actions from the previous RSA Forum;
- (b) To provide RSAs with an update on operational status and issues;
- (c) To provide RSAs with feedback on the independent assessment reporting processes conducted during the reporting period;
- (d) To facilitate cooperation and information-sharing among administrators of registry systems.

59. All of the above-mentioned objectives were met, with a number of comments and actions noted during the meeting which will be taken into account in the next reporting period.

60. The presentation on the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) by the International Civil Aviation Organization (ICAO) secretariat was appreciated by all participants, who also commended the collaboration efforts between the ICAO and the UNFCCC secretariats on the matter of registries.

61. The presentation on the blockchain technology was also appreciated. Following this presentation and the various requests from Parties and other stakeholders, a project to investigate the use of the blockchain technology for emissions trading was proposed. This proposal was supported by the participants to the forum.

1. Web services encoding working group

62. The purpose of the web services encoding working group is to update the outdated ways registries and the ITL communicate to a newer standard. This work is required because the current paradigm is no longer supported by development tools, which causes concern with regard to the long-term maintainability and security of the registry system communication infrastructure.

63. The web services encoding group met five times during the reporting period and issued a recommendation for implementation by registry systems and the ITL which will ensure that these systems can communicate reliably and safely until the end of the second commitment period.

64. The working group met a last time at the outset of the 19th RSA Forum to consider the impact of the potential implementation of a new web services encoding on registry systems and decided that given the significant expected impacts, including financial ones, and the continued possibility to support the previous web services encoding for the next three to five years, the work on this matter should be indefinitely postponed.

65. As a result, the ITL administrator will close the web services encoding working group and archive the outcome of its work until such time when this outcome may be required.

2. Security working group

66. The purpose of the security working group is to elaborate further on options for enhancing information security controls in systems supporting emissions trading under the Kyoto Protocol, as requested by SBI 40.⁷

67. The security working group met once during the reporting period to discuss social engineering threats and to review the security incident management procedure.

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

F. Other activities

69. In the context of the collaboration between the UNFCCC and the ICAO secretariats, the ITL administrator contributed to the registry-related work under CORSIA. The ITL administrator noted that it would be highly beneficial for national registries, CORSIA operators and States if this collaboration was continued and further strengthened, through combined workshops and working groups for example. The ICAO secretariat expressed appreciation for the contribution of the ITL team in defining the different approaches and implementation options for the ICAO registry and recognized the ITL team's expertise in this area.

70. The ITL administrator monitored and supported the negotiations under Article 6 of the Paris Agreement for any potential future impacts on the ITL.

III. Organizational arrangements and resources

71. 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.

A. Resource requirements and expenditure

72. The resource requirements for activities relating to the ITL and the ITL administrator, funded from supplementary sources for the bienniums 2006–2007,⁸ 2008–2009,⁹ 2010–2011,¹⁰ 2012–2013,¹¹ 2014–2015¹² and 2016–2017,¹³ were identified in the proposed programme budget for each of those bienniums.

⁷ FCCC/SBI/2014/8, paragraph 72.

⁸ FCCC/SBI/2005/8/Add.2.

⁹ FCCC/SBI/2007/8/Add.2.

¹⁰ FCCC/SBI/2009/2/Add.3.

¹¹ FCCC/SBI/2011/2/Add.3.

¹² FCCC/SBI/2013/6/Add.3.

¹³ FCCC/SBI/2015/3/Add.3.

73. The budget for the ITL for the biennium 2016–2017¹⁴ is EUR 5,351,356, including a working capital reserve of EUR 222,316.

74. 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 the biennium 2016–2017 by object of expenditure.

Table 2

Expenditure of the international transaction log in the biennium 2016–2017

(euros)

<i>Object of expenditure</i>	<i>As at 30 September 2016</i>	<i>As at 30 September 2017</i>
Staff costs	557 393	1 294 449
Contractual and consultancy services ^a	682 061	2 024 769
Expert groups	6 793	6 766 ^b
Travel by staff	0	32 136
General operating expenses	1 103	3 853
Contributions to common services	98 329	231 505
Programme support costs	174 938	373 996
Total expenditure	1 520 617	3 967 474

^a The amount for contractual services included EUR 90,551 obligated for contractual services until the end of September 2017 but not spent in the first nine months of 2017.

^b A minor adjustment was made after 30 September 2016.

75. Table 3 shows the breakdown of expenditure, as expected, on contractors and consultants for the ITL in the biennium 2016–2017. 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 services expenditures are incurred when the secretariat needs to consult experts in specific fields.

Table 3

Breakdown of expenditure of the international transaction log on contractors and consultants in the biennium 2016–2017

<i>Object of expenditure</i>	<i>Percentage of expenditure</i>
Operation services	79
Production and disaster recovery environments	56
Service desk	9
Registry developer support	9
Security and disaster recovery testing	5
Software maintenance services	11
Consultancy services	10

76. CMP 4 requested the ITL administrator to report on planned activities and the related resource requirements, with a view to ensuring adequate means are available to perform those activities.¹⁵

77. In 2017, the focus of the activities of the ITL was on continued efforts to ensure registry systems operate securely and reliably.

78. 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. The part-time post

¹⁴ Decision 12/CMP.11.

¹⁵ FCCC/KP/CMP/2008/11, paragraph 72.

(50 per cent) of the Administrative Assistant became vacant as of 1 January 2017. The vacant part-time position will be filled in line with the staff selection policy in due course.

79. The ITL staff perform the following activities:

- (a) Providing technical services through the ITL to enable national registries and the CDM registry to perform transactions of Kyoto Protocol units;
- (b) Ensuring secure and reliable hosting for the ITL and performing upgrades to the hardware and software of the ITL infrastructure, as necessary;
- (c) Providing support to national registries, the Consolidated System of European Union Registries, including the EUTL, the CDM registry, the joint implementation and CDM information systems and the compilation and accounting database, to maintain their connections and operations with the ITL;
- (d) Initializing, performing and supporting go-live events for registries not yet connected;
- (e) Supporting future changes to the data exchange standards 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) Facilitating annual reporting and review of national registries under Articles 7 and 8 of the Kyoto Protocol;
- (g) Administering and maintaining the RSA extranet;
- (h) Facilitating cooperation among RSAs through the RSA Forum and its working groups to ensure registry systems are accurate, efficient and secure;
- (i) Supporting testing activities of the ITL and registry systems, including through an annual disaster recovery test and an annual security audit, with a view to enhancing the reliability and security of the ITL;
- (j) Offering online training and guidance material 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) Supporting the obligations of the ITL administrator in accordance with all applicable decisions of the COP and the CMP;
- (l) Monitoring and supporting negotiations under Article 6 of the Paris Agreement to identify its potential future impacts on the ITL.

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

80. As at 30 September 2017, USD 1,963,788 in ITL user fees had been received from Parties for 2007,¹⁶ 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 and EUR 2,582,305 for 2017 with EUR 19,970 outstanding. Two Parties have been credited with advances towards their 2018 ITL fees as a result of overpayment of their 2017 fees and advance payments of their 2018 fees. 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 2017 are shown in annex II. The status of fees as at 30 September 2017 is shown in tables 4 and 5.

¹⁶ 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 4
Fees for international transaction log activities in the period 2007–2009 and cumulative shortfall as at 30 September 2017

(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 5
Fees for international transaction log activities in the period 2010–2017 and cumulative shortfall as at 30 September 2017

(euros)

	2010 ^a	2011	2012	2013	2014 ^b	2015 ^b	2016 ^b	2017 ^b
Fees budgeted	3 014 423	3 014 423	2 885 010	2 885 010	2 740 760	2 740 760	2 675 679	2 675 675
Fees received	3 014 423	3 014 423	2 885 010	2 759 483	2 740 760	2 740 760	2 602 275	2 582 305
Shortfall	0	0	0	125 527	0	0	73 404 ^c	93 374 ^c
Cumulative shortfall	374 812	374 812	374 812	500 339	374 812	374 812	448 216	541 590

^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.

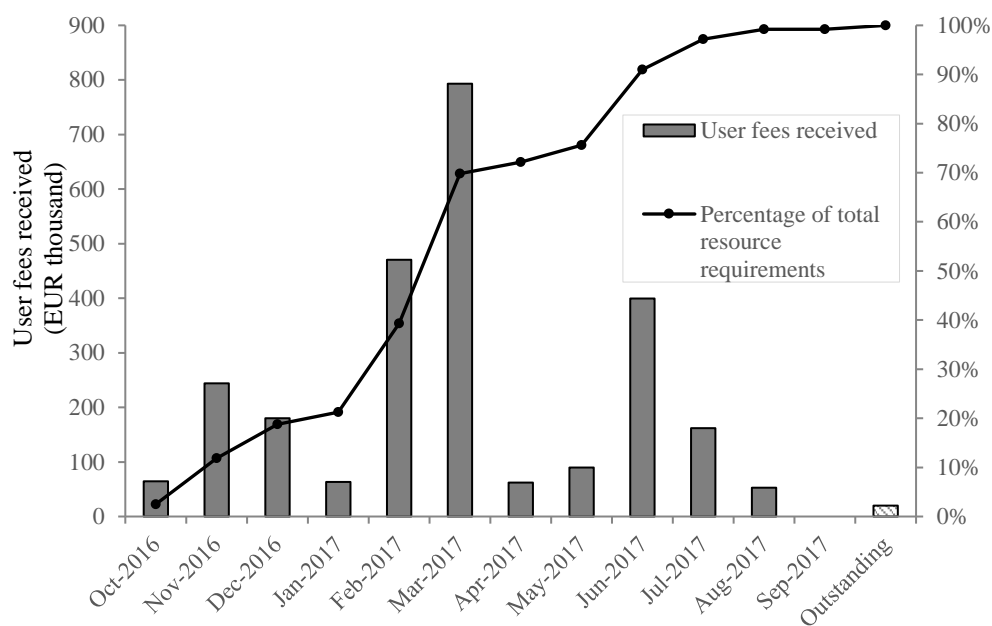
^b Canada's shortfall of EUR 125,527 was not carried over to 2014 and the following years owing to Canada's withdrawal from the Kyoto Protocol and the resulting disconnection of its registry from the international transaction log.

^c The shortfall includes an amount of EUR 73,404 for both 2016 and 2017 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. The difference of EUR 19,970 relates to contributions still to be received for 2017.

81. Delays in receiving user fees from Parties have been noted in previous annual reports of the ITL administrator. As at 30 September 2017, EUR 19,970 was still due for 2017 (0.75 per cent of the fees budgeted for 2017). Figure 7 shows the user fees received for 2017 in 2016 and 2017 as at 30 September 2017 and the cumulative percentage of resource requirements, by month.

Figure 7

International transaction log user fees for 2017 received in 2016 and 2017 as at 30 September 2017



C. Actions and proposals to optimize the cost structure of the international transaction log

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

(a) Optimizing 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) Continuing to identify ways to use secretariat staff instead of consultants or contractors, where possible, including options to consolidate activities related to the ITL service desk, software development and application support.

Annex I

Registry status as at 30 September 2017

<i>Registry</i>	<i>Date independent assessment report was issued</i>	<i>Date of live connection to the international transaction log</i>
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
Clean development mechanism	Not applicable	14 November 2007
Croatia	30 April 2008	11 December 2009
Cyprus	-	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
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	21 July 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 ^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
2017**

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	76 005	0
Austria	1.588	42 492	42 492	0	42 492	42 492	0
Belgium	1.973	52 787	52 787	0	52 787	52 787	0
Bulgaria	0.036	951	951	0	951	951	0
Croatia	0.079	2 126	2 126	0	2 126	2 126	0
Czechia	0.503	13 455	13 455	0	13 455	13 455	0
Denmark	1.323	35 387	35 387	0	35 387	35 387	0
Estonia	0.028	755	755	0	755	755	0
European Commission	2.685	71 837	71 837	0	71 837	71 837	0
Finland	1.009	26 995	26 995	0	26 995	26 995	0
France	10.667	285 418	285 418	0	285 418	285 418	0
Germany	15.350	410 714	410 714	0	410 713	410 714	0
Greece	1.065	28 505	28 505	0	28 505	28 505	0
Hungary	0.437	11 693	11 693	0	11 693	11 693	0
Iceland	0.737	19 722	19 722	0	19 722	19 722	0
Ireland	0.797	21 316	21 316	0	21 316	21 316	0
Italy	9.089	243 206	243 206	0	243 205	243 206	0
Japan	14.939	399 720	399 720	0	399 719	399 720	0
Latvia	0.032	867	867	0	867	867	0
Liechtenstein	0.188	5 035	5 035	0	5 035	5 035	0
Lithuania	0.055	1 483	1 483	0	1 483	1 483	0
Luxembourg	0.153	4 084	4 084	0	4 084	4 084	0
Monaco	0.181	4 839	4 839	0	4 839	4 839	0
Netherlands	3.352	89 684	89 684	0	89 684	89 684	0
New Zealand	0.961	25 708	25 708	0	25 708	25 683	25
Norway	2.319	62 046	62 046	0	62 046	62 046	0
Poland	0.896	23 974	23 974	0	23 974	23 974	0
Portugal	0.943	25 233	25 233	0	25 232	25 233	0
Romania	0.125	3 357	3 357	0	3 357	3 357	0
Russian Federation ^c	2.743	73 404 ^d	0	0	73 404 ^d	0	0
Slovakia	0.113	3 021	3 021	0	3 021	3 021	0
Slovenia	0.171	4 588	4 588	0	4 588	4 588	0
Spain	5.311	142 108	142 108	0	142 108	142 108	0
Sweden	1.917	51 304	51 304	0	51 304	51 304	0
Switzerland	2.760	73 851	73 851	0	73 851	73 851	0
Ukraine	0.745	19 945	19 945	0	19 945	0	19 945
United Kingdom	11.887	318 064	318 064	0	318 064	318 064	0
Total	100.000	2 675 679	2 602 275	0	2 675 675	2 582 305	19 970

^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.

^d The 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.

Annex III

Number of transactions proposed to the international transaction log from 1 October 2016 to 30 September 2017

<i>Registry</i>	<i>Acquisition^a</i>	<i>Transfer^b</i>	<i>Forwarding^c</i>	<i>Internal transfer^d</i>	<i>Issuance^e</i>	<i>Retirement^f</i>	<i>Cancellation^g</i>	<i>Total</i>
Australia	57	12	0	0	0	0	7	76
Austria	1	2	0	0	0	0	0	3
Belgium	0	5	0	0	0	0	1	6
Bulgaria	0	0	0	0	0	0	2	2
Clean development mechanism	0	17	799	0	594	0	1 072	2 482
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	0
Denmark	2	9	0	0	0	0	4	15
Estonia	0	0	0	0	0	0	0	0
European Union	572	226	0	0	0	0	408	1 206
Finland	34	8	0	6	0	0	2	50
France	2	1	0	0	0	0	32	35
Germany	38	64	0	0	0	0	108	210
Greece	0	0	0	0	0	0	0	0
Hungary	1	1	0	0	0	0	0	2
Iceland	0	0	0	0	0	0	0	0
Ireland	8	8	0	0	0	0	0	16
Italy	0	10	0	2	0	0	1	13
Japan	0	0	0	0	0	0	0	0
Latvia	0	0	0	0	0	0	0	0
Liechtenstein	6	0	0	0	0	0	0	6
Lithuania	0	0	0	0	0	0	0	0
Luxembourg	3	151	0	0	0	0	2	156
Malta	0	0	0	0	0	0	0	0
Monaco	0	0	0	0	0	0	0	0
Netherlands	20	135	0	0	0	0	152	307
New Zealand	0	0	0	0	0	0	44	44
Norway	15	20	0	4	0	0	60	99
Poland	0	0	0	0	0	0	0	0
Portugal	1	7	0	2	0	0	0	10
Romania	0	0	0	0	0	0	1	1
Russian Federation ^h	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	20	11	0	3	0	0	24	58
Sweden	13	89	0	26	0	0	95	223
Switzerland	137	137	0	52	0	0	80	406
Ukraine	0	0	0	0	2	1	1	4
United Kingdom	38	72	0	0	0	0	91	201
Total	968	985	799	95	596	1	2 187	5 631

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 CDM registry to a national registry. See decision 3/CMP.1, annex, paragraph 66(b). Transfers from the CDM 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 2016 to 30 September 2017

<i>Registry</i>	<i>Acquisition^a</i>	<i>Transfer^b</i>	<i>Net transfer^c</i>	<i>Forwarding^d</i>	<i>Internal transfer^e</i>	<i>Issuance^f</i>	<i>Retirement^g</i>	<i>Cancellation^h</i>
Australia	6 091 625	681 730	-5 409 895	0	0	0	0	217 158
Austria	11 139	158 832	147 693	0	0	0	0	0
Belgium	0	276 821	276 821	0	0	0	0	1
Bulgaria	0	0	0	0	0	0	0	229 229
Clean development mechanism	0	348 095	348 095	54 576 193	0	146 383 355	0	8 962 904
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	0
Denmark	945	114 434	113 489	0	0	0	0	63 961
Estonia	0	0	0	0	0	0	0	0
European Union	49 211 322	18 489 711	-30 721 611	0	0	0	0	3 883 784
Finland	506 801	59 428	-447 373	0	6 975	0	0	29 584
France	85 000	70 674	-14 326	0	0	0	0	118 439
Germany	1 699 876	2 182 852	482 976	0	0	0	0	832 093
Greece	0	0	0	0	0	0	0	0
Hungary	9 647	9 647	0	0	0	0	0	0
Iceland	0	0	0	0	0	0	0	0
Ireland	115 965	115 965	0	0	0	0	0	0
Italy	0	380 227	380 227	0	45 630	0	0	7 616
Japan	0	0	0	0	0	0	0	0
Latvia	0	0	0	0	0	0	0	0
Liechtenstein	69 828	0	-69 828	0	0	0	0	0
Lithuania	0	0	0	0	0	0	0	0
Luxembourg	514 417	478 774	-35 643	0	0	0	0	216
Malta	0	0	0	0	0	0	0	0
Monaco	0	0	0	0	0	0	0	0
Netherlands	6 756 243	21 547 256	14 791 013	0	0	0	0	3 785 809
New Zealand	0	0	0	0	0	0	0	330 768
Norway	220 161	6 530 233	6 310 072	0	4 178 026	0	0	3 143 732
Poland	0	0	0	0	0	0	0	0
Portugal	510	763 677	763 167	0	6 143	0	0	0

<i>Registry</i>	<i>Acquisition^a</i>	<i>Transfer^b</i>	<i>Net transfer^c</i>	<i>Forwarding^d</i>	<i>Internal transfer^e</i>	<i>Issuance^f</i>	<i>Retirement^g</i>	<i>Cancellation^h</i>
Romania	0	0	0	0	0	0	0	7
Russian Federation ⁱ	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	237 719	213 578	-24 141	0	16 587	0	0	216 720
Sweden	611 872	5 976 218	5 364 346	0	428 350	0	0	10 075 381
Switzerland	12 652 684	10 527 186	-2 125 498	0	2 179 322	0	0	1 091 904
Ukraine	0	0	0	0	0	23 225 443	1 999 434 250	375 025
United Kingdom	1 487 889	11 706 400	10 218 511	0	0	0	0	983 723
Total	80 283 643	80 631 738	348 095	54 576 193	6 861 033	169 608 798	1 999 434 250	34 348 054

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.