CLEAN DEVELOPMENT MECHANISM

CDM-2013ALY5-INFO

Fifth analysis report to the CDM Executive Board on the results of DOE performance monitoring

Version 01.0

United Nations
Framework Convention on
Climate Change

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1. Introduction

1. The Executive Board of the clean development mechanism (hereinafter referred to as the Board) at its fifty-eighth meeting adopted the "Procedure on performance monitoring of designated operational entities" and subsequently revised the procedure at its seventy-third meeting. The procedure requires that the Board be provided with an analysis report on designated operational entities' (DOE) performance providing potential proposals for system-wide improvement.

2. The present report is the fifth of such reports. It summarizes and analyses the findings from the first to the seventh monitoring periods running as follows: 1st period, from 1 January 2010 to 30 June 2010; 2nd period, from 1 July 2010 to 31 December 2010; 3rd period, from 1 January 2011 to 30 June 2011; 4th period, from 1 July 2011 to 31 December 2011 (accounting for data and submissions finalized as of 30 September 2012); 5th period, from 1 January 2012 to 30 June 2012 (accounting for data and submissions finalized as of 31 March 2013); 6th period, from 1 July 2012 to 31 December 2012 (accounting for data and submissions finalized as of 30 June 2013); and 7th period, from 1 January 2013 to 30 April 2013 (accounting for data and submissions finalized as of 31 July 2013).

3. The trends observed in the first and second monitoring periods of 2010, 2011 and 2012 are similar, therefore for the present report the data from the first and second monitoring periods of each year were combined. Hence, it is possible to analyse the performance of the DOEs for the years 2010, 2011 and 2012, as well as compare them with each other.

4. This report provides:

   (a) Information, trends and analysis on the long-term performance of the DOEs;

   (b) Detailed analysis of the issues arising from DOE performance, especially those identifying shortcomings in the CDM requirements, procedures and guidance;

   (c) Potential broad proposals for system-wide improvement via identification of issues where guidance or requirements lack clarity or are non-existent.

5. An overview of the performance of DOEs is provided followed by possible reasons for the trends observed, analysis of the issues raised in requests for review and potential areas of improvements for both registration and issuance. A more detailed analysis and evaluation of possible options for system-wide improvement providing rationale for the options suggested is provided for registration and issuance in Appendix 1 and 2 respectively.

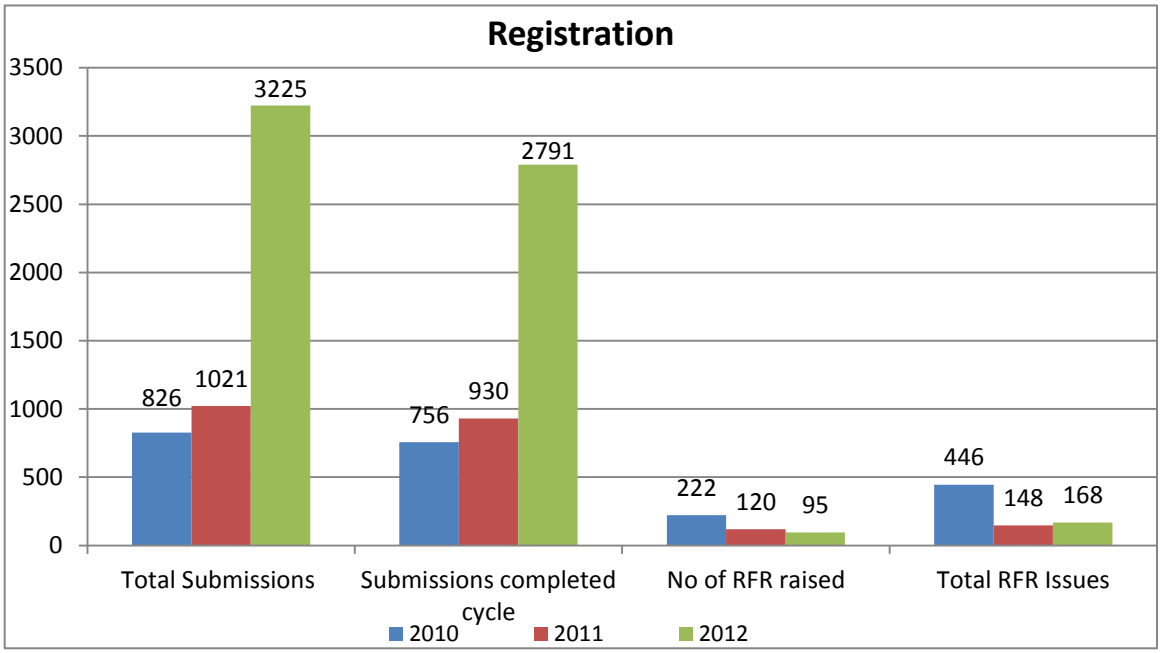
2. Analysis of registration

2.1. Overview of performance of DOEs

1. A total of 826 requests for registration were submitted in 2010, of which 222 requests for review were raised leading to 446 review issues. In 2011, 1,021 requests for registration were submitted, of which 120 requests for review were raised leading to 148 review issues. In 2012, 3,225 requests for registration were submitted, out of which 95 requests for review were raised leading to 168 review issues.

2. For the seventh monitoring period (1 January to 30 April 2013, finalized as of 31 July 2013), 83 requests for registration were submitted, none of which were processed (as per the decisions of the Board at EB70 whereby prioritization was given to submissions up to 31 December 2012, consequently there have been no request for review issues). Therefore, in the absence of data, no analysis of issues could be carried out for the seventh monitoring period, and this explains why the I_2 indicator in the graph below drops to zero.

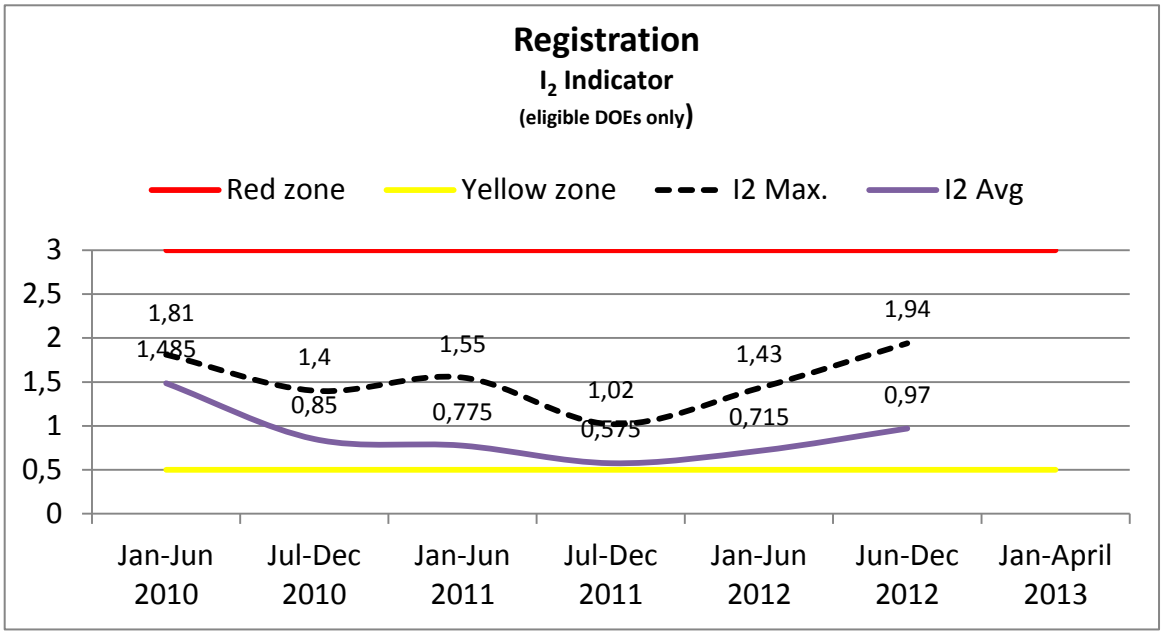
Figure 1. Submissions versus Processing versus Requests for Review



3. A trend of I_2 Indicator (rate of requests for review) in the registration process for eligible DOEs and a trend of DOE-wise I_2 Indicator for major DOEs for the monitoring periods of 1 January 2010 to 31 December 2010, 1 January 2011 to 31 December 2011 and 1 January 2012 to 31 December 2012 are presented below. The graph indicates that during this period, the maximum value of the indicator I_2 has never crossed the higher threshold and is in the "yellow zone". In 2012, the value of I_2 Indicator for all DOEs is equal to or lower than 1, except for two DOEs that have the maximum value of 1.43 and 1.94 respectively. The performance of DOEs in 2011 and 2012 shows a reducing trend of average value of I_2 Indicator[1] (rate of requests for review) in the registration process for eligible DOEs by 59% and 45%, respectively, as compared to the previous year in 2010.

[1] Indicator I_2 is the rate of requests for review adjusted by weight of the requests: Indicator I_2 = SUM (weights of requests for review)/Number of requests completed.

Figure 2. I_2 Indicator



2.2. Evolution of performance of DOEs

4. From the data presented above, the overall performance of DOEs is seen to have improved in 2011 as compared to the previous year, and the trend for 2012 seems to indicate a more or less stable situation compared to 2011:

   (a) The performance of DOEs in 2011 and 2012 shows a reducing trend of average value of I_2 Indicator (rate of requests for review) in the registration process for eligible DOEs by 59% and 45%, respectively, as compared to the previous year in 2010;

   (b) While submissions have increased, a significant reduction in the number of request for review issues has been observed: 67% and 62% in 2011 and 2012 respectively in comparison to 2010.

5. The main reasons for the observed improvement in the performance of DOEs may be due, in addition to potential external factors, to:

   (a) New, improved and revised guidance/documents being provided by the Board;

   (b) Enhancement in the DOE interaction through various workshops and interactions;[2]

   (c) Organization of training across various regions;

   (d) Increase in overall experience and skills of the DOEs over a period of time;

   (e) Introduction of information and reporting checks[3] which detect issues related to information, reporting, repetitive and recurring "Summary Note" issues, earlier in

[2] DOE teleconference; interaction of the DOE/AE Coordination Forum with the Board and the CDM-AP, DOE dedicated email account.

the process prior to publication of the submitted requests, and a significant reduction in specific request for review issues (e.g. issues related to grid emission factor, wind/hydro tariff issues for projects from China, E^+/E^- issues, etc.) subsequent to the availability of Board guidance;

(f) Implementation of the Project cycle procedure (PCP), Project standard (PS), and Validation and verification standard (VVS) since 1 May 2012, and also the improvement and revision of some methodologies and tools may have had a positive impact on the indicator I_2.

2.3. Analysis of results of DOE performance monitoring and possible suggestions for improvement

6. The analysis of issues raised in requests for review of registration classified the issues into requirements and categories. With regard to the proportion of different issues, comparable trends are observed between submissions in 2010, in 2011 and in 2012. The analysis in the graph below shows that:

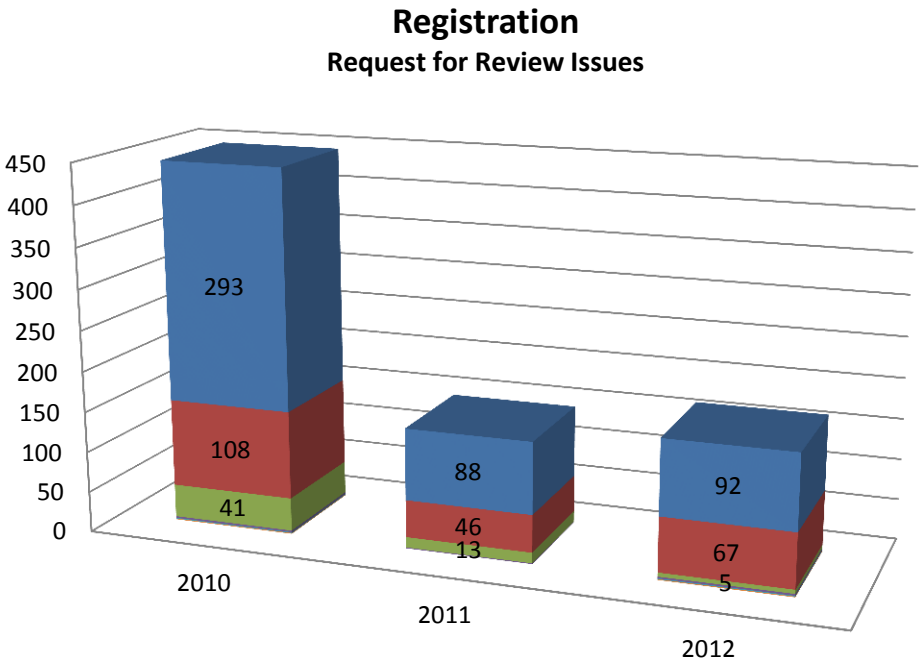
(a) For the year 2010, 66% of the issues raised were related to the additionality of the project activity, 24% related to applicability of the baseline methodology, 9% related to the application of the monitoring methodology and less than 1% were related to the other categories (project description, procedural and related requirements and other CDM requirements);

(b) For the year 2011, the analysis of the graph show that 59.5% of the issues raised were related to the additionality of the project activity, 31.1% related to applicability of the baseline methodology, 8.8% related to the application of the monitoring methodology and 0.7% were related to project description;

(c) For the year 2012, 54.8% of the issues raised were related to the additionality of the project activity, 39.9% related to applicability of the baseline methodology, 3.0% related to the application of the monitoring methodology and 1.2% to project description.

[3] The revised guidelines of the completeness check included checking of reporting requirements, implemented from 1 September 2009 (EB 48 report, paragraphs 62 and 75), which later turned into a two-step process – completeness check (CC) and information and reporting check (IRC) from early 2010 as per the Board's decision (EB 54 report, annexes 28 and 35 dated 28 May 2010).

Figure 3. Request for review issues



	2010	2011	2012
Additionality	293	88	92
Application of baseline methodology	108	46	67
Application of the monitoring methodology	41	13	5
Project description	2	1	2
Procedural and related requirements	1	0	1
Other CDM requirements	1	0	1

7. The distribution of request for review issues for registration in 2012 and the corresponding analysis is as follows:

(a) Additionality contributed to 55% of the total request for review issues, out of which 60% were due to investment analysis and out of which 33% were reporting and 58% are technical issues, and the key concern was the suitability of input values (56%) and suitability of benchmark capital asset pricing model (CAPM) and determination of beta value (24%);

(b) Application of baseline methodology contributed to 40% of the total request for review issues, out of which 33% were due to algorithms and/or formulae to determine emission reductions and out of which 30% were reporting and 64% were technical issues and the key concern was the value determination (55%), grid emission factor determination (25%) and calculation and equations (20%);

(c) Application of baseline methodology contributed to 40% of the total request for review issues, out of which 42% were due to baseline identification and out of which 30% were reporting and 64% were technical issues, and the key concern was the identification and/or exclusion of alternative scenarios (46%) and level of enforcement of regulation (21%);

(d) 7% of the total requests for review issues were related to either ambiguity in interpretation of requirements or absence of a requirement and the key concern was the suitability of benchmark by the application of CAPM and determination of beta value (36%) and use of expired regulatory documents (9%).

8. In 2012, the majority of the issues (66%) raised were related to compliance with the requirements of the validation and verification manual (VVM v.1.2), out of which reporting issues contribute to 34% and technical correctness and accuracy issues contribute to 61%. During the period from 1 January to 31 December 2012, non-compliance with 16 paragraphs (namely paragraphs 68, 71, 81, 82, 84, 85, 90, 91, 92, 111, 112, 113, 114, 115, 119, 120) of the VVM (version 1.2) account for 77% of the total request for review issues, with paragraphs 111 (investment analysis – validation of input values and accuracy of calculations) and 112 (investment analysis – suitability of benchmark) accounting for 22% and 8% respectively.

9. The table below provides an analysis of request for review issues and potential options for system-wide improvements that may lead to a reduction of requests for review in registration.

Table 1. Analysis of request for review issues and potential options for system-wide improvements for registration

Requirements	Issues/ concerns from request for review issues in 2012	Category	Potential options for improvement – 2014					
			Existing measures	Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
Additionality – Investment Analysis	Additionality contributes to 55% of total request for review issues, out of which 60% are due to Investment Analysis and out of which 33% are reporting and 58% are technical issues and the key concern is	Issues related to reporting	-	Strengthen quality check procedures, technical review process and train their personnel on assessing suitability of the input values to the investment analysis and suitability of benchmark and careful study of precedencies in the CDM pipeline	1) Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on the validation of Investment Analysis (Project 118)	-	Revision of forms as applicable	-

	the suitability of input values (56%) and suitability of benchmark CAPM and determination of beta value (24%)	Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements	Guidelines on the assessment of investment analysis do not provide guidance on weighted average cost of capital (WACC) by CAPM, including beta value	Apply standard method/practice in the host country for the sector and validation based on relevant financial expertise	1) Develop generic standardized spreadsheets for Investment Analysis for some key sectors that cover the majority of projects (e.g. for renewable energy projects such as wind, hydro-power, etc.) to reduce the reporting issues	Provide guidance in the Investment Analysis guidelines on WACC benchmark using CAPM and have regular updates of expected return on equity as per Appendix to the guidelines	-	Regional Calibration Workshops in 2014 to include a focus on the Investment analysis, through case study approach, particularly on validation of input values and suitability of Benchmark, Validation of WACC benchmarks
		Other issues, to analyse system-wide gaps and improve classification:	-	-	Provide guidelines for the application of E-policy on investment analysis	-	-	-
Application of baseline methodology-algorithms and/or formulae to determine emission	Application of baseline methodology contributes to 40% of total request for review issues, out of which	Issues related to reporting	-	Regular training of staff on application of checklists for completeness and information and reporting checks	Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on grid emission factor including details of	-	-	Regional Calibration Workshops in 2014 to include a focus on correct application

reductions	33% are due to algorithms and/or formulae to determine emission reductions and out of which 30% are reporting and 64% are technical issues, and the key concern is the value determination (55%), grid emission factor determination (25%) and calculation and equations (20%)				options used, vintage of data, equations as per the methodology (Project 118)			of algorithms and/or formulae to determine emission reductions including post-registration changes
		Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements;	Standardized spreadsheets for grid emission factor calculations are available on website	Apply standard method/practice in the host country for the sector and validation based on relevant technical expertise	Develop generic standardized spreadsheets for emission reduction calculations for some key sectors that cover the majority of projects (e.g. for biomass electricity and heat generation, waste-heat recovery, landfill, methane recovery from waste water and AWMS, etc.) to reduce the reporting and technical accuracy issues	-	-	
Application of baseline methodology-baseline identification	Application of baseline methodology contributes to 40% of total request for review issues, out of which 42% are due	Issues related to reporting	-	Regular training of staff on application of checklists for completeness and information and reporting checks	Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on selection of alternate scenario for selection of baseline (Project 118)	-	-	

	to baseline identification and out of which 30% are reporting and 64% are technical issues and the key concern is the Identification and/or exclusion of alternative scenarios (46%) and level of enforcement of regulation (21%)	Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements	Insufficient validation of low level of enforcement of national regulations mandating flaring, ventilation (methane and CMM emissions)		Define a step-wise approach to determine the level of enforcement of a national regulation mandating flaring, ventilation (methane and CMM emissions), including type of valid and reliable evidence/data/sources required	-	-	
Other issues, to analyse system-wide gaps and improve classification	7% of total request for review issues, related to either ambiguity in interpretation of requirements or absence of a requirement, and the key concern is the suitability of benchmark CAPM and	Absence of requirement / guidance by the Board	-	-	Provide guidelines for the application of E-policy on investment analysis	-	-	-
		Ambiguity of interpretation of requirements of methodology/ guidance	Application of expired documents and can avoided by making further improvements to the regulatory documents	Check the version of various tools/documents and their expiry date	1) Maintain consolidated and updated information on the public website	-	-	-

	determination of beta value (36%) and use of expired regulatory documents (9%)							

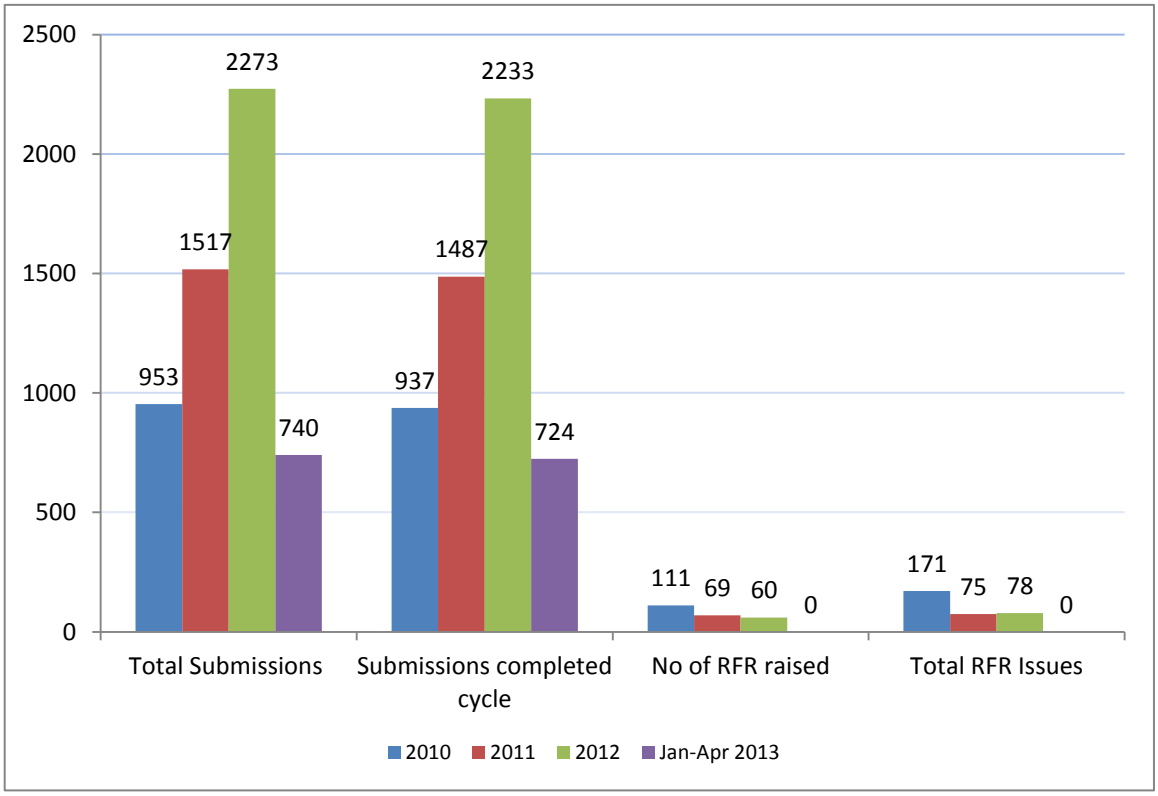
3. Analysis of issuance

3.1. Overview of performance of DOEs

10. A total of 953 requests for issuance were submitted in 2010, of which 111 requests for review were raised, leading to 171 review issues. In 2011, 1,517 requests for issuance were submitted, of which 69 requests for review were raised, leading to 75 review issues. In 2012, 2,273 requests for registration were submitted, of which 60 requests for review were raised, leading to 78 review issues.

11. For the seventh monitoring period (1 January to 30 April 2013, finalized as of 31 July 2013), 740 requests for issuance were submitted, of which 724 (98% completion) projects were automatically issued CERs, and consequently there have been no requests for review leading to indicator I_2 of 0 for all DOEs.

Figures 4. Issuance submissions

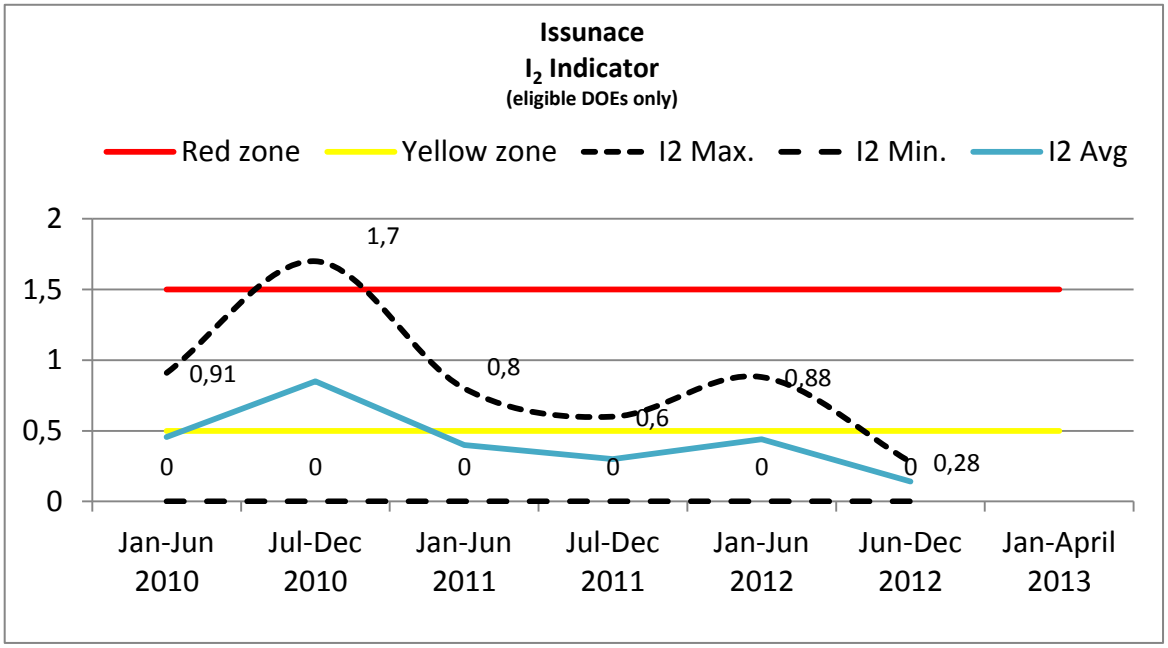


12. A trend of I_2 Indicator (rate of requests for review) in the issuance process for eligible DOEs for the monitoring periods running from 1 January 2010 to 30 April 2013 is presented below. The graph indicates that during this period, the upper threshold is higher than the maximum values of the indicator I_2, except for one case in 2010 when a spot-check was raised for one DOE. The performance of DOEs in 2011, 2012 and January to April 2013 shows a reducing trend of average value of I_2 Indicator[4] (rate of

[4] Indicator I_2 is the rate of requests for review adjusted by weight of the requests: Indicator I_2 = SUM (weights of requests for review)/number of requests completed.

requests for review) in the issuance process for eligible DOEs by 12%, 21% and 100% respectively, as compared to 2010.

Figure 5. I_2 Indicator



3.2. Evolution of performance of DOEs

13. From the data presented above, the overall performance of DOEs is seen to have continuously improved in 2011, 2012 and January to April 2013 as compared to 2010:

    (a) The performance of DOEs in 2011, 2012 and January to April 2013 shows a reducing trend of average value of I_2 indicator (rate of requests for review) in the issuance process for eligible DOEs by 12%, 21% and 100%, respectively, as compared to the previous year in 2010;

    (b) While submissions have increased, a significant reduction in the number of request for review issues has been observed: 56% and 54% in 2011 and 2012 respectively in comparison to 2010;

    (c) There are no requests for review for the first monitoring period of 2013, which shows a dramatic improvement in the performance of DOEs. However, this data is related only to the first four months and therefore it is too early to draw any firm conclusions.

14. The main reasons for the observed improvement in performance of DOEs may be due, in addition to potential external factors, to:

    (a) New, improved and revised guidance/documents being provided by the Board;

    (b) Enhancement of interaction with DOEs through various workshops and interactions;[5]

[5] DOE Teleconference, interaction of the DOE/AE Coordination Forum with the Board and the CDM-AP, DOE dedicated email account.

(c) Organization of training across various regions;

(d) Increase in overall experience and skills of the DOEs over time;

(e) Introduction of information and reporting checks[6] which detect issues related to information, reporting, repetitive and recurring "summary note" issues earlier in the process prior to publication of the submitted requests, and a significant reduction in specific request for review issues (e.g. issues related to HFC projects, etc.) subsequent to the availability of Board guidance;

(f) Implementation of the Project cycle procedure (PCP), Project standard (PS), and Validation and verification standard (VVS) since 1 May 2012, and also improvement and revision of some methodologies and tools may also have had a positive impact on the indicator I_2. These new documents include provisions for post-registration changes like temporary deviations, revision of the monitoring plan and change in project design. The project standard in its appendix 1 provides a list of cases that do not need prior approval from the Board. The impact of the implementation of the new standards and procedure, including the new procedures for post-registration changes, on the DOE performance including the indicator I_2 cannot be conclusively drawn and will need to be observed for longer periods..

3.3. Analysis of results of DOE performance monitoring and possible suggestions for improvement

15. The analysis of issues raised in requests for review of issuance were classified into requirements and categories. With regard to the proportion of different issues, comparable trends are observed between submissions in 2010, in 2011 and in 2012. The analysis in the graph below shows that:

(a) For the year 2010, 47% of the issues raised were related to the assessment of data and calculation of greenhouse gas emission reductions, 21% were related to the compliance of monitoring with the monitoring plan, 9% were related to the compliance of the monitoring plan with the monitoring methodology, 9% were related to the application of the procedural and related requirements and less than 13% were related to the implementation of the project activity;

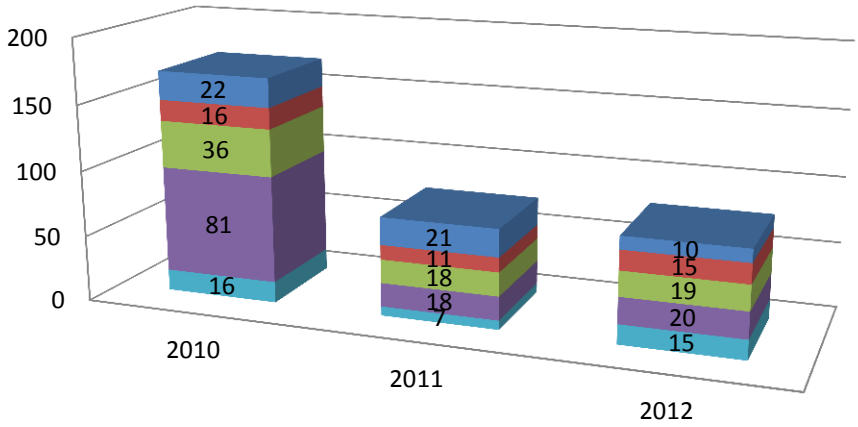
(b) For the year 2011, 24% of the issues raised were related to the assessment of data and calculation of greenhouse gas emission reductions, 24% were related to the compliance of monitoring with the monitoring plan, 15% were related to the compliance of the monitoring plan with the monitoring methodology, 9% were related to the application of the procedural and related requirements and less than 28% were related to the implementation of the project activity;

(c) For the year 2012, 25% of the issues raised were related to the assessment of data and calculation of greenhouse gas emission reductions, 24% were related to the compliance of monitoring with the monitoring plan, 19% were related to the compliance of the monitoring plan with the monitoring methodology, 19% were

[6] The revised guidelines of the completeness check, included checking of reporting requirements, implemented from 1 September 2009 (EB 48 report, paragraphs 62 and 75), which later turned into a two-step process – completeness check (CC) and information and reporting check (IRC) from early 2010 as per the Board's decision (EB 54 report, annexes 28 and 35 dated 28 May 2010).

related to the application of the procedural and related requirements and less than 13% were related to the implementation of the project activity.

Figure 6. Request for review Issues



	2010	2011	2012
Implementation of the PA	22	21	10
Compliance of the monitoring plan with the monitoring methodology	16	11	15
Compliance of monitoring with the monitoring plan	36	18	19
Assessment of data and calculation of greenhouse gas emission reductions (BE,PE, ER calculation)	81	18	20
Procedural and related requirements	16	7	15

16. The distribution of request for review issues for issuance in 2012 and the corresponding analysis is as follows:

(a) Implementation of the project activity contributed to 13% of the total request for review issues, of which 50% were reporting and 40% were technical issues and the key concern was the different project design post registration;

(b) Compliance of the monitoring plan with the monitoring methodology contributed to 19% of the total request for review issues, of which 67% were technical and the remaining were reporting issues and the key concern was the compliance with the monitoring methodology;

(c) Compliance of monitoring with the monitoring plan contributed to 24% of the total request for review issues, of which 24% were reporting and 74% were technical issues and the key concern was the accuracy of the equipment and inconsistency among various documents;

(d) Assessment of data and calculation of greenhouse gas emission reductions contributed to 25% of the total request for review issues, of which 75% were technical and the remaining were reporting issues and the key concern was the exclusion of the odd values from the emission reduction calculations and cross-checking of monitored parameters not as per requirements or methodology;

(e) 20% of the total request for review issues were related to either ambiguity in interpretation of requirements or absence of a requirement, and the key concern was the compliance with EB clarification 0191 (HFC issue on inflated baselines and w-factor) and the absence of requirements on monitoring parameters of other registered projects which share the same equipment.

17. Divergent trends are observed in 2010, 2011 and 2012 with respect to the classification of issues raised. However, a significant number of issues are still being raised with regard to compliance of monitoring with the monitoring plan and assessment of data and calculation of greenhouse gas emission reductions.

18. A deeper analysis on the recurrent issues raised in 2012 on compliance of monitoring with the monitoring plan shows that the most frequent reporting issues are related to inconsistencies between the measurement methods and/or equipment used for monitoring with the registered/revised monitoring plan. With regard to technical correctness and accuracy issues on compliance of monitoring with the monitoring plan, the most frequent issues raised are related to the accuracy of the equipment used which is not in compliance with the monitoring plan.

19. The specific recurrent issues raised on assessment of data and calculation of greenhouse gas emission reductions are related to the exclusion of odd values from calculations of emission reductions; these issues were all raised for N_2O projects. Other issues raised were due to the lack of cross-checking of monitored parameters used for emission reduction calculations.

20. In 2012, the majority of the issues (55%) raised were related to compliance with the requirements of the validation and verification manual (VVM version 1.2), of which reporting issues constituted 19% and technical correctness and accuracy issues constituted 65%. During the period from 1 January to 31 December 2012, non-compliance with seven paragraphs (208, 205, 195, 199, 204, 197, and 221) of the VVM (version 1.2) accounted for 55% of the total request for review issues, with paragraphs 208 (assessment of monitored parameters and correctness of calculations) and 205 (proper execution of the monitoring plan) accounting for 21% and 15% respectively of all issues raised.

21. The table below provides an analysis of request for review issues and potential options for system-wide improvements that may lead to a reduction of requests for review in issuance.

Table 2. Analysis of request for review issues and potential options for system-wide improvements for issuance

Requirements		Issues/ concerns from request for review issues in 2012	Category	Potential options for improvement – 2014					
				Existing measures	Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
1	Implementation of the PA	13% of total request for review issues, out of which 50% are reporting and 40% are technical issues and the key concern is the different project design post-registration	Issues related to reporting	Post registration changes-change in project design (PS, PCP, VVS)	Regular training of staff on application of checklists for completeness and information and reporting checks	Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on the validation of project design changes (Project 118)	-	Revision of forms as applicable	-
			Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements		Strengthen quality check procedures, technical review process and train their personnel on assessing change in project design during verification		-	-	Regional Calibration Workshops in 2014 to include a focus on the post-registration changes, particularly on change in project design

Requirements		Issues/ concerns from request for review issues in 2012	Category	Potential options for improvement – 2014					
				Existing measures	Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
2	**Compliance of the monitoring plan with the monitoring methodology**	19% of total request for review issues, out of which 67% are technical and the remaining are reporting issues and the key concern is the compliance with the monitoring methodology	Issues related to reporting	-	-	Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on the validation of application and applicability of the applied methodologies (Project 118)	-	-	Regional Calibration Workshops in 2014 to include a focus on correct application of algorithms and/or formulae to determine emission reductions including post-registration changes on revision of monitoring plan or methodology or deviations
	Compliance of monitoring with the monitoring plan	24% of total request for review issues, out of which 24% are reporting and 74% are technical issues and the key concern is the accuracy of the equipment and	Issues related to reporting	Appendix I of Project standard or submit post-registration changes as per PCP	Apply corrections in accuracy of equipment as per the provisions in Appendix I of Project standard or submit post-registration changes as per PCP	Develop standardized verification templates which shall include specific detailed reporting requirements on accuracy of the equipment, calibration, measurement methods and reporting of	-	-	

Requirements		Issues/ concerns from request for review issues in 2012	Category	Potential options for improvement – 2014					
				Existing measures	Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
		inconsistency among various documents				missing data which is expected to reduce the issues due to reporting issues.			
3			Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements	-	-	Project 180 of CDM MAP 2013 on revision of PS, VS and PCP may further explore expanding Appendix 1 of the PS to include common monitoring issues including those not under the control of the PP/CME.	-	-	
4	**Assessment of data and calculation of greenhouse gas emission reductions (BE, PE, ER**	25% of total request for review issues, out of which 75% are technical and the remaining	Technical correctness and accuracy issues with regard to failure to identify non-	-	The odd values or extraneous values should be excluded from the data for emission	Develop generic standardized spreadsheets for emission reduction calculations for some key sectors that cover majority	-	-	

Requirements		Issues/ concerns from request for review issues in 2012	Category	Potential options for improvement – 2014					
				Existing measures	Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
	calculation)	are reporting issues and the key concern is the exclusion of the odd values from the emission reduction calculations and cross-checking of monitored parameters not as per requirements or methodology	compliance with the CDM requirements		reduction calculations	of projects (e.g. for biomass electricity and heat generation, waste-heat recovery, landfill, methane recovery from waste water and AWMS, etc.) to reduce the reporting and technical accuracy issues			
5	**Other issues, to analyse system-wide gaps and improve classification**	20% of total request for review issues, related to either ambiguity in interpretation of requirements or absence of	Absence of requirement/ guidance by the Board	No requirements on monitoring parameters of other registered projects which share the same equipment	-	-	-	-	-

Requirements		Issues/ concerns from request for review issues in 2012	Category	Potential options for improvement – 2014					
				Existing measures	Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
		a requirement, and the key concern is the compliance with EB clarification 0191 (HFC issue on inflated baselines and w-factor) and absence of requirements on monitoring parameters of other registered projects which share the same equipment.	-	Absence of procedure to address errors in previous verifications	-	Procedures adopted at EB75 on voluntary cancellations/ excess issuance	-	-	-

4. Analysis of post-registration changes

22. The Board at its seventy-third meeting adopted the revised "Procedure on performance monitoring of designated operational entities" requiring the analysis of the issues arising from post-registration requests. The procedure was effective from 1 January 2013, and therefore the monitoring of the performance of DOEs with respect to the post-registration changes started from the seventh monitoring period.

23. During this monitoring period, 160 requests for post-registration changes were submitted, of which 105 were processed and there were no submissions for which either a clarification has been requested from a DOE or has been rejected. Therefore, this indicates the good performance of DOEs in this process.

24. As DOE performance for the post-registration changes process has been monitored only for one monitoring period (four months), it is too early to draw any meaningful conclusions. Monitoring the trends in the coming periods will be needed.

5. Potential areas for system-wide improvement

25. Taking into consideration the data gathered for the first, second, third, fourth, fifth, sixth and seventh monitoring periods of performance monitoring of DOEs and the analysis above, the following potential areas of improvement have been identified:

    (a) To further enhance the performance of the DOEs by:

        (i) Continuing to monitor the performance of the DOEs and report to the Board;

        (ii) Supporting that this information and analysis is used by:

            a. DOEs for system improvements including drafting checklists for auditors during validation and verification and used as check points for focused technical reviews;

            b. The CDM-AP and CDM-AT for defining the focused audit scope during surveillance audits, performance assessments, etc.;

            c. The secretariat in supporting the Board in taking measures to bring clarity both in language and in substantive requirements in the respective paragraphs of the CDM rules – including the on-going work on revision of the VVS/PS that are most frequently referred to in the request for review issues;

    (b) To continue addressing the issues related to investment analysis by:

        (i) Providing new guidelines and templates on investment analysis, by:

            a. Developing validation templates which shall include specific detailed reporting requirements on the validation of investment analysis to reduce the reporting issues;

            b. Developing generic standardized spreadsheets for investment analysis that cover the majority of projects (e.g. renewable energy

projects such as wind, hydro-power, etc.) to reduce the reporting issues; and

c. Provide guidelines for the application of E-policy on investment analysis;

(ii) Improving and clarifying existing rules on investment analysis, by:

a. Revising the existing guidelines on the assessment of investment analysis to address the choice of suitable data vintage for determination of input values for weighted average cost of capital (WACC), including risk free rate, beta value, market return, on benchmark using capital asset pricing model (CAPM), and have regular updates of the default return on equity (RoE) values as per appendix to the investment analysis guidelines;

(iii) Ensuring that the DOE validation teams have sufficient competence and skills to undertake validation of investment analysis and continue to regularly train their staff on validation of investment analysis, particularly on the validation of input values and benchmark including WACC; and

(iv) Continuing to provide training on investment analysis for DOEs in future regional calibration workshops, particularly on validation of input values and suitability of benchmark, particularly on validation of WACC benchmarks;

(c) To continue exploring innovative and simple approaches for the demonstration of additionality;

(d) Develop and define a step-wise approach to determine the level of enforcement of a national regulation mandating methane flaring and ventilation (LFG and CMM emissions), including type of valid and reliable evidence/data/sources to reduce request for review issues due to insufficient validation of requirements on low level of enforcement of national regulations;

(e) To prioritize the work for developing standardized validation and verification templates and guidelines (Project 118) including standardizing the reporting requirements on accuracy of the equipment, calibration, measurement methods, reporting of missing data, grid emission factor including details of options used, vintage of data, monitoring uncertainties, equations as per the methodology, selection of alternate scenario for selection of baseline, project design changes including defining temporary and permanent changes, additional monitoring requirements due to specific nature of project, detailed reporting requirements on the validation of investment analysis, in order to reduce the frequent reporting issues;

(f) In addition to the verification forms, to develop generic standardized spreadsheets for emission reduction calculations for some key sectors that cover the majority of projects (e.g. the use of biomass for electricity and heat generation, waste-heat recovery, landfill, methane recovery from waste water and animal waste management system (AWMS), etc.) to reduce the reporting and technical accuracy issues and also to facilitate reduction of transaction costs to enhance regional distribution of CDM projects and programmes;

(g) To request DOEs to further strengthen their quality check procedures, their technical review process and train their personnel on the issues where most of the reviews are triggered, particularly with regard to investment analysis and baseline identification (for requests for registration) and compliance of monitoring with the monitoring plan and assessment of data and calculation of greenhouse gas emission reductions (for requests for issuance);

(h) To continue to provide training and capacity-building for the DOEs focused on additionality including investment analysis, PoAs, application of sampling, compliance of monitoring with the monitoring plan, assessment of data and calculation of greenhouse gas emission reductions and post-registration changes;

(i) To continue to provide clarification on the interpretation of existing CDM requirements and guidance to the DOEs on day-to-day operational and other issues to facilitate and expedite validation and verification.

Appendix 1. Registration

1. Overview of DOE performance

1.1. DOE Performance Indicator (I_2 - Rate of requests for review)

1. A trend of I_2 Indicator (rate of requests for review) in the registration process for eligible DOEs and a trend of DOE-wise I_2 Indicator for major DOEs for the monitoring periods of 1 January 2010 to 31 December 2010, 1 January 2011 to 31 December 2011 and 1 January 2012 to 31 December 2012 is presented below.

Figure 1. I2 Indicator for the registration process

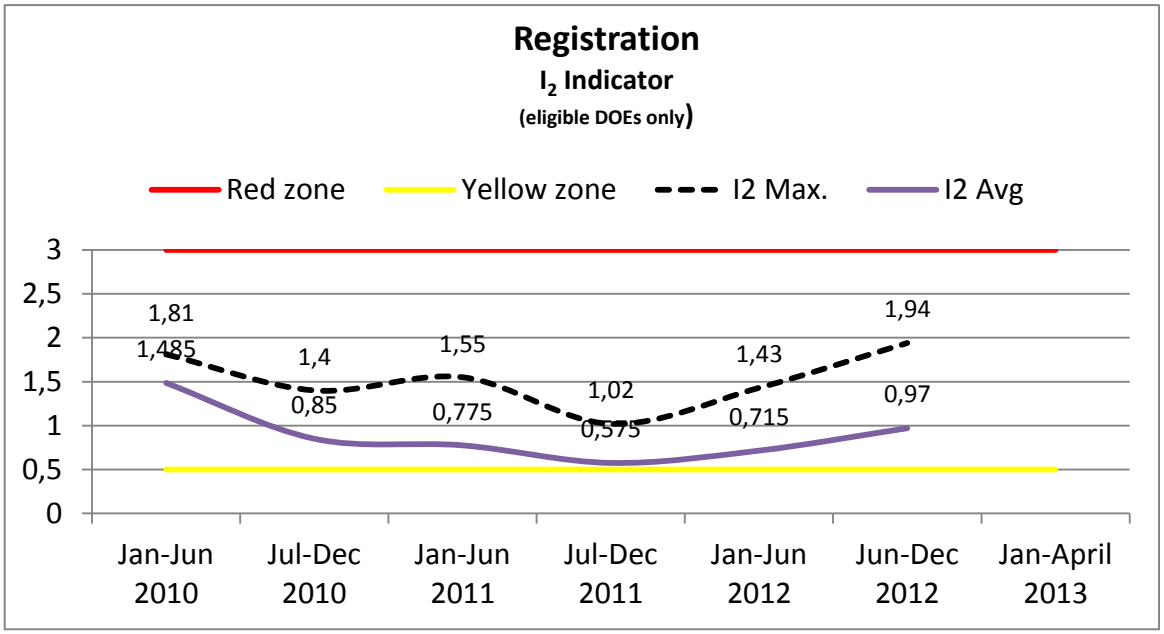
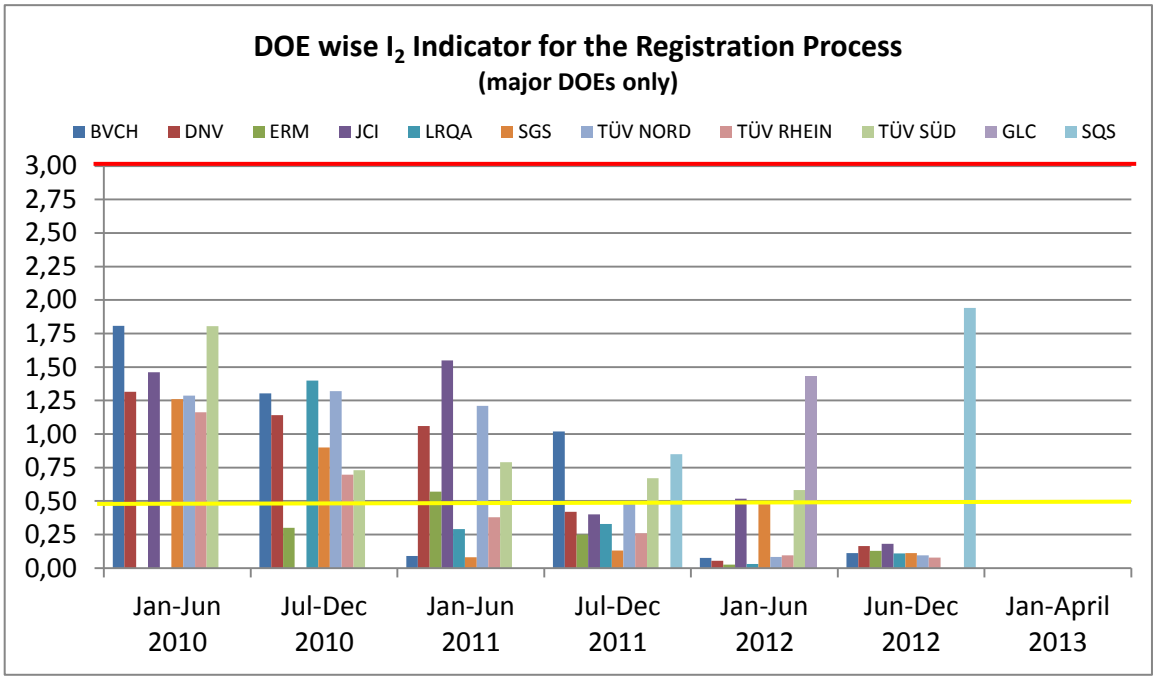


Figure 2. DOE-wise I_2 Indicator for the registration process



1.2. DOE Performance Indicator (I_2) – classification of issues raised

2. Overview graphics compiling the issues raised in registration requests for all DOEs (eligible for monitoring and non-eligible for monitoring) for the monitoring periods of 1 January 2010 to 31 December 2010, 1 January 2011 to 31 December 2011 and 1 January to 30 December 2012 are provided below.

Figure 3. Registration submissions

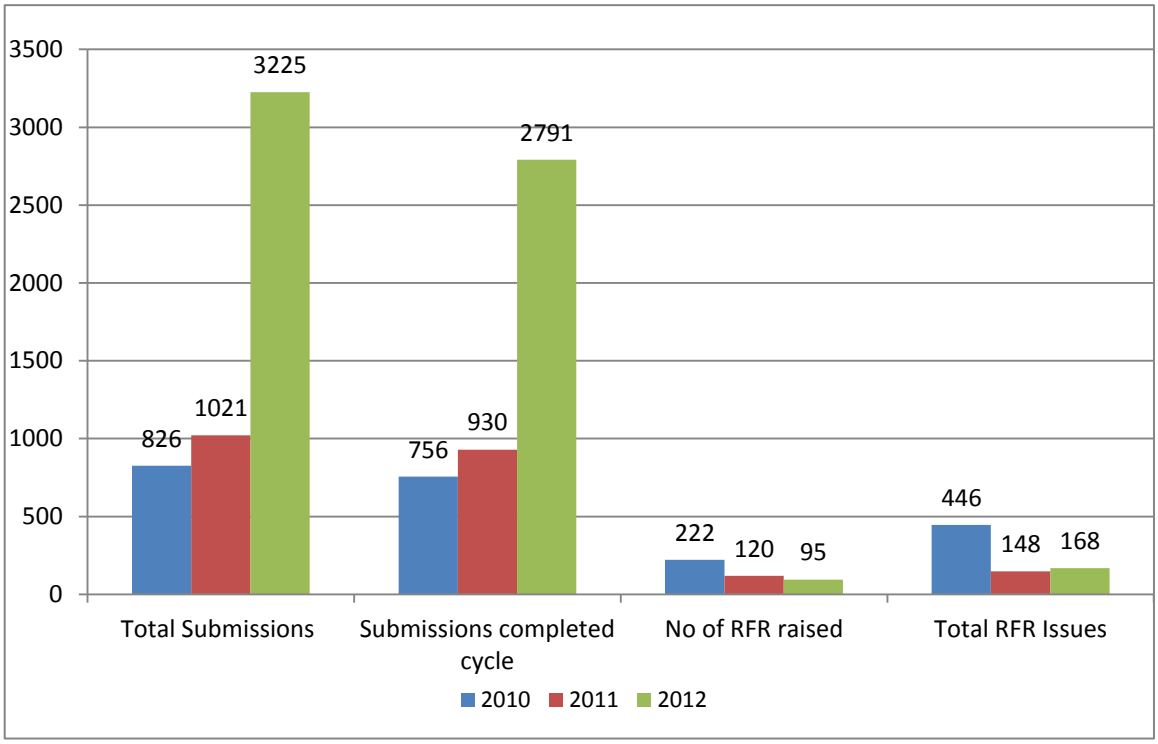
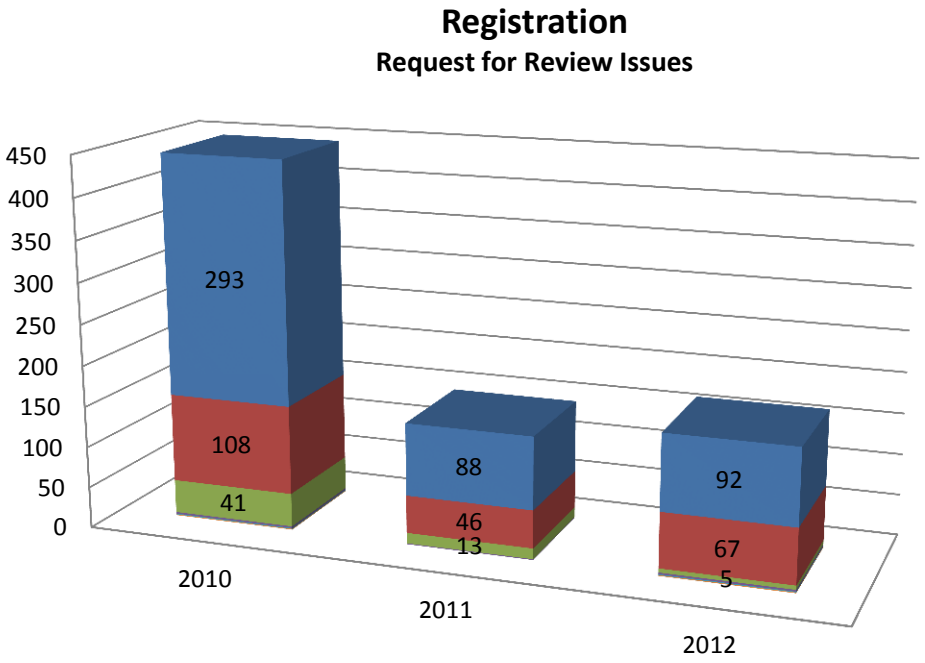


Figure 4. Registration – request for review issues – topic-wise



	2010	2011	2012
Additionality	293	88	92
Application of baseline methodology	108	46	67
Application of the monitoring methodology	41	13	5
Project description	2	1	2
Procedural and related requirements	1	0	1
Other CDM requirements	1	0	1

2. Analysis of the issues raised

3. This section provides a summary and analysis of the issues raised within the main components checked for registration submissions:

   (a) Additionality;

   (b) Application of the baseline methodology;

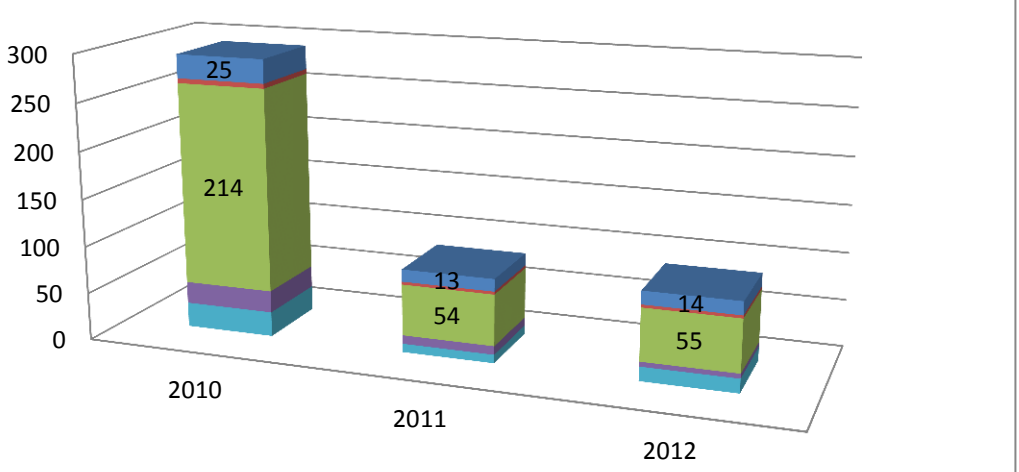
   (c) Application of the monitoring methodology.

4. It is to be noted that, for project description, only two issues in 2010, one issue in 2011 and two issues in 2012 were raised; consequently, no analysis was carried out in this regard.

2.1. Additionality

5. The following chart illustrates the distribution of the issues raised that are related to additionality.

Figure 5. Additionality



	2010	2011	2012
Prior consideration	25	13	14
Identification of alternatives	5	3	3
Investment analysis	214	54	55
Barrier analysis	23	9	5
Common practice analysis	26	9	15

2.1.1. Investment analysis

6. The analysis shows that the majority of the issues raised (73.0% in 2010, 61.4% in 2011 and 59.8% in 2012) were related to investment analysis, particularly with reference to paragraphs 110 to 114 of the VVM version 01.2; the Guidelines on the assessment of the investment analysis version 3 (EB 51, Annex 58), version 4 (EB 61, Annex 13) and version 5 (EB 62, Annex 5); and the Tool for the demonstration and assessment of additionality version 5.2 (EB 39, Annex 10) and version 6 (EB 65, Annex 21) and version 7 (EB 69 Annex 20).

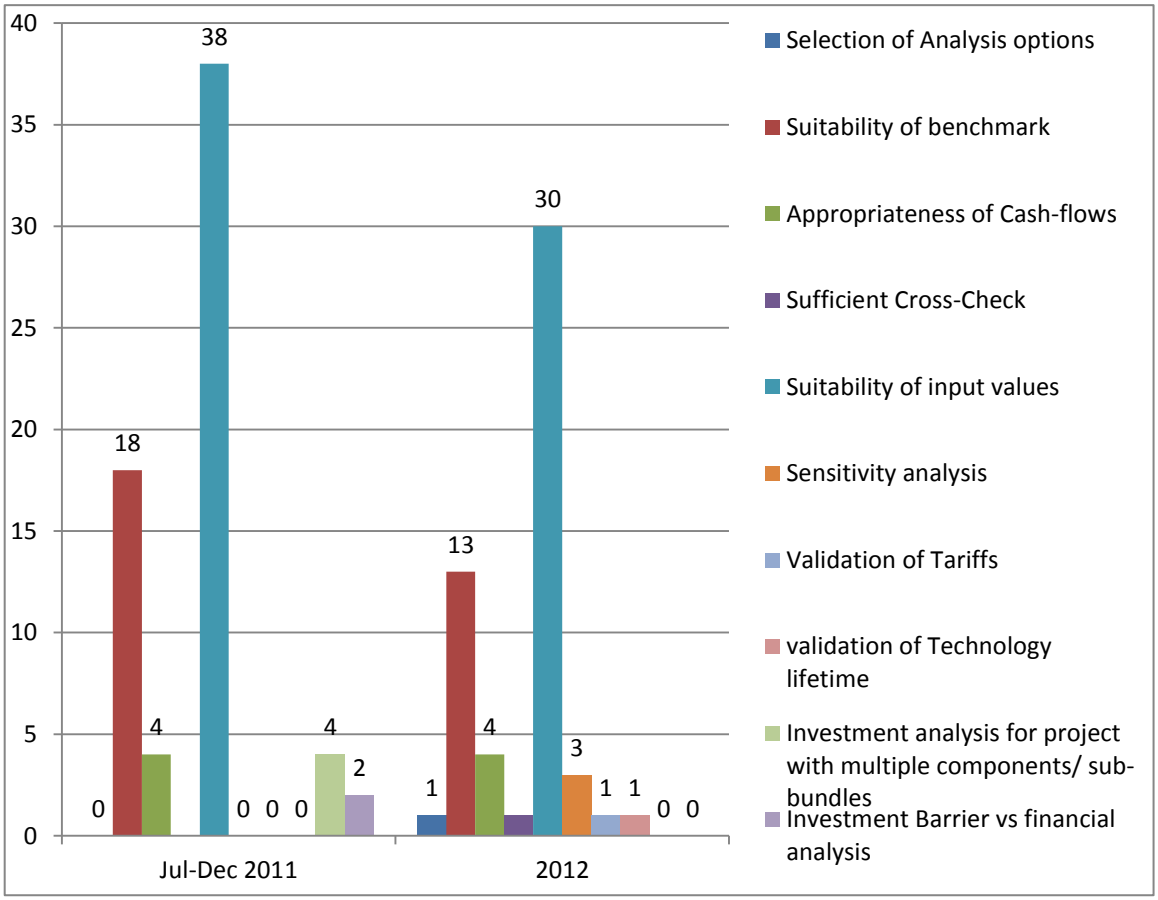
7. The number of requests for review and the number of issues raised on investment analysis have reduced significantly by about 75% from 2010 to 2011 (214 request for review issues raised in 2010 compared to 54 in 2011) to settle in 2012 at 55 issues, indicating a stable improvement in performance by the DOEs on investment analysis. The significant decrease and stabilization of issues raised on investment analysis may be attributed to various factors, among which the following certainly played a significant role: the revision of the Guidelines on the assessment of investment analysis in June 2011 introducing, inter alia, a new appendix with default values for the expected return on equity; the revision of the Guidelines on the demonstration of additionality of

small-scale project activities in September 2011 and July 2012 introducing and expanding respectively the positive list of automatically additional small-scale project activities; the Regional Calibration workshops in India and China in 2011 and India, China and Brazil in 2012 that focused on investment analysis adopting a case-study approach.

8. As concluded in the third and fourth analysis reports, these graphics show that, should the Board address the investment analysis requirements adequately, the rate of reviews will drop significantly. The year 2013 witnessed a continuing drastic drop of submissions of registration and issuance requests (from 354 in January 2013 to 104 in September 2013), with the submission of registration request still representing the biggest proportion (81.5%). In 2013, an increasing trend of submission for post-registration changes (PRC) has also been observed: a total of 245 PRC submissions between January and September 2013, of which 151 included changes to the registered PDD and the project design. Therefore, despite the drop in submissions of registration request in 2013, the Board may wish to address the additionality area as a high-level priority, considering that some issuance requests, particularly related to post-registration changes on change in project design, require application of the investment analysis. Likewise, the current approach of assessing additionality, of which the investment analysis represents the key element, is increasingly being criticized and may also be considered a priority.

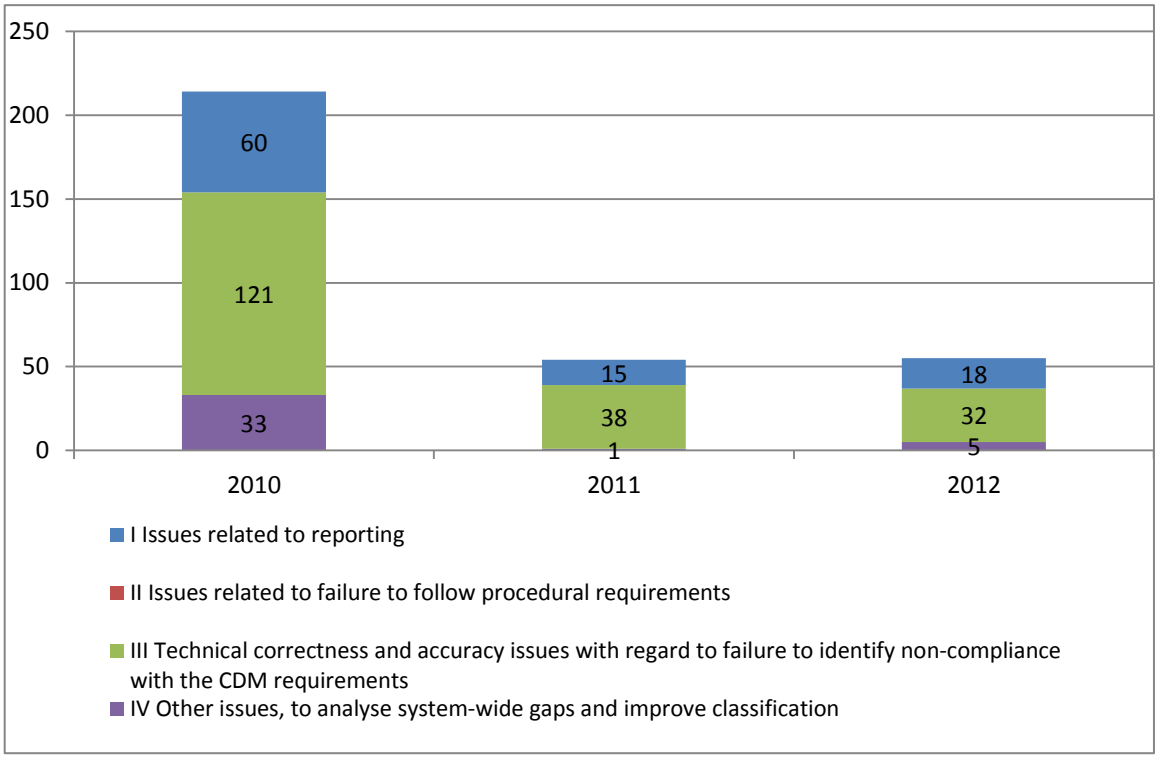
9. As shown in the histogram below, the majority of the issues raised on investment analysis during both 2011 (58%) and 2012 (56%) are related to the DOEs' lack of substantiation of the suitability of the validated input values to the investment analysis. The second major issue is the DOEs' lack of substantiation of the suitability of benchmark, which represented 27% and 24% of the issues raised on investment analysis in 2011 and 2012 respectively; the appropriateness of the cash-flow represented the third major issue, totalling 6% and 7% of the issues raised with respect to 2011 and 2012. It is worth observing that 2012 witnessed the reappearance of issues that were not raised in 2010, although this reappearance interested very few cases, i.e. proper justification on conclusion from the sensitivity analysis (three cases), the appropriateness of the selected analysis option (one case), and the suitability of the energy tariff (one case).

Figure 6. Request for review issues on investment analysis



10. According to the following graph, the issues raised on investment analysis during the years 2011 and 2012 are mostly due to: i) technical correctness and accuracy issues, including minor technical issues (70.4% in 2011 and 58.2% in 2012); and ii) reporting issues (27.8% in 2011 and 32.7% in 2012). These figures show that the severity of the issues has decreased in 2012, as the main percentage of issues are reporting issues, while the technical issues have dropped.

Figure 7. Investment analysis – categories of issue



11. The Board revised the "Guidelines on the assessment of the investment analysis" (version 05.0, EB 62, Annex 5) in 2011, which may need to be further reviewed for adequacy given that a significant number of request for review issues are still raised on investment analysis.

Table 1. Analysis of request for review issues and potential options for system-wide improvements – investment analysis

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
Issues related to reporting	33%	Suitability of benchmark	Suitability of vintage of data used to calculate the market return (Rm)		Guidelines on the assessment of investment analysis	-	1) Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on the validation of investment analysis 2) Develop generic standardized spreadsheets for investment analysis for some key sectors that	Revision of investment analysis guidelines. Regular updates of expected return on equity as per Appendix to the guidelines.		-
			Suitability of chosen benchmark value for the project sector			Internal training, strengthening of technical review, careful study of precedencies in the CDM pipeline		-		

Request for review issues on investment analysis (Jan-Dec 2012)			Revision of original validation report	Existing measures	Recommended actions				
					Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
	Appropriateness of Cash-flows	Frequency of application of escalation different between tariff (every 3 years) and O&M/biomass cost (annually)				cover majority of projects (e.g. for renewable energy projects such as wind, hydro-power, etc.) to reduce the reporting issues	-		
	Suitability of input values	Appropriateness of some project costs apparently already borne in the pre-project scenario (LFG collection system and maintenance)	Additional information provided by the DOE/PP within the VR/PDD	Guidelines on the assessment of investment analysis	Strengthen quality check procedures, technical review process and train their personnel on assessing suitability of the input values to the investment analysis and suitability of benchmark and careful study of precedencies in the CDM pipeline		-		
		Investment analysis considering opportunity cost of biomass which is sold in absence of the project					-		
		Upstream steam supplied only to project activity or also to other power plants (possible reduction of steam cost)					-		
		Breakdown and validation of O&M cost and justification on the steam price					-		
		Insufficient validation of how total energy output (electricity and steam) have been estimated, and use of the output energy					-		
		Insufficient validation of how total energy output have been estimated					-		

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
			Insufficient validation of "saved-energy charges" and fixed electricity tariff					-		
			Insufficient validation of assumed tariff from FSR versus PPA value					-		
			Suitability of the assumed tariff vs highest historical tariff					-		
			Insufficient validation of total investment, operational cost, passenger projection					-		
			Insufficient validation of several input values: interest when calculating income tax; suitability of values at the time of the investment decision (gas price, O&M cost)					-		
		Sensitivity analysis	Unlikeliness of total investment to decrease and provision of evidence			-		-		
		Technology lifetime	Validation of the remaining lifetime of the existing system as per "Tool to determine the remaining lifetime of equipment			-		-		

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
Minor Technical correctness and accuracy issues	33%	Suitability of benchmark	Insufficient validation of WACC benchmark using CAPM – calculation of cost of equity and debt, data vintage for calculation of input values (risk free rate, beta value, market return), calculation not consistent – nominal vs real values	Benchmark revised by DOE	Investment analysis guidelines do not provide guidance on WACC by CAPM, including beta value	Apply standard method /practice in the host country for the sector and validation based on relevant financial expertise	Provide new guidance in the investment analysis guidelines on WACC benchmark using CAPM	Revision of investment analysis guidelines. Regular updates of expected RoE as per Appendix to the guidelines.	-	1) Regional Calibration Workshops in 2014 to include a focus on the Investment analysis, through case study approach, particularly on validation of input values and suitability of benchm
			Insufficient validation of WACC benchmark using CAPM – calculation of cost of equity and debt, data vintage for calculation of input values (risk free rate, beta value, market return)						-	
			Insufficient validation of beta value						-	
			Suitability of inflation rate applied to default expected return on equity for sub-bundle 1, and suitability of expected return on equity using cost of equity calculated by CAPM for sub-bundle 2		Guidelines on the assessment of investment analysis	Strengthen quality check procedures, technical review process and train their personnel on assessing suitability of	-	-	-	
			Suitability of benchmark based on Myanmar lending commercial rate while electricity is exported to				-	-	-	

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
			China			the input values to the investment analysis and suitability of benchmark and careful study of precedencies in the CDM pipeline				ark, validation of WACC benchmarks
		Appropriateness of cash-flows	Application of escalation only to project cost while fixed tariff is used vs inflation applied to RoE for benchmark			-	1) Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on the validation of Investment	-	-	
			Inconsistencies in NPV figures in the VR; and validation of risk rate as NPV is identical in Excel spreadsheet with or without it			-		-	-	
		Cross-check	Insufficient information about similar project used for the DOE cross-checking of the input values to the investment analysis and how the DOE concluded the project activity is comparable		VVM 1.2	-		-	-	

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
		Suitability of input values	Validity of input values at the time of the investment decision		Guidelines on the assessment of investment analysis	Strengthen quality check procedures, technical review process and train their personnel on assessing suitability of the input values to the investment analysis and suitability of benchmark and careful study of precedencies in the CDM pipeline	Analysis 2) Develop generic standardized spreadsheets for investment analysis for some key sectors that cover the majority of projects (e.g. for renewable energy projects such as wind, hydro-power, etc.) to reduce the reporting issues	-	-	
			Applicability of a cost to the coke oven gas (waste gas); relationship between PP and gas provider					-	-	
			Insufficient validation of non-applicability of feed-in tariff					-	-	
			Insufficient validation of investment cost, which is higher than that of similar projects in the region					-	-	
			Insufficient validation of total investment, operational cost, passenger projection					-	-	
			Insufficient validation of several input values: discount rate, total investment, operational cost, revenue, risk rate, cost of trial run					-	-	
			Suitability of O&M cost validated against US based evidence					-	-	
			Insufficient validation of implementation vs. cash flow, tariff, preferential tax policies					-	-	
		Sensitivity analysis	Insufficient validation of non-likelihood of 10% increase of project revenue that crosses			-		-	-	

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
			12% benchmark							
		Validation of tariff	Applicability of the tariff to each project in the bundle			-		-	-	
Technical correctness and accuracy issues with regard to failure to identify non-compliance	24%	Selection of analysis options	Suitability of simple cost analysis considering saving/revenues from the captive use of steam			-		-	-	
		Suitability of benchmark	Insufficient validation of WACC benchmark using CAPM – calculation of cost of equity and debt, data vintage for calculation of input values (risk free rate, beta value, market return)	Benchmark revised by DOE	Investment analysis guidelines do not provide guidance on WACC by CAPM including beta value	Apply standard method /practice in the host country for the sector and validation based on relevant financial expertise	Provide new guidance in the investment analysis guidelines on WACC benchmark using CAPM	Revision of investment analysis guidelines. Regular updates of expected RoE as per Appendix to the guidelines.	-	
			Insufficient validation of WACC benchmark using CAPM – calculation of cost of equity and debt, data vintage for calculation of input values (risk free rate, beta value, market return)						-	
			Insufficient validation of WACC benchmark using CAPM – calculation of cost of equity and debt, use of corporate bond and of debt-total capital ratio of two companies listed in the stock exchange						-	
			Suitability of chosen		Guidelines	Internal	-	-	-	

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
			benchmark value for the project sector		on the assessment of investment analysis	training, strengthening of technical review, careful study of precedencies in the CDM pipeline				
		Appropriateness of Cash-flows	Not clear whether raw material savings due to the project implementation have been considered in the investment analysis			-	1) Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on the validation of investment analysis 2) Develop generic	-	-	
		Suitability of input values	Suitability of project cost for a 8MW electricity generated capacity considering that 700kW capacity is already provided in the baseline scenario			Strengthen quality check procedures, technical review process and train their personnel on assessing suitability of the input values to		-	-	
			Suitability of CMM price in comparison with similar projects, and of VAT refund/tax exemption		Cross-checking with existing CDM projects not ruled in the Guidelines on			-	-	

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
					investment analysis but used as a secondary check; comparability of size, technology type, region/country, investment climate, etc.	the investment analysis and suitability of benchmark and careful study of precedencies in the CDM pipeline	standardized spreadsheets for investment analysis for some key sectors that cover the majority of projects (e.g. for renewable energy projects such as wind, hydro-power, etc.) to reduce the reporting issues 3) Ensure that the DOE validation teams have sufficient competence and skills to undertake validation of investment analysis and continue to regularly train			
			Suitability of CMM price in comparison with similar projects, and of VAT refund/tax exemption		Guidelines on the assessment of investment analysis			-	-	
			Insufficient validation of fuel cost, capex, and required volume of fuel					-	-	
			Insufficient validation of fuel cost, capex, and required volume of fuel					-	-	
			Validity of input values at the time of the investment decision					-	-	

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
							their staff on validation of investment analysis, particularly on the validation of input values and benchmark including WACC.			
Ambiguity of interpretation of requirements of methodology/ guidance	9%	Suitability of benchmark	Insufficient validation of beta value		Investment analysis guidelines do not provide guidance on WACC by CAPM, including beta value	Apply standard method /practice in the host country for the sector and validation based on relevant financial expertise	Provide new guidance in the investment analysis guidelines on WACC benchmark using CAPM	Revision of investment analysis guidelines. Regular updates of expected RoE as per Appendix to the guidelines.	-	
		Suitability of input values	Insufficient validation of the tariff scheme applied by the project (renewable energy certificate vs preferential tariff scheme)		Guidelines on the assessment of investment analysis	-	Provide guidelines for the application of E- policy on investment analysis	-	-	

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/ guidance	Revision of existing rules	Revision of existing forms	Training/ capacity-building
			Insufficient validation of non-applicability of feed-in tariff			Apply standard method /practice in the host country for the sector and validation based on relevant financial expertise	-	-	-	
			Suitability of transmission and distribution fee				-	-	-	
			Suitability of assumed price and escalation of biomass residues produced by the same PP				-	-	-	

12. The above table mentions the action plan based on issues raised on investment analysis in 2012 and recommendation to further reduce the request for review issues on investment analysis. The following actions are proposed:

    (a) Clarify or revise the existing Guidelines on the assessment of investment analysis to address the choice of suitable data vintage for determination of input values for WACC (risk free rate, beta value, market return) on WACC benchmark using CAPM, and have regular updates of the default RoE values as per the Appendix to the investment analysis guidelines;

    (b) Develop guidelines and/or validation templates which include specific detailed reporting requirements on the validation of investment analysis to reduce the reporting issues (Project 118);

    (c) Develop generic standardized spreadsheets for investment analysis for some key sectors that cover the majority of projects (e.g. for renewable energy projects such as wind, hydro-power, etc.) to reduce the reporting issues;

    (d) Ensure that the DOE validation teams have sufficient competence and skills to undertake validation of investment analysis and continue to regularly train their staff on validation of investment analysis, particularly on the validation of input values and benchmark including WACC;

    (e) Provide guidelines for the application of E- policy on investment analysis;

    (f) Conduct training on investment analysis for DOEs. Such training could also be part of the Regional Calibration Workshops in 2014 with a focus on the investment analysis applying a case-study approach, particularly on validation of input values and suitability of benchmark, validation of WACC benchmarks.

13. The Board's work plan 2013 (Annex 01, Annotated agenda, EB 75) has mandated the secretariat to further simplify and streamline additionality approaches for projects and PoAs in underrepresented regions while ensuring environmental integrity (Project 164). The secretariat will continue investigating the reasons why DOEs continue to face difficulties with the validation of investment analysis.

2.1.2. Prior consideration of the CDM

14. A total of 8.5% in 2010, 14.8% in 2011 and 15.2% in 2012 of the issues raised in the additionality category were related to prior consideration. The issues raised in 2012 refer to paragraphs 98 to 104 of the VVM 1.2, the Glossary of CDM terms and the "Guidelines on the demonstration and assessment of prior consideration of the CDM" version 3, EB 49, Annex 22 and version 4, EB 62, Annex 13. The issues raised are related to the project start date, final investment decision, and continuous and real actions.

15. The Board in July 2011 revised the "Guidelines on the demonstration and assessment of prior consideration of the CDM" (EB 62, Annex 13), focusing on the validation of real and continuing actions. The totality of the issues raised on prior consideration in 2012 are of a reporting nature, mainly due to insufficient validation of the identified start date of the project activities and the evidence provided in support. The majority of the requests for review raised on prior consideration have been successfully closed upon revision of validation report by the DOE with inclusion of additional information on the validation of the project start date.

16. The prior CDM consideration is not perceived as an issue that may require the introduction of new rules and guidance, or the revision of existing rules. Specific issues that may arise on prior CDM consideration may be addressed during DOE Regional Calibration Workshops and/or DOE teleconferences.

2.1.3. Common practice analysis

17. A total of 8.9% in 2010, 10.2% in 2011 and 16.3% in 2012 of the issues raised in the additionality category are related to common practice analysis, especially to paragraphs 119, 120, 121 of the VVM version 1.2, and the “Guidance on common practice” version 01.0 (EB 63, Annex 12).

18. In 2011, the Board at its sixty-fifth meeting revised the additionality tool (version 6, EB 65, Annex 21) to include requirements from the guidelines on common practice to address the issue raised by stakeholders on the new approach and inconsistency due to change of application from being voluntary to mandatory and other concerns on application and interpretation. The tool was further amended in September 2012 (version 6.1.0, EB 69, Annex 20) and revised in November 2012 (version 7.0.0, EB 70, Annex 8) to include reference to the latest approved “Guidelines on additionality of first-of-its-kind project activities” (version 02.0, EB 69 Annex 07) and the “Guidelines on common practice” (version 02.0, EB 69 Annex 08). The comparative increase observed with regard to requests for review on common practice and first-of-its-kind in 2012 may be attributed to the transition time that required adjusting to the new mandatory approach stipulated in the revised additionality tool.

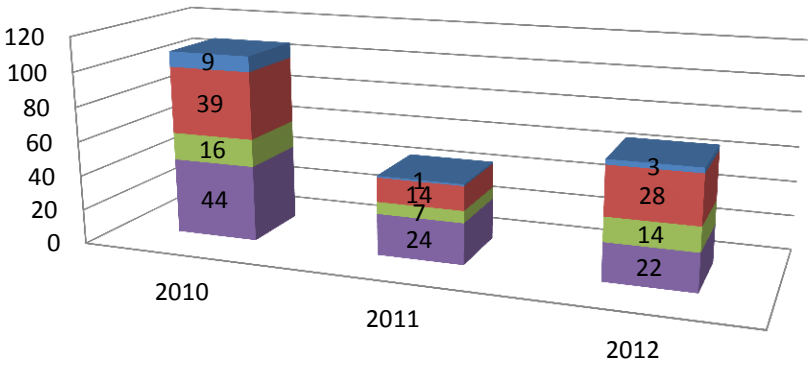
19. Nevertheless, it is observed that the majority of the issues raised on common practice in 2012 are of a reporting nature, mainly due to insufficient validation of the determination of the different technologies to be considered by the analysis and the evidence provided in support. The majority of the requests for review raised on common practice have been successfully closed upon revision of validation report by the DOE with inclusion of additional information on the validation of the different technologies and the reliability of the evidence used.

20. The common practice analysis is not perceived as an issue that may require the introduction of new rules and guidance, or the revision of existing rules. Specific issues that may arise on common practice may be addressed during DOE Regional Calibration Workshops and/or DOE teleconferences.

2.2. Application of baseline methodology

21. The proportion of issues raised on the application of baseline methodology show an increasing trend from 24.2% in 2010 to 31.1% in 2011 and 33.3% in 2012, particularly with reference to paragraphs 67 to 74 and 81 to 93 of the VVM version 01.2, the Tool to calculate the emission factor for an electricity system version 2.2.1, and specific methodological issues.

Figure 8. Application of baseline methodology

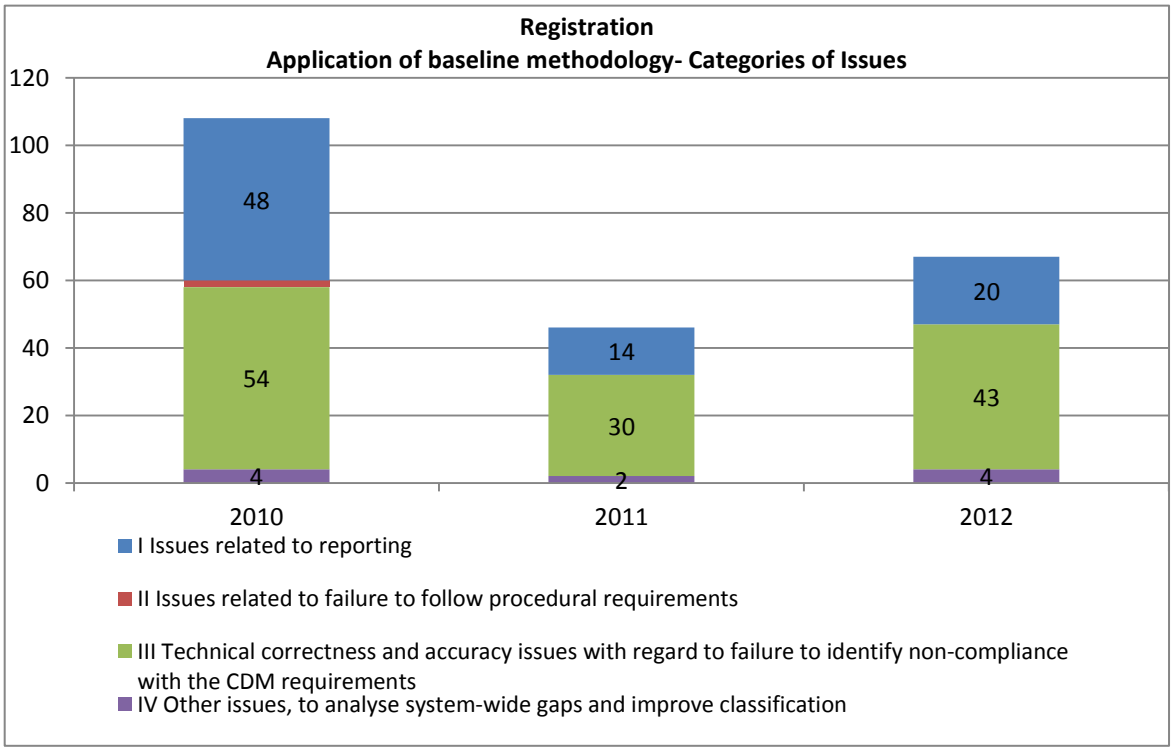


	2010	2011	2012
Project boundary	9	1	3
Baseline identification	39	14	28
Compliance with applicability conditions	16	7	14
Algorithms and/or formulae to determine emission reductions	44	24	22

22. The chart above illustrates the distribution of the issues raised that are related to the application of the baseline methodology. The number of requests for review and the number of issues raised decreased significantly by about 57% from 2010 to 2011 (108 request for review issues raised in 2010 compared to 46 in 2011), rising again to 67 in 2012, indicating an decline in DOE performance. While the decrease in issues raised in this sub-category in 2011 might be linked to the Regional Calibration Workshops held in 2010 and more clarity provided by the revision of existing requirements, the rise in the number of issue in 2012 may be explained with the huge workload of validations the DOEs had to manage in a limited time in the second half of 2012, which led to reduced quality of validations and their reports.

23. Among the issues raised in this category, 41% in 2010, 52% in 2011 and 33% in 2012 are related to algorithms and/or formulae to determine emission reductions; and 36% in 2010, 30% in 2011 and 42% in 2012 are related to baseline identification. A total of 15% of the issues in 2010 and in 2011 and 21% in 2012 were related to compliance with applicability conditions on the application of the baseline methodology. In comparison with previous years, in 2012, while the proportion of issues raised on baseline identification increased, the proportion of issues related to algorithms and/or formulae to determine emission reductions clearly declined.

Figure 9. Application of baseline methodology – categories of issue

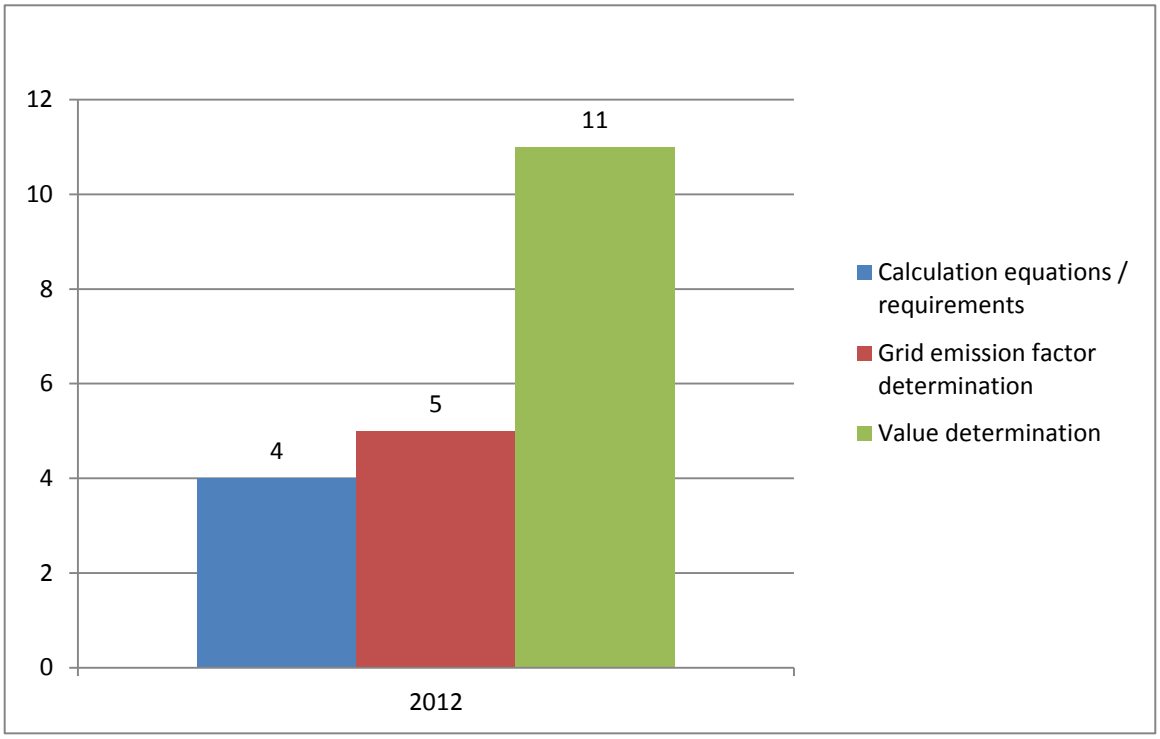


24. According to the graph above, the issues raised on baseline methodology during the years 2011 and 2012 are mostly due to: i) technical correctness and accuracy issues (65.2% in 2011 and 64.2% in 2012); ii) reporting issues (30.4% in 2011 and 29.9% in 2012); and iii) other issues due to ambiguity of interpretation of the requirement (4.3% in 2011 and 6.0% in 2012). The figures show that the incidence of the first two issues was stable in the 2011–2012 biennium, while a noticeable increase of issues due to ambiguity of requirement interpretation is observed.

2.2.1. Algorithms and/or formulae for the calculation of emission reductions

25. As depicted in the graph below, the issues on algorithms and/or formulae to determine emission reductions raised in 2012 are related to the justification of the choice of data and parameters used in the equations (55%), the calculation of the grid emission factor (25%), and the correct application of equations and calculation requirements (20%).

Figure 10. Requests for review issues on algorithms and/or formulae to determine emission reductions



26. A visible improvement of the situation is observed compared to the previous year; the percentage of issues raised on algorithms and/or formulae dropped from 52% in 2011 to 33% in 2012; an improvement that may have originated from the implementation of the PCP, PS, and VVS started from 1 May 2012 and of the work plan on top-down improvement of the methodologies as well as from the development of standardized templates and spreadsheets on calculation of grid emission factors (available on the UNFCCC website).

27. It is expected that such a decreasing trend will be maintained in future in light of the progress in the implementation of the work plan on top-down improvement of the methodologies, the on-going work on the development of the grid emission factors in many countries, and a broader development and adoption of standardized baselines in addition to those already approved by the Board at its seventy-third meeting.

28. The Board may also wish to consider the following actions in order to further improve the situation in future:

    (a) Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on grid emission factor including details of options used, vintage of data, equations as per the methodology (Project 118); and

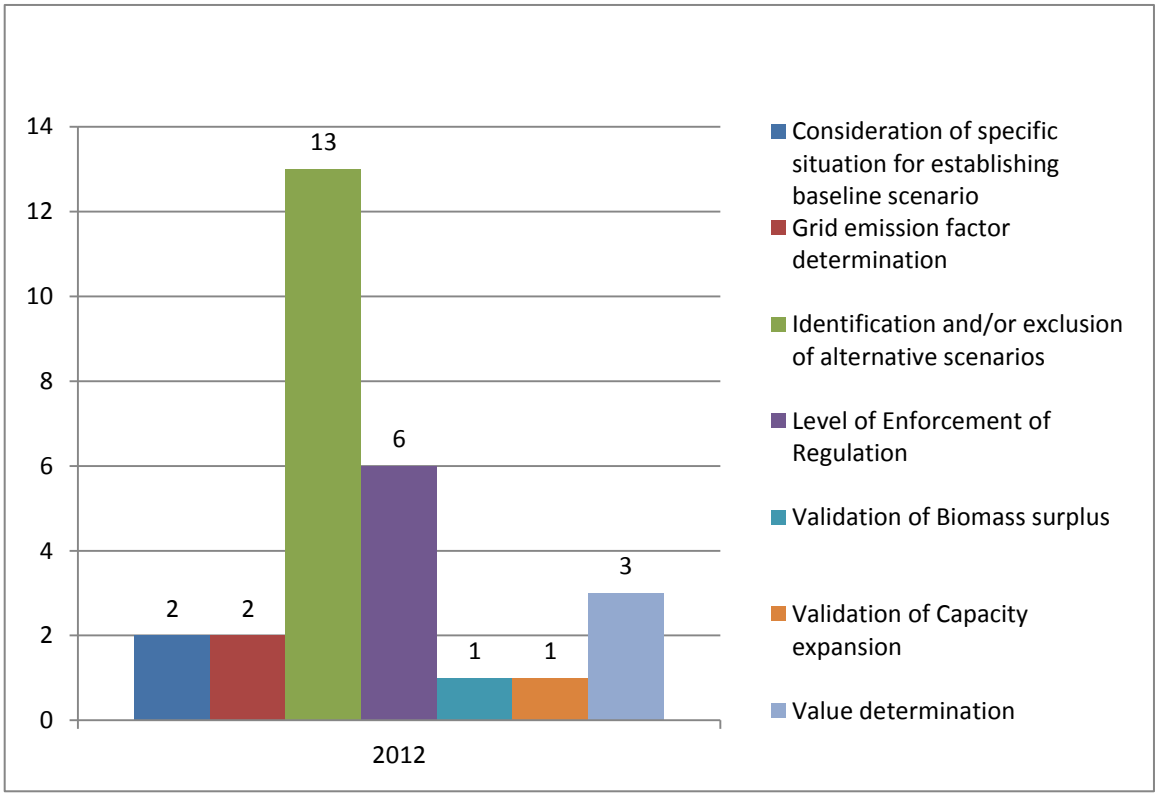
    (b) Develop generic standardized spreadsheets for emission reduction calculations for some key sectors that cover the majority of projects (e.g. for biomass electricity and heat generation, waste-heat recovery, landfill, methane recovery from waste water and AWMS, etc.) to reduce the reporting and technical accuracy issues.

29. These proposed measures are likely to reduce the reporting and technical accuracy issues and also contribute to a reduction in transaction costs for the development of PDDs and emission reduction calculations, particularly in least developed countries.

2.2.2. Baseline identification

30. As shown in the histogram below, most of the issues identified in this category in 2012 are related to the justification for the inclusion/exclusion of identified alternative scenarios (46%), the determination of the level of enforcement of regulations affecting the identification of the baseline scenario (21%) and the determination of baseline values (e.g. efficiency of baseline technology, etc.) (11%).

Figure 11. Requests for review issues on baseline identification



31. With regard to the issues raised on baseline identification, more issues have been raised compared to the previous year; the percentage of issues raised on baseline identification increased from 30% in 2011 to 42% in 2012.

32. The Board may also wish to consider the following actions in order to improve the situation in future:

(a) Work on simplification and streamlining of methodologies and tools (Project 120);

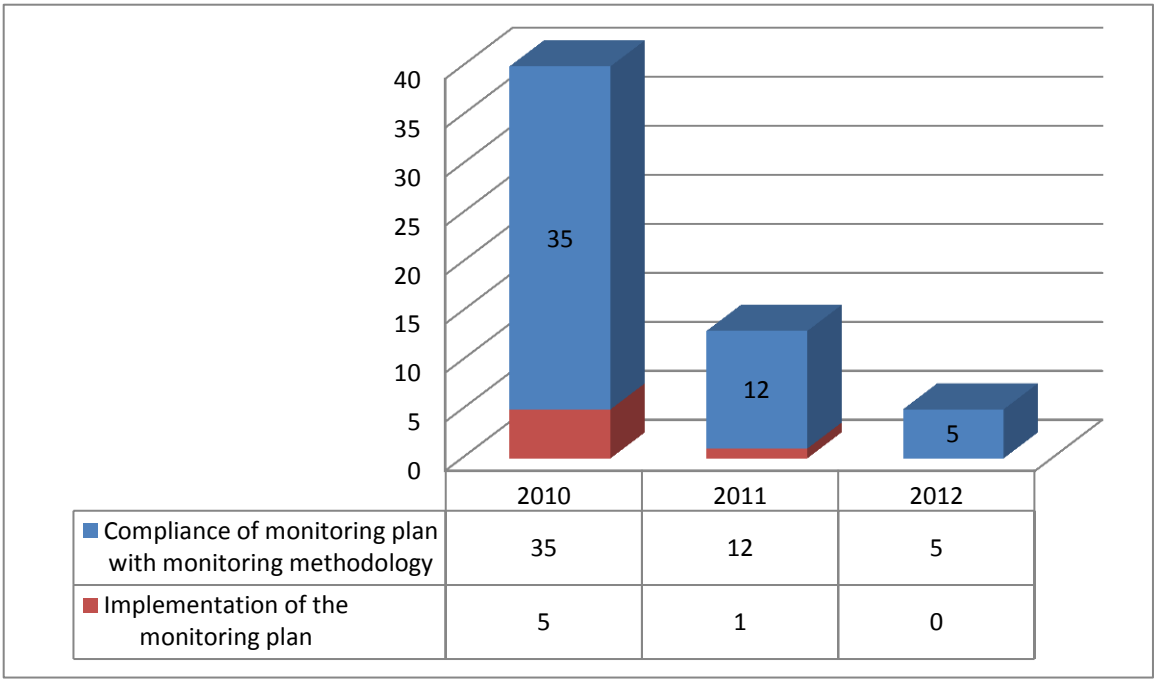
(b) Develop guidelines for completing PDD and Standardized Validation Templates which shall include specific detailed reporting requirements on grid emission factor including details of options used, vintage of data, equations as per the methodology (Project 118);

(c) Define a step-wise approach to determine the level of enforcement of a national regulation mandating methane flaring and ventilation (LFG and CMM emissions), including type of valid and reliable evidence/data/sources required.

2.3. Application of the monitoring methodology

33. The issues related to application of the monitoring methodology represent a small portion of the total review issues raised on submission for requests of registration. In this regard, a decreasing trend is observed in the 2010–2102 triennium with the proportion of issues raised dropping from 9.2% in 2010 to 3% in 2012. The graphic below illustrates the distribution of the issues raised and related to the application of the monitoring methodology.

Figure 12. Application of the monitoring methodology



34. The vast majority of the issues identified within the area of the application of monitoring methodology are related to the compliance of the monitoring plan with monitoring methodology (88% in 2010, 92% in 2011 and 100% in 2012).

35. The issues raised are mainly due to missing monitoring parameters in the list of parameters to be monitored and an unclear description of monitoring and ex post calculation approaches. However, all issues raised in 2012 are of a reporting nature and have been successfully resolved by the DOEs and the PPs by proper revision of the validation report and the PDD.

36. The drastic decrease of issues raised on the application of monitoring methodology in 2012 (only five issues out of a total of 168) is evidence of the improvement of the performance of the DOEs in this area. The implementation of the PCP, PS and VVS that started from 1 May 2012, the work plan on top-down improvement of methodologies and tools have a positive impact. Future reporting periods are also expected to capture the impact of the implementation of standardized baselines on the Indicator I_2.

3. Other classification and analysis of the issues

37. This section provides a summary and analysis of the issues raised within the main components checked for registration submissions on:

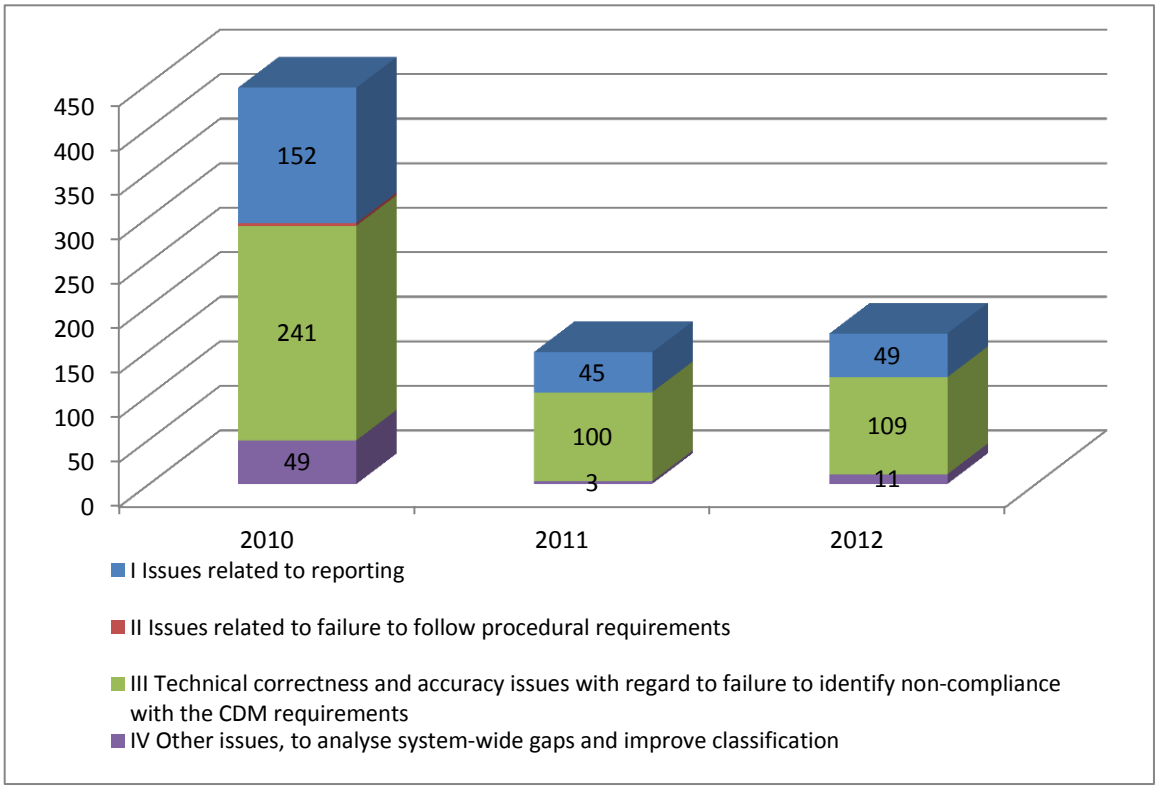
(a) Categories of issues; and

(b) Document-wise distribution of issues.

3.1. Categories of issues

38. The current report presents the issues identified classified by category. The graphics below illustrate the distribution of the issues raised for registration cases.

Figure 13. Registration 2010–2012 – Categories of issues



39. Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements and issues related to reporting are preponderant in 2012, representing 64.5% and 29.0% respectively. A small decreasing trend is observed during the period 2011–2012:

(a) The percentage of issues related to technical correctness and accuracy slightly decreased from 67.6% in 2011 to 64.5% in 2012; and

(b) The percentage of issues related to reporting slightly decreased from 30.4% in 2011 to 29.0% in 2012.

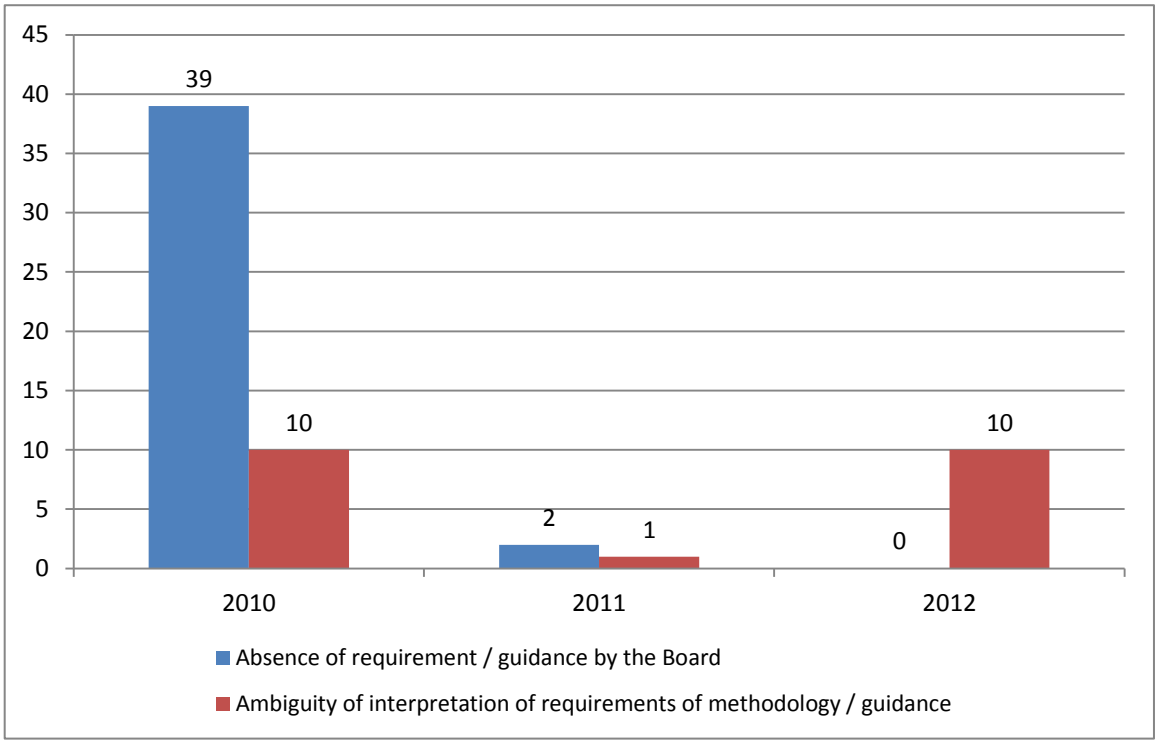
40. The CDM MAP 2013–2014 work plan has mandated the secretariat to develop standardized templates for validation and verification which is likely to reduce reporting issues.

3.1.1. Other issues, to analyse system-wide gaps and improve classification

41. As depicted in the histogram below, a noticeable increase of the issues raised on other issues, to analyse system-wide gaps and improve classification has been observed, which grew from the 2.0% of 2011 to the 6.5% of 2012.

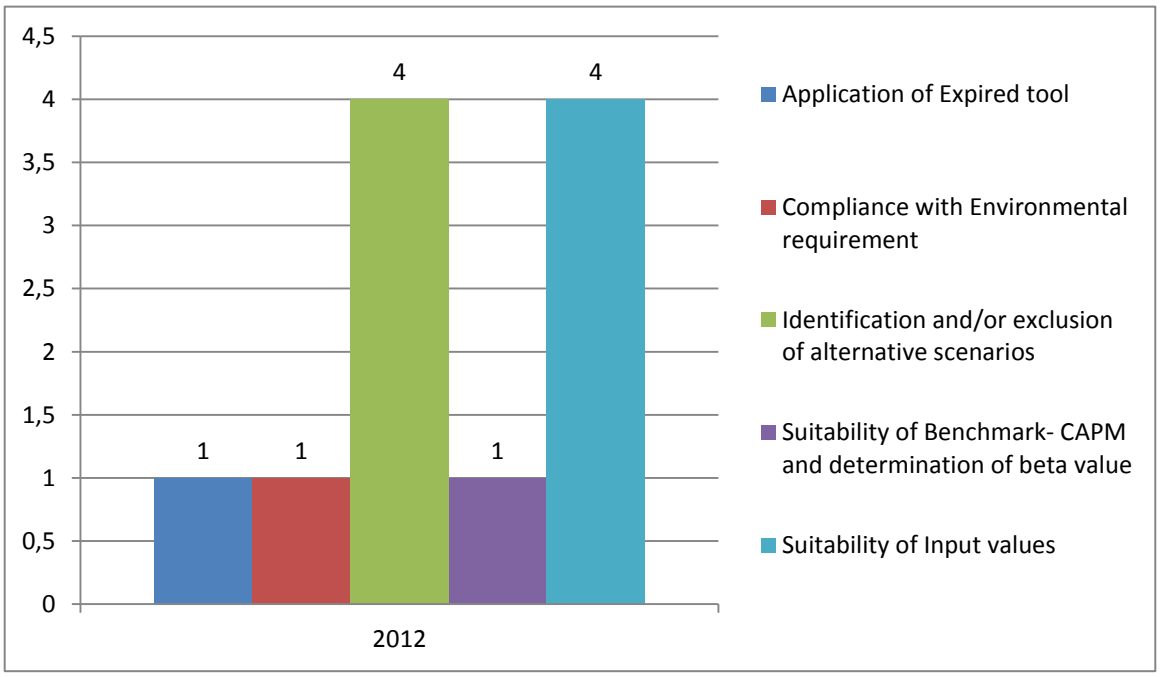
42. While no issues have been raised in 2012 due to the absence of requirements/guidance by the Board compared to the 66.7% share registered in 2011, a significant increase of issues due to the ambiguity of interpretation of requirements of methodologies/guidance is observed from 2011 (33.3%, one issue) to 2012 (100%, 10 issues).

Figure 14. Other issues, to analyse system-wide gaps and improve classification



43. As shown in the graph below, the majority of the issues raised in 2012 refer to ambiguity about the identification and/or exclusion of alternative scenarios (36.4%, four issues) and the suitability of input values (36.4%, four issues). One issue (9.1%) was raised on suitability of benchmark, application of expired tool and compliance with environmental requirement.

Figure 15. Ambiguity of interpretation of requirements of methodology/guidance



44. The table below mentions the action plan based on issues raised on Other issues, to analyse system-wide gaps and improve classification in 2012 and recommendation to further reduce the request for review issues in this regard. The following actions are proposed:

(a) Provide guidance in the investment analysis guidelines on WACC benchmark using CAPM; and

(b) Provide guidelines for the application of E- policy on investment analysis.

Table 2. Analysis of request for review issues and potential options for system-wide improvements – ambiguity of interpretation of requirements of regulatory documents

Request for review Issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training / capacity - building
Ambiguity of interpretation of requirements of methodology/guidance	7 %	Suitability of benchmark	Insufficient validation of beta value		Investment analysis guidelines do not provide guidance on WACC by CAPM, including beta value	Apply standard method/practice in the host country for the sector and validation based on relevant financial expertise	Provide new guidance in the investment analysis guidelines on WACC benchmark using CAPM	Revision of investment analysis guidelines. Regular updates of expected RoE as per Appendix to the guidelines	-	-
		Compliance with environmental requirement	Validation of compliance with requirement of monitoring of annual minimum flow discharge			Apply standard method/practice based on relevant expertise	-	-	-	-

Request for review Issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training / capacity - building
		Application of expired tool	"Tool to determine project emissions from flaring gases containing methane" version 1 expired before submission of registration request		AMS-III.H	Check the version of various tools/documents	-	-	-	-
		Identification and/or exclusion of alternative scenarios	Investment comparison analysis not applied to plausible baseline scenarios as required by methodology		ACM0016	Strengthen quality check procedures, technical review process and train their personnel	-	-	-	-
		Identification and/or exclusion of alternative scenarios	Investment comparison analysis not applied to plausible baseline scenarios as required by methodology		ACM0016		-	-	-	-

Request for review Issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training / capacity - building
		Identification and/or exclusion of alternative scenarios	Biomass-based cogeneration plant is excluded, considering a cost for rice husk, which appears to be freely available in the pre-project scenario. Opportunity cost		AMS-I.C		-	-	-	-
		Identification and/or exclusion of alternative scenarios	Investment comparison analysis not applied to plausible baseline scenarios as required by methodology		ACM0016		-	-	-	-
		Suitability of input values	Insufficient validation of the tariff scheme applied by the project (renewable energy certificate versus preferential tariff scheme)		Guidelines on the assessment of investment analysis	-	Provide guidelines for the application of E- policy on investment analysis	-	-	-
			Insufficient validation of non-applicability of feed-in tariff			Apply standard method/practice in the host country for the sector	-	-	-	-
			Suitability of transmission and distribution fee				-	-	-	-

Request for review Issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Recommended actions				
						Measures by DOE	Introduce new rules/guidance	Revision of existing rules	Revision of existing forms	Training / capacity-building
			Suitability of assumed price and escalation of biomass residues produced by the same PP			and validation based on relevant financial expertise	-	-	-	-

3.2. Document-wise distribution of issues

45. The graphics below illustrate the distribution of the issues raised in the 4th monitoring period (July to December 2011, data as of April to September 2012) and the 5th and 6th monitoring periods (January to December 2012, data as of March 2013) with respect to various CDM documents. The majority of the issues raised are related to compliance with the requirements of the VVM in both 2011 (62%) and 2012 (66%).

Figure 16. Registration – request for review issues – CDM documents (Jan–Dec 2012)

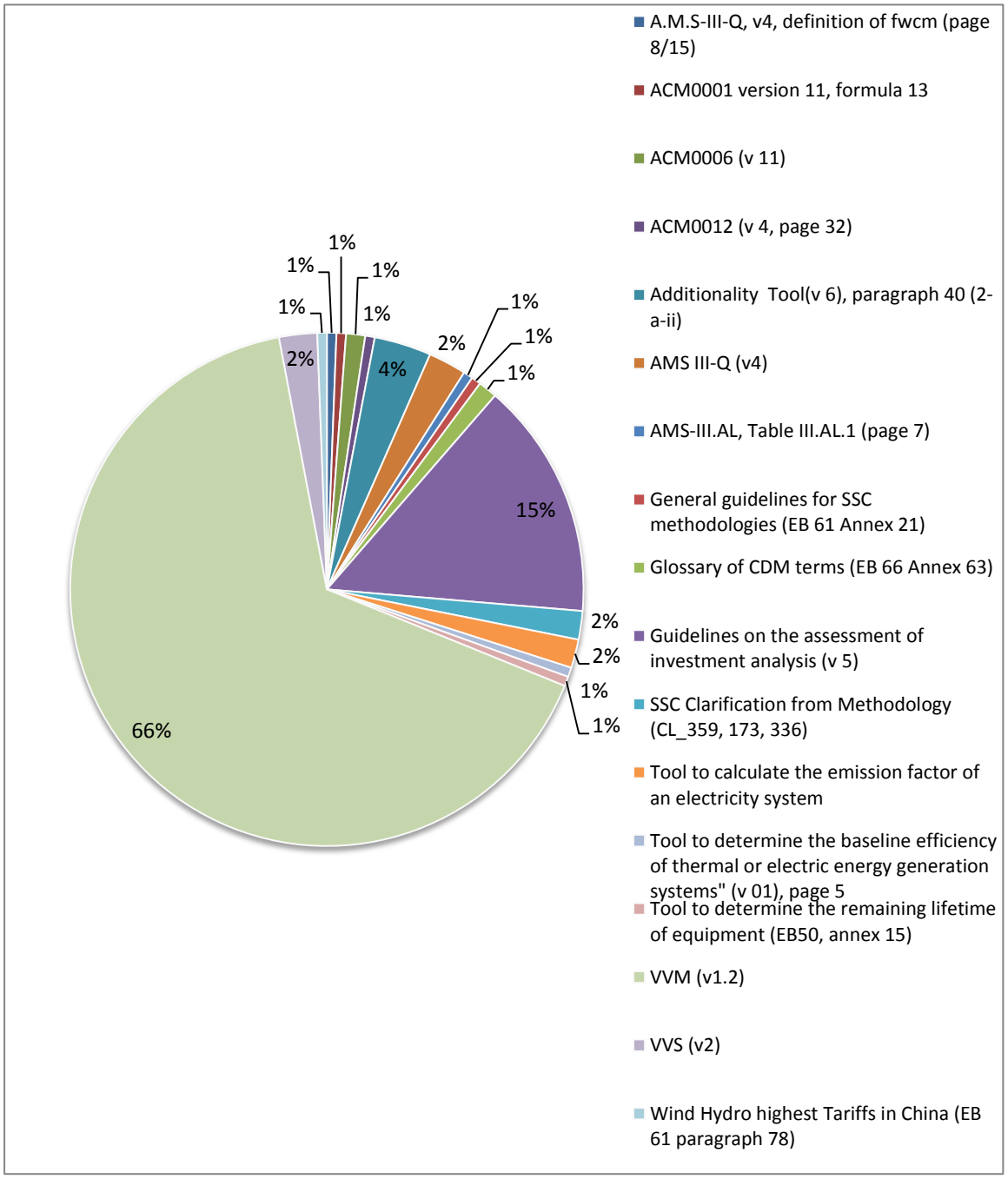
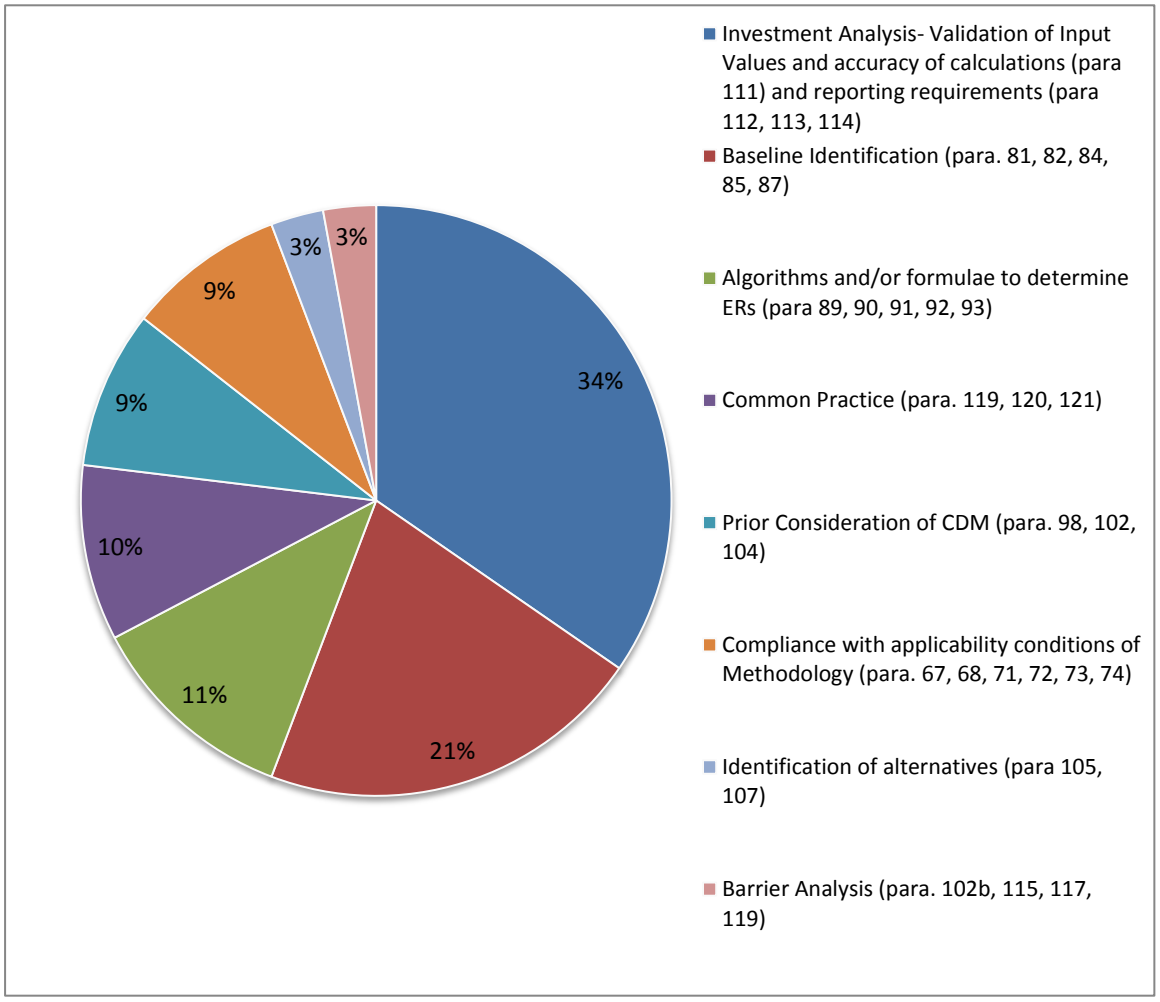


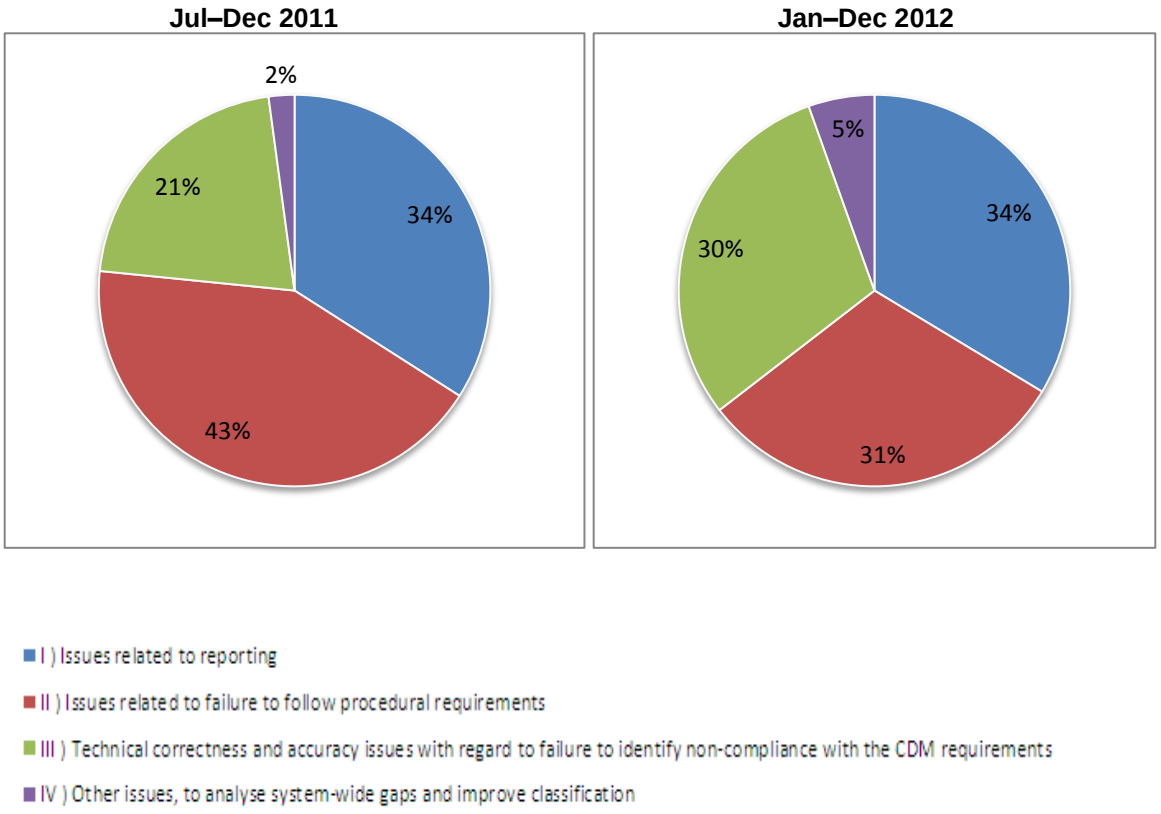
Figure 17. Registration – request for review issues – VVM paragraph-wise (Jan–Dec 2012)



46. The graphics presented above provide comparative frequency of the issues raised against the corresponding paragraphs of the VVM.

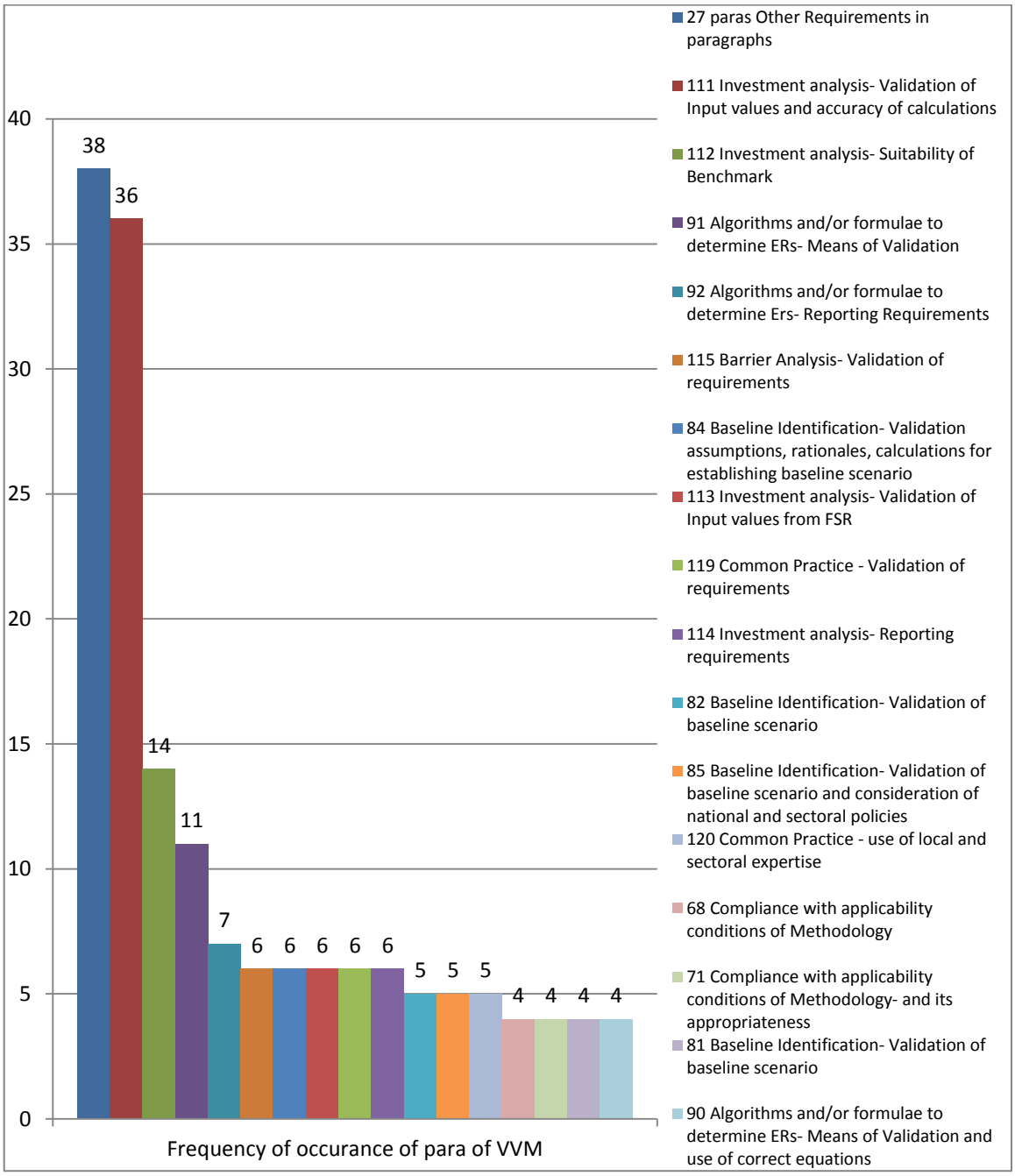
47. According to the graphic below, no difference is observed between 2011 and 2012 data on issues raised on reporting issues, which represent 34% in both years. The same applies to the issues raised due to technical correctness and accuracy issues, which represent the major portion of issues and show comparable percentages in the two years (64% in 2011 and 61% in 2012).

Figure 18. Categories of issues related to VVM v. 1.2



48. With regard to the relationship between the issues raised and the VVM 1.2, as shown in the graph below, 16 paragraphs (68, 71, 81, 82, 84, 85, 90, 91, 92, 111, 112, 113, 114, 115, 119, 120) of the VVM (version 1.2) account for 77% of the total request for review issues, with paragraphs 111 (investment analysis – validation of input values and accuracy of calculations) and 112 (investment analysis – suitability of benchmark) accounting for 22% and 8% respectively.

Figure 19. Categories of issues related to VVM v. 1.2



49. The issues on reporting can be addressed by means of standardized templates for validation and verification, including clarification on reporting requirements on major issues such as the application of E- policies in the context of investment analysis and application of new tools and guidelines that become effective in the course of validation and verification. For reducing technical accuracy issues, DOEs may further strengthen their quality check procedures prior to sending submissions to the Board, strengthen their technical review processes and train their personnel on the issues where most of the request for review issues are triggered.

Appendix 2. Issuance

1. Overview of DOE performance

1.1. DOE Performance Indicator (I_2 - Rate of requests for review)

1. A trend of I_2 Indicator (rate of requests for review) in the issuance process for eligible DOEs and a trend of DOE-wise I_2 Indicator for major DOEs for the monitoring periods of 1 January 2010 to 31 December 2010, 1 January 2011 to 31 December 2011 and 1 January 2012 to 31 December 2012 are presented below. During this period, the maximum value of the indicator I_2 has crossed the higher threshold once and triggered a spot-check.

Figure 1. I_2 Indicator for issuance process (eligible DOEs only)

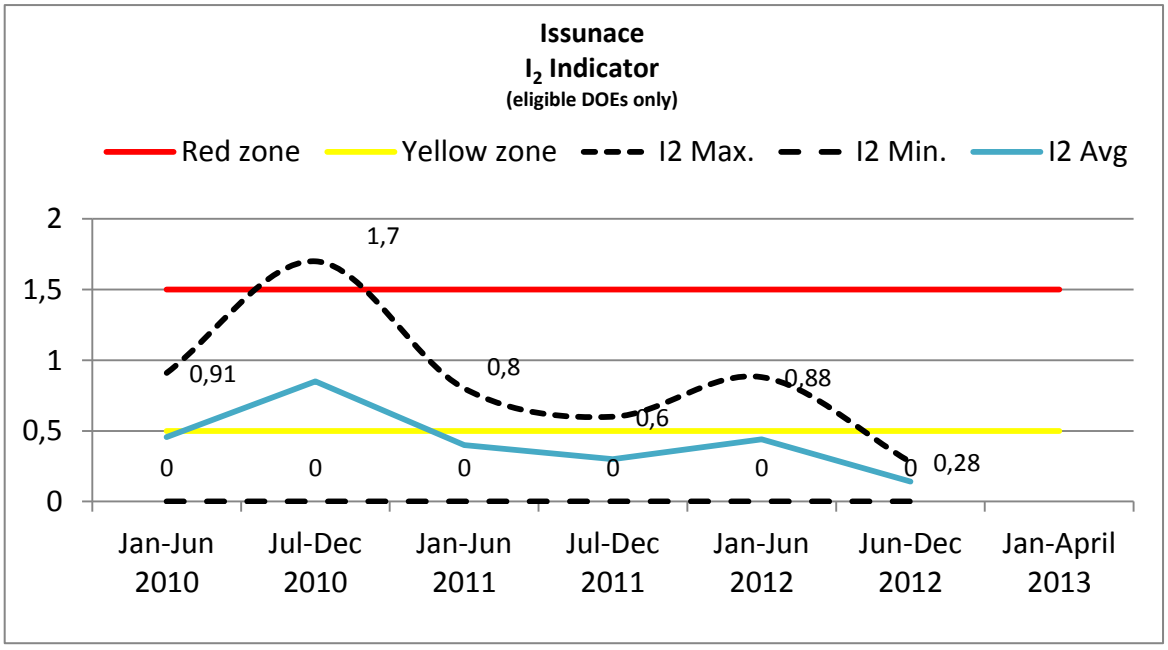
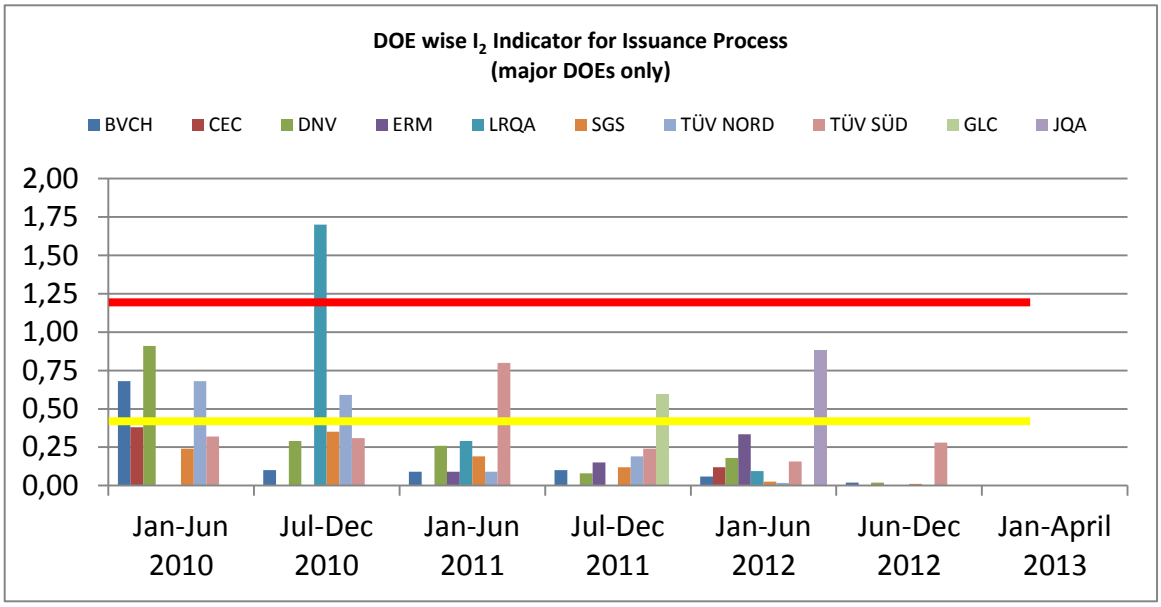


Figure 2. DOE wise I_2 indicator for issuance process (major DOEs only)



1.2. DOE performance indicator (I_2): – classification of issues raised

2. Overview graphics compiling the issues raised in issuance requests for all DOEs (eligible for monitoring and non-eligible for monitoring) for the monitoring periods of 1 January 2010 to 31 December 2010, 1 January 2011 to 31 December 2011 and 1 January 2012 to 31 December 2012 are provided below.

Figure 3. Issuance submissions

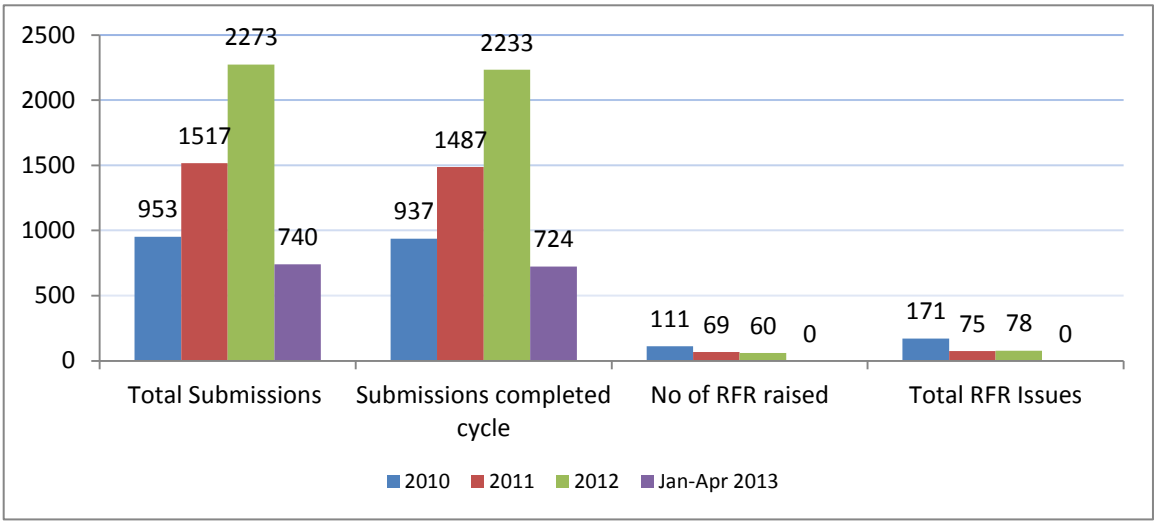
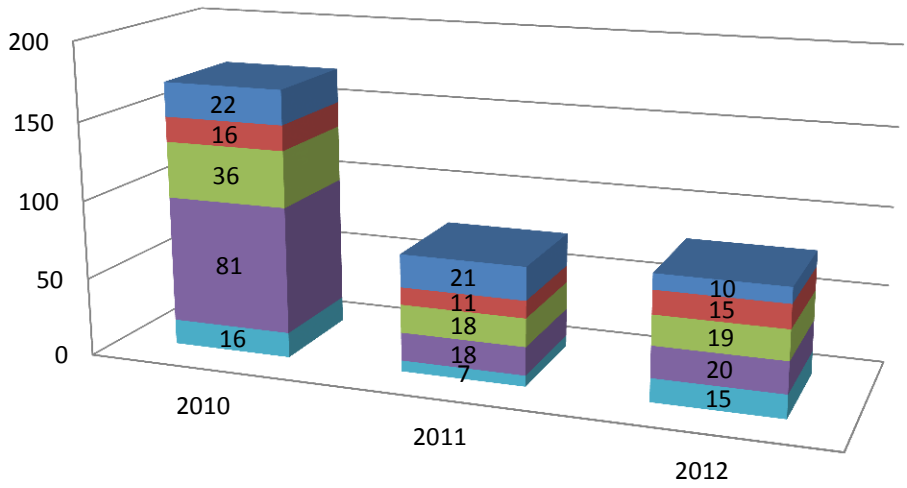


Figure 4. Issuance – request for review issues



	2010	2011	2012
Implementation of the PA	22	21	10
Compliance of the monitoring plan with the monitoring methodology	16	11	15
Compliance of monitoring with the monitoring plan	36	18	19
Assessment of data and calculation of greenhouse gas emission reductions (BE,PE, ER calculation)	81	18	20
Procedural and related requirements	16	7	15

2. Analysis of the issues raised

3. This section provides a summary and analysis of the issues raised within the main components checked for issuance submissions in 2012:

   (a) Compliance of monitoring with the monitoring plan;

   (b) Assessment of data and calculation of greenhouse gas emission reductions;

   (c) Compliance of the monitoring plan with the monitoring methodology;

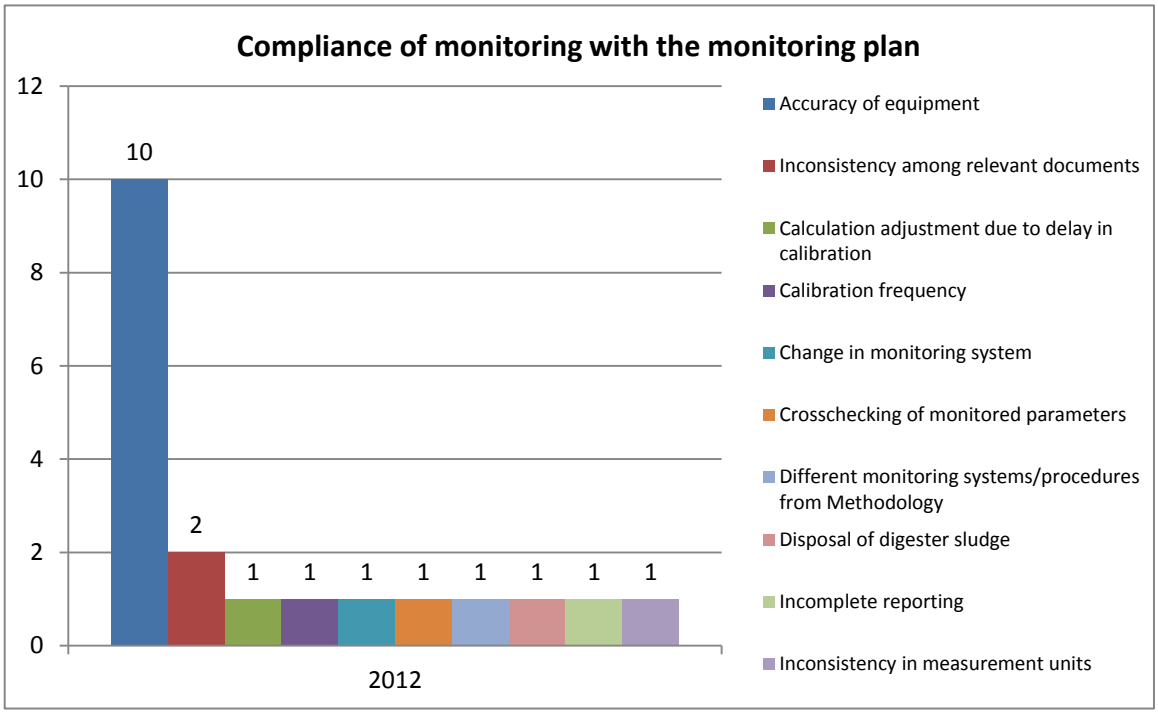
   (d) Implementation of the project activity.

2.1. Compliance of monitoring with the monitoring plan

4. The graphs below present the breakdown of issues raised under the requirement to comply with the approved monitoring plan.

5. The selected keywords intend to group similar issues. From that point of view, half of the issues raised are related to the accuracy of monitoring equipment, e.g. electricity meters, while 10% of the issues are linked to inconsistencies observed among relevant documents.

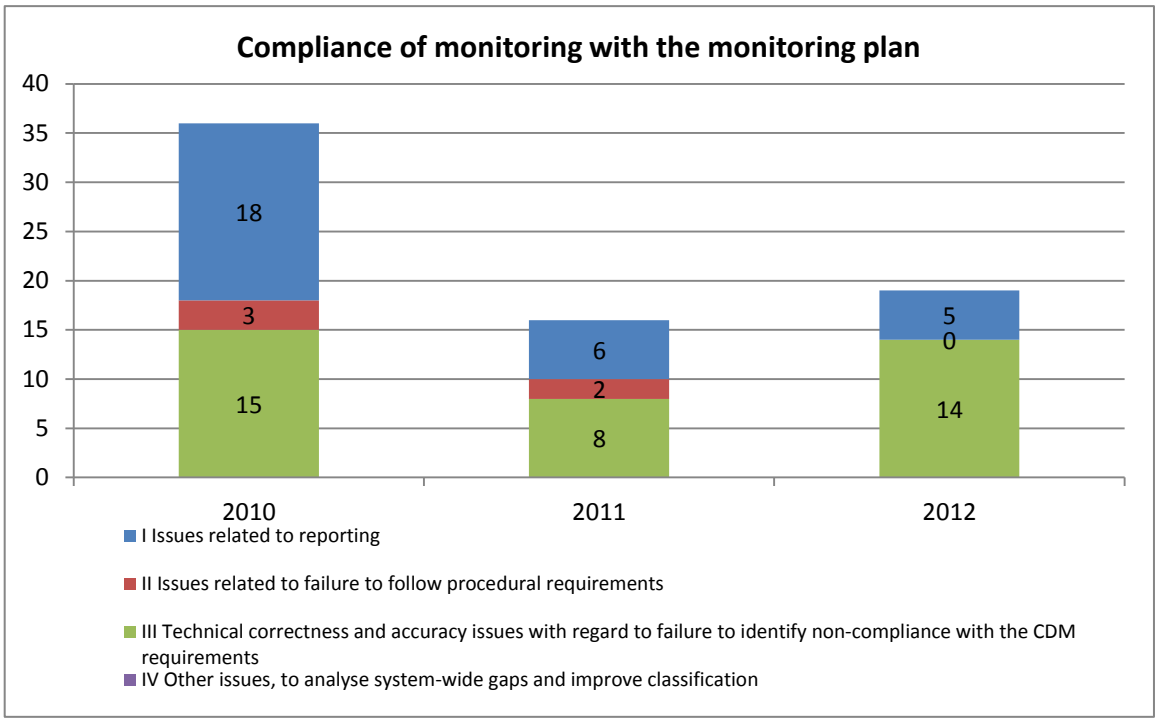
Figure 5. Issuance – compliance of monitoring with the monitoring plan: issues by keyword



6. The graph below shows that out of the 19 issues raised under the category of compliance with the approved monitoring plan, 74% belong to the category of technical correctness and accuracy, while the rest are issues of reporting, i.e. issues due to inconsistencies or incomplete information provided.

7. In 2012, technical issues represented a bigger share of all issues than in previous years, with 42% in 2010 and 50% in 2011.

Figure 6. Issuance – compliance of monitoring with the monitoring plan: categories of issues by category



8. The table below summarizes, along with the issues of compliance of monitoring with the monitoring plan, the existing measures and possible ways to reduce the number of requests for review issues in this area.

Table 1. Analysis of request for review issues and potential options for system-wide improvements –issuance on compliance of monitoring with monitoring plan

Request for review issues on (Jan-Dec 2012)					Potential options for improvement		
				Existing measures	Measures by DOE	Introduce new rules/guidance	Training/capacity-building
Issues related to reporting		Accuracy of equipment	Equipment accuracy has changed or is not reported	Appendix I of Project standard or submit post-registration changes as per PCP	Apply corrections in accuracy of equipment as per the provisions in Appendix I of Project standard or submit post-registration changes as per PCP	Develop standardized verification templates which shall include specific detailed reporting requirements on accuracy of the equipment, calibration, measurement methods and reporting of missing data which is expected to reduce the issues due to reporting issues.	-
		Calibration frequency	The project applies local calibration rules rather than the ones specified in the methodology	The Guidelines for assessing compliance with the calibration frequency (EB 52 Annex 60) explain how to handle most calibration-related issues	-	-	-

Request for review issues on (Jan-Dec 2012)				Potential options for improvement		
			Existing measures	Measures by DOE	Introduce new rules/guidance	Training/capacity-building
	Change in monitoring system	The concentration of methane and non-methane hydrocarbon is not monitored with the equipment and procedures indicated in the monitoring plan	VVM version 1.2 paragraph 205 requests compliance with the monitoring plan	-	-	Include in Regional Calibration Workshop recurrent issues raised at request for review stage and how the current requirements address these issues (PS & VVS); also post-registration changes with case study approach
	Cross-checking of monitored parameters	It is not clear if the sales receipts correspond to the meters used for monitoring	The VVS (paragraphs 214 to 217) requires the DOE to assess the audit trail supporting the figures provided	-	-	
	Different monitoring systems/procedures from methodology	The DOE has not reported whether three samples of biomass residues were taken for each NCV measure	VVM version 1.2 paragraph 205 requires the DOE to confirm that monitoring plan and the applied methodology have been properly implemented and followed	-	-	

Request for review issues on (Jan-Dec 2012)				Existing measures	Potential options for improvement		
					Measures by DOE	Introduce new rules/guidance	Training/capacity-building
		Incomplete reporting	The detailed monitored parameters have not been submitted	VVM version 1.2 paragraph 221 requires the DOE to provide a summary of the verification process and findings in the verification report	-	Include in each methodology the minimum level of detail for the monitoring parameters to be included in the monitoring report	-
		Inconsistency among relevant documents	The monitoring plan states that the reading of meter M2 is monitored continuously then cross-checked with the reading of meter M1, while according to the monitoring report and verification report, the net electricity export was monitored by M1 and cross-checked with M2	VVM version 1.2 paragraph 204 requires compliance with the accepted monitored plan	-	-	-
		Inconsistency in measurement units	It is not clear whether meter readings apply or have been adjusted into normalized units	VVM version 1.2 paragraph 208 requires the DOE to justify all assumptions and reference values used in the calculations	-	-	-

Request for review issues on (Jan-Dec 2012)				Existing measures	Potential options for improvement		
					Measures by DOE	Introduce new rules/guidance	Training/capacity-building
Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements		Accuracy of equipment	The accuracy of the gas analyser is different from the one indicated in the monitoring plan	VVM version 1.2 paragraph 204 requires compliance with the accepted monitored plan	-	Project 180 of CDM MAP 2013 on revision of PS, VS and PCP may further explore expanding Appendix 1 of the PS to include common monitoring issues including those not under the control of the PP/CME.	Include in Regional Calibration Workshop recurrent issues raised at request for review stage and how the current requirements address these issues (PS & VVS); also post-registration changes with case study approach
		Calculation adjustment due to delay in calibration	The calculations were not correctly adjusted as a result of delay in calibration	The Guidelines for assessing compliance with the calibration frequency (EB 52 Annex 60) explain how to handle most calibration-related issues	-	-	-
		Disposal of digester sludge	No reporting of the means of verification of the sludge disposal	VVM version 1.2 paragraph 205 requires the DOE to confirm that monitoring plan and the applied methodology have been properly implemented and followed	-	-	-
		Inconsistency among relevant documents	The verification report refers to monitoring provisions of the PDD which are not consistent with the revised monitoring plan		-	-	-

9. The most frequent reporting issues on compliance of monitoring with the monitoring plan are related to the accuracy of monitoring equipment. Project 118 of the CDM MAP 2013–2014 (EB71 report, Annex 1) will focus on validation and verification templates and guidelines. It is expected to contribute to a reduction of the number of reporting issues raised. In addition, it would be possible to develop verification forms to include specific detailed reporting requirements on accuracy of the equipment, calibration, measurement methods and reporting of missing data. The most frequent issues related to technical correctness and accuracy are raised with regard to the equipment accuracy which is not in compliance with the monitoring plan. Two projects under the CDM MAP 2013–2014 (EB 71, Annex 1) and the Workplan 2013 (EB 72, Annex 3) aim to address these issues. Project 158 focuses on issues related to uncertainties in measurements in methodologies, while Project 180 covers the revision of the PS, VVS and PCP. Coordination between project 158 and project 118 (validation and verification templates and guidelines) may be considered in order to explore the possibility to address common reporting issues.

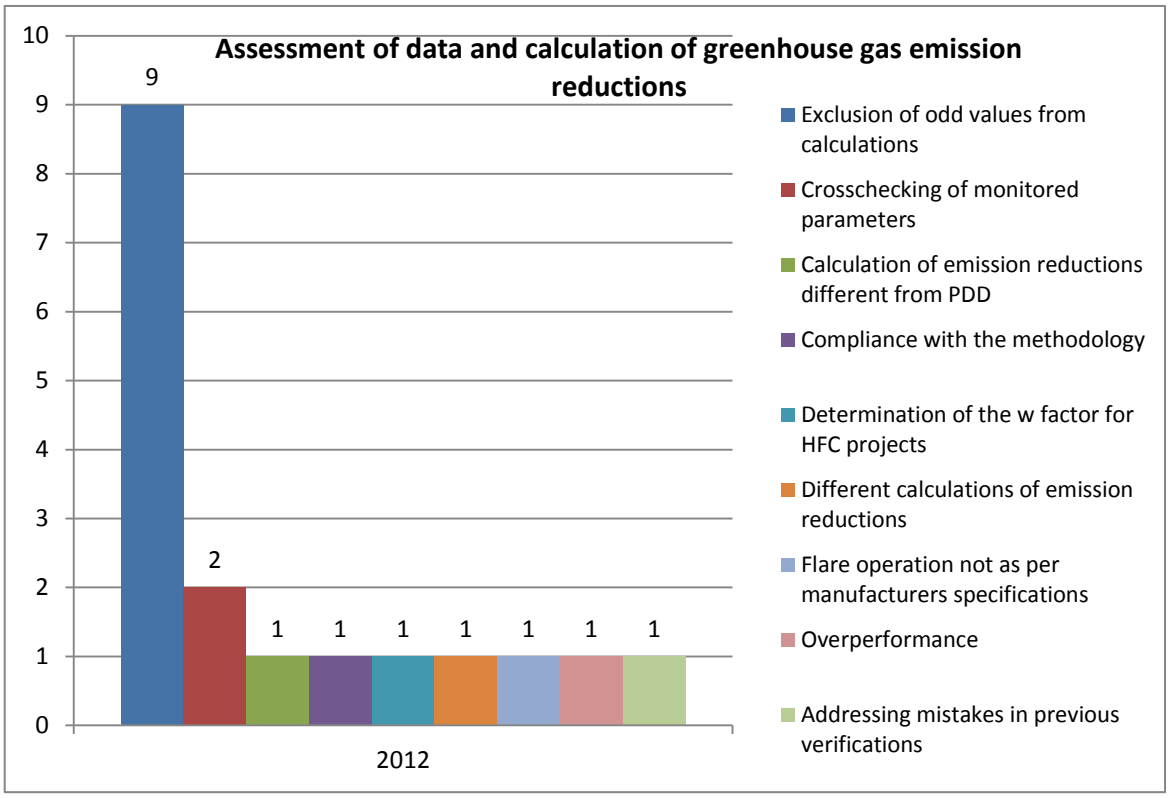
10. Project 180 may also include: provision of a clear definition of temporary and permanent change (operational vs. physical/location); and the expansion of appendix 1 to the PS to cover common monitoring issues including those not under the control of the PPs/CMEs. Regional Calibration Workshops for DOEs may include these recurrent issues and explain how the current requirements (PS and VVS) address these issues.

2.2. Assessment of data and calculation of greenhouse gas emission reductions

11. The graphs below present the breakdown of issues raised under the requirement to assess data and calculation of greenhouse emissions.

12. The selected keywords intend to group similar issues. From that point of view, half of the issues raised are related to odd monitored values which have not been excluded from calculations, while 11% of the issues are linked to the absence of cross-checking of monitored parameters.

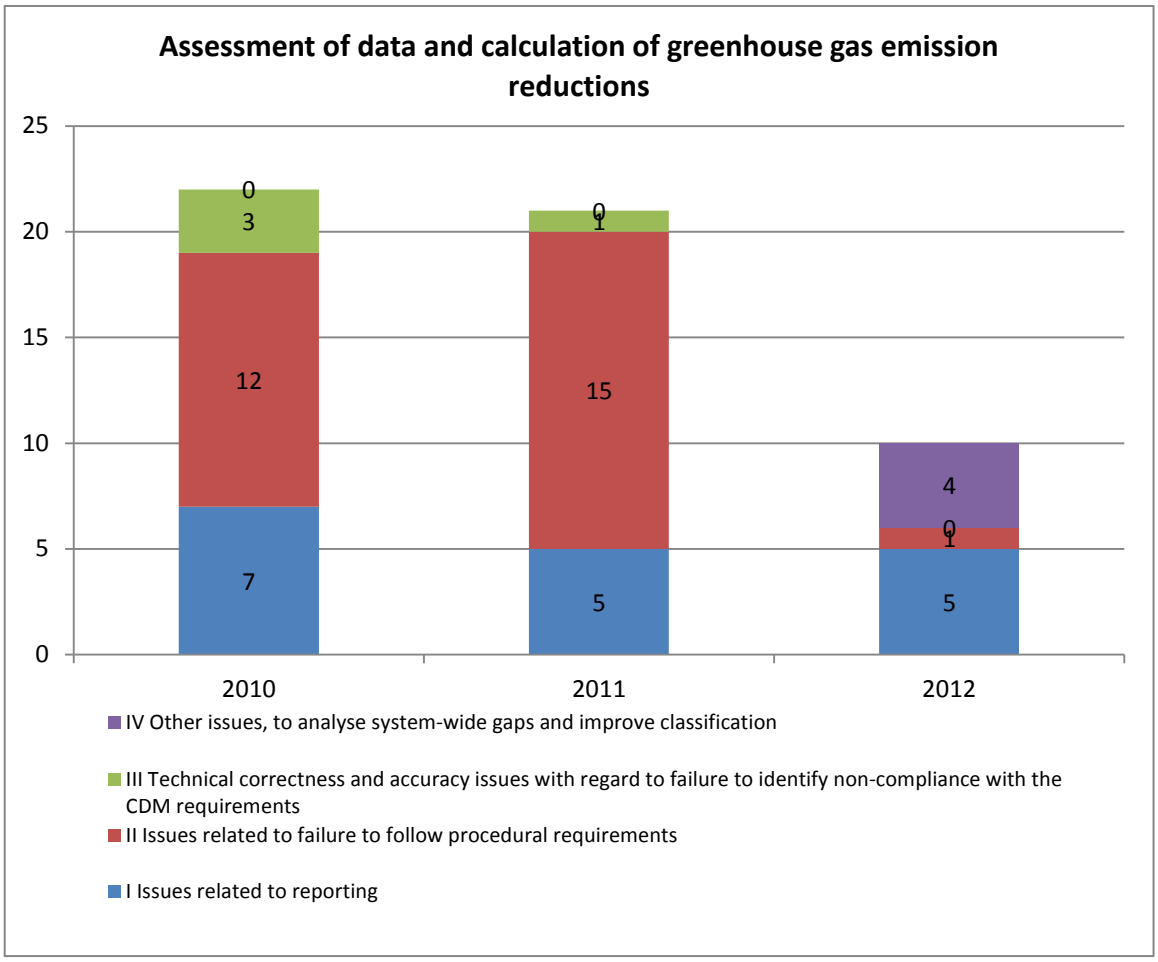
Figure 7. Issuance – assessment of data and calculation of greenhouse gas emission reductions: issues by keyword



13. The graph below shows that out of the 20 issues raised under the category of assessment of data and calculation, 75% belong to the category of technical correctness and accuracy, while 15% are issues of undefined nature, later analysed as part of system gaps.

14. The technical issues represent a higher share of all issues in 2012 than in previous years, with 41% in 2010 and 51% in 2011.

Figure 8. Issuance – assessment of data and calculation of greenhouse gas emission reductions: issues by category



15. The table below describes the issues raised on assessment of data and calculation of greenhouse gas emission reductions. It also summarizes the current activities and potential options to reduce the request for review issues in this area.

Table 2. Analysis of request for review issues and potential options for system-wide improvements – issuance: on assessment of data and calculation of greenhouse gas emission reduction]

Request for review Issues on investment analysis (Jan-Dec 2012)				Potential options for improvement		
				Existing measures	Introduce new rules/guidance	Training/capacity-building
Issues related to reporting	**1%**	Determination of the w factor for HFC projects	The default value of 1.5% should be used when the plant cannot provide three years of operational data to estimate the w factor		-	-
					-	-
					-	-
Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements	**19%**	Exclusion of odd values from calculations	Data obtained outside of permitted operating conditions should be excluded from ER calculations	VVM version 1.2 paragraph 208 requires the DOE to justify all assumptions and reference values used in the calculations	Develop generic standardized spreadsheets for emission reduction calculations for some key sectors that cover the majority of projects (e.g. for biomass electricity and heat generation, waste-heat recovery, landfill, methane recovery from waste water and AWMS, etc.) to reduce the reporting and technical accuracy issues	Regional Calibration Workshops in 2014 to include a focus on correct application of algorithms and/or formulae to determine emission reductions including post-registration changes on revision of monitoring plan or methodology or deviations
		Calculation of emission reductions different from PDD	Missing parameter in ER calculations as compared to registered PDD			
		Compliance with the methodology	The emission factor was not calculated according to the methodology	VVS version 2.0 paragraph 245 requires the DOE to confirm that appropriate emission factors, IPCC default values and other reference values have been correctly applied		
		Cross-checking of monitored parameters	The DOE has not cross-checked the reliability of the data as the project accounted for	VVM version 1.2 paragraph 208 requires the DOE to justify all assumptions and reference values		

Request for review Issues on investment analysis (Jan-Dec 2012)				Potential options for improvement		
				Existing measures	**Introduce new rules/guidance**	**Training/capacity-building**
			destroyed methane while there was no electricity generation	used in the calculations		
		Different calculations of emission reductions	The method applied to calculate one parameter is not in line with the registered PDD			
		Flare operation	The DOE has not reported how it has verified that the manufacturer's specifications for the flare operation were taken into account	EB28 Annex 13 page 10 requests to follow the manufacturer's specifications on proper operation of the flare		
		Over-performance	Actual ER are higher than ex ante estimates in a proportion that impacts additionality	VVM version 1.2 paragraph 197 requires the DOE to submit a notification or a request for approval of changes from the project activity as described in the registered PDD as needed		
Other issues, to analyse system-wide gaps and improve classification	**3%**	Addressing mistakes in previous verifications	The DOE suggests to discount ER in current monitoring period to account for excess claimed in previous verifications	VVM version 1.2 paragraph 208 requires the DOE to justify all assumptions and reference values used in the		-

Request for review Issues on investment analysis (Jan-Dec 2012)				Potential options for improvement		
				Existing measures	Introduce new rules/guidance	Training/capacity-building
		Cross-checking of monitored parameters	The electricity measured at a meter shared with another project activity is not consistently reported for the two project activities	calculations	Consider ways to cross-check data across projects sharing same monitoring equipment or introduce provisions requesting the DOE to do so	-

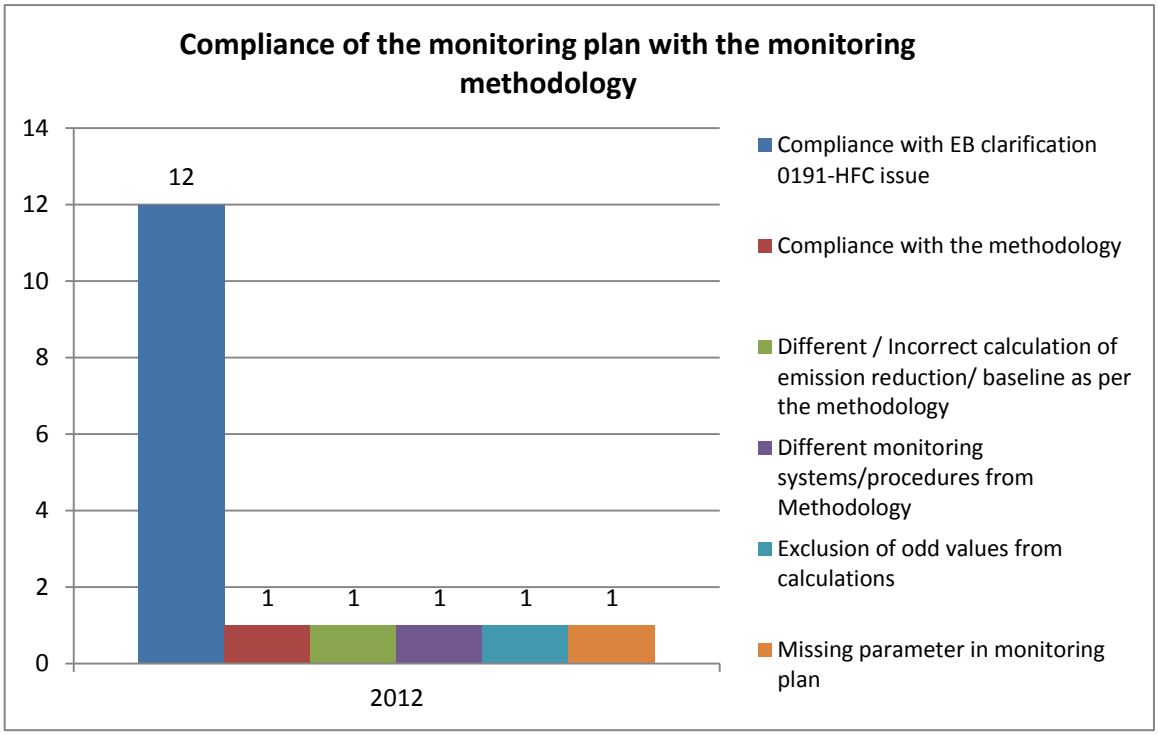
16. Project 120 of the CDM MAP 2013–2014 (Annex 1, EB 71) will focus on simplification and streamlining of methodologies and tools, with the aim of reducing transaction costs, especially those in regions underrepresented in the CDM. It is expected that this work will lead to a reduction in the number of issues raised on assessment of data and calculation of emission reductions under those methodologies. It may also be useful to develop generic standardized spreadsheets for emission reduction calculations for some key sectors that cover the majority of projects (e.g. the use of biomass for electricity and heat generation, waste-heat recovery, landfill, methane recovery from waste water and AWMS, etc.) to reduce the reporting and technical accuracy issues in this area.

2.3. Compliance of monitoring with the monitoring methodology

17. The graphs below present the breakdown of issues raised under the requirement to comply with the monitoring methodology.

18. The selected keywords intend to group similar issues. From that point of view, 71% of the issues raised are related to a Board clarification (0191) on HFC projects and the reasons for this are included in later sections, under system-wide gaps, of this report.

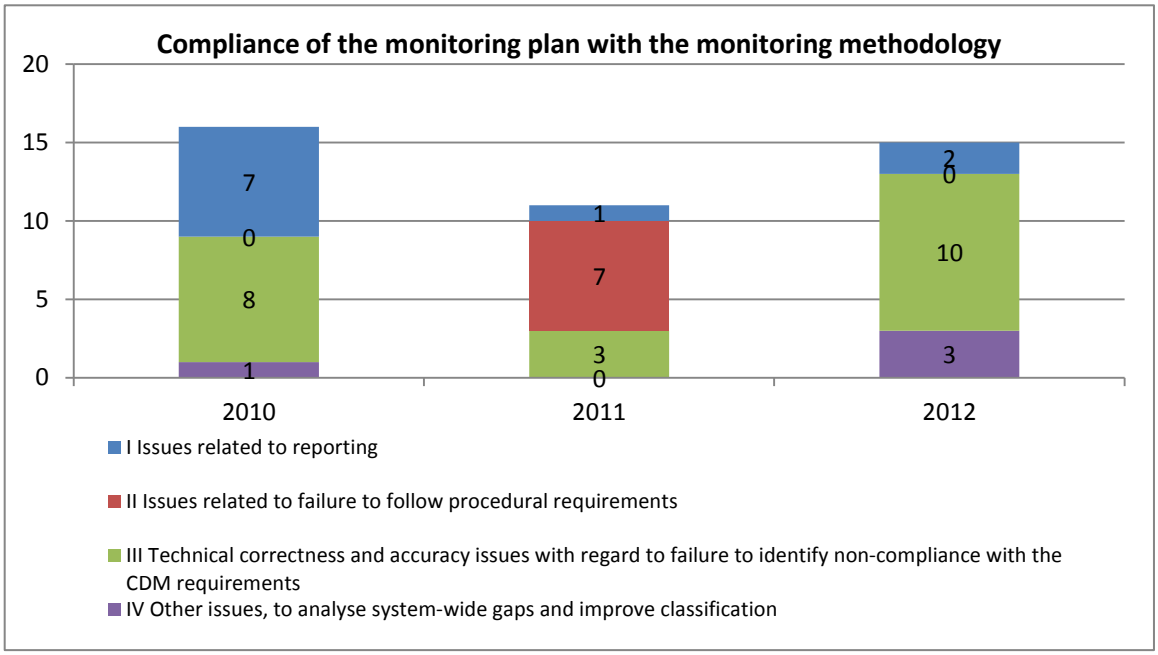
Figure 9. Issuance – compliance of monitoring with the monitoring methodology: issues by keyword



19. The graph below shows that of the 15 issues raised under the category of compliance with the monitoring methodology, 67% belong to the category of technical correctness and accuracy, while 20% are of undefined nature and 13% are issues of reporting, i.e. issues due to inconsistencies or incomplete information provided.

20. The technical issues represent a higher share of all issues in 2012 than in previous years, with 50% in 2010 and 27% in 2011.

Figure 10. Issuance – compliance of the monitoring plan with the monitoring methodology

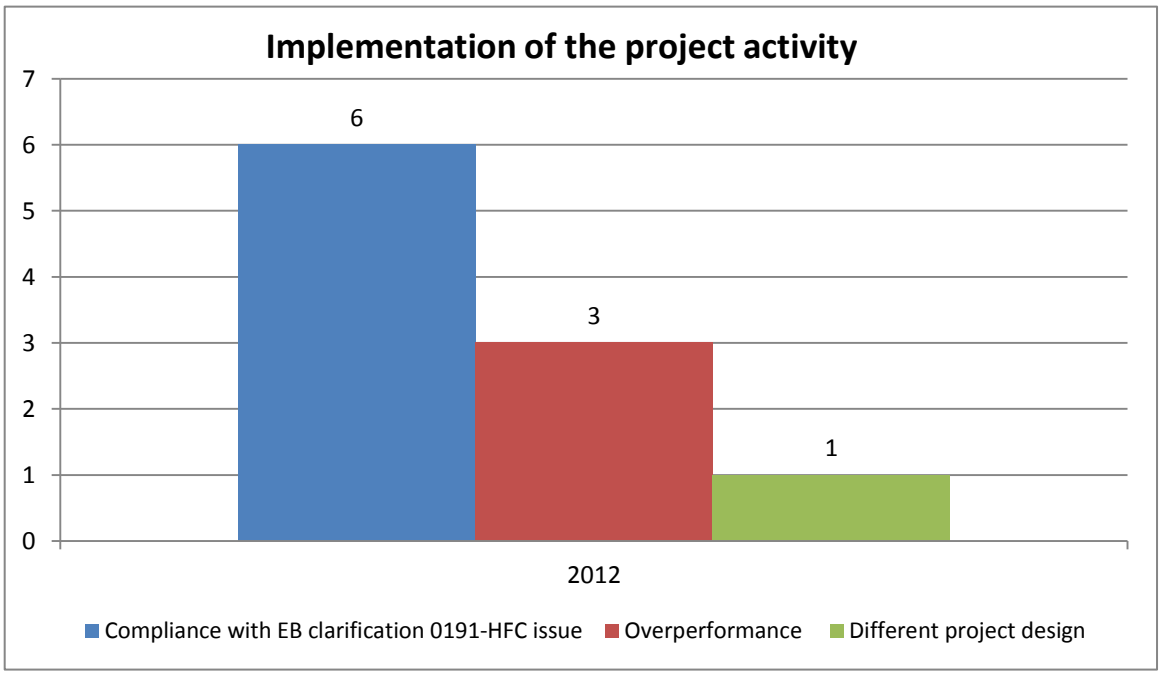


2.4. Implementation of project activity

21. The graphs below present the breakdown of issues raised under the requirement to implement the project activity as per the registered PDD.

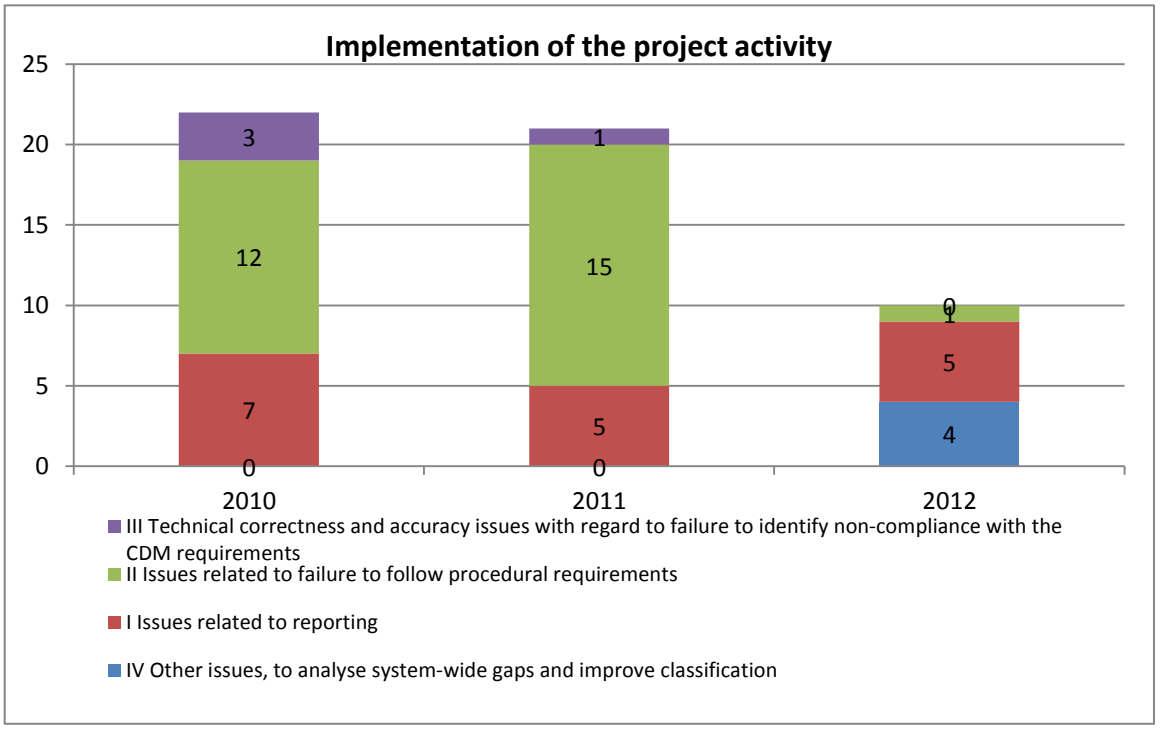
22. The selected keywords intend to group similar issues. From that point of view, 60% of the issues raised are related to the Board clarification (0191) issued for HFC projects, while 30% are due to aspects of the project implementation not indicated in the registered PDD, and 10% are linked to over-performance of the project activity as compared to the registered PDD.

Figure 11. Issuance – implementation of the project activity: issues by keyword



23. The graph below shows that of the 10 issues raised under the category of project implementation, 50% are reporting, i.e. issues due to inconsistencies or incomplete information provided.

Figure 12. Issuance – implementation of the project activity: issues by category



24. Regional Calibration Workshops for DOEs can include these recurrent issues raised at the request for review stage, and may also explain the current requirements to address these issues (PS and VVS), as well as training on post-registration changes, including project implementation and change in project design, following the case-study approach.

3. Other classification and analysis of the issues

25. This section provides a summary and analysis of the issues raised within the main components checked for issuance submissions on:

    (a) Categories of issues; and

    (b) Document-wise distribution of issues.

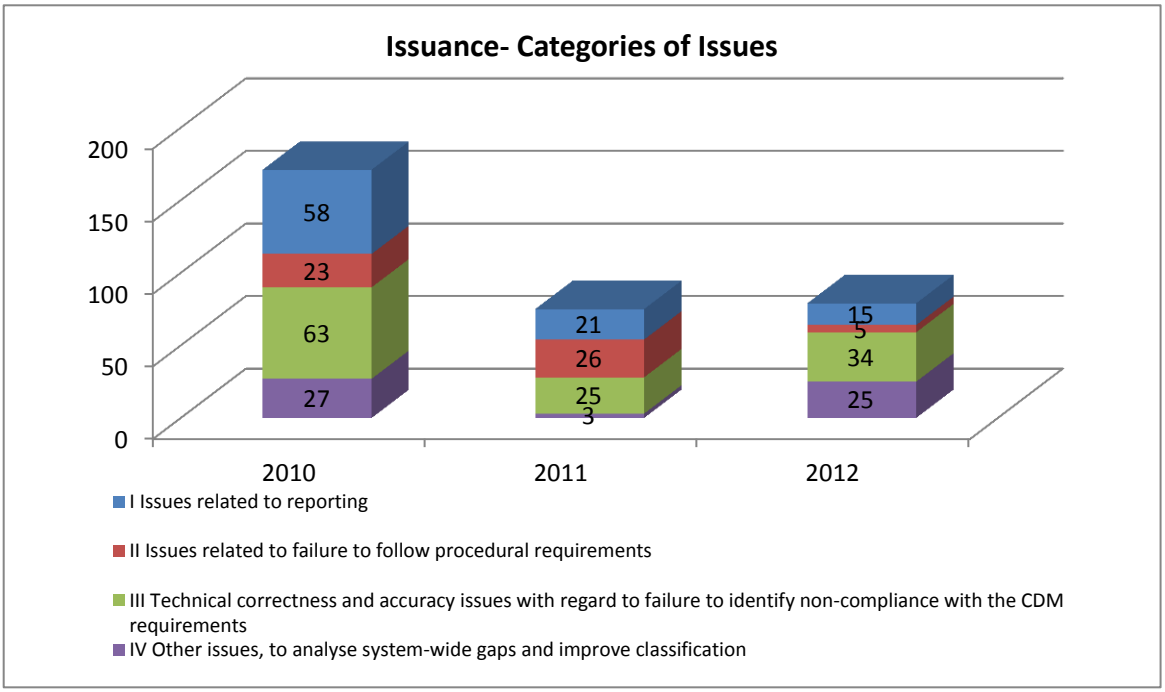
3.1. Categories of issues

26. This section presents the identified issues classified by category. The graphics below illustrate the distribution of the issues raised for issuance cases from 2010 to 2012.

27. The analysis and the graphics show that in 2010, 37% of the issues raised were related to technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements, 34% related to reporting, 16% related to other issues, and 13% related to failure to follow procedural requirements.

28. In 2011, 35% of the issues raised were related to a failure to follow procedural requirements, 33% related to technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements, and 28% related to reporting and other issues.

Figure 13. Issuance – categories of issues



29. In 2012, the major type of issues are related to technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements, representing 43% of the total number of issues raised at the request for review stage. 19% of the issues are related to reporting, 32% are related to other issues, and 6% are related to failure to follow procedural requirements.

30. The assessment efforts may therefore be focused on technical correctness and accuracy issues as mentioned in tables 2 and 3. However, it is expected that the on-going work on revision of the PS, VVS and PCP, particularly on post-registration changes, such as related to the extension of Appendix 1 to the PS, would also have an effect on this trend.

31. There are still a high number of reporting issues raised. The 2013 CDM work plan (EB 70, Annex 3) has mandated the secretariat to develop standardized templates for validation and verification, in order to reduce the number of reporting issues.

32. With the growing experience of the DOEs in the application of the PCP, PS and VVS it can be expected that there will be fewer issues in future reporting periods. Further, providing focused training on the application of post-registration changes would contribute to reducing the requests for reviews and issues.

3.1.1. Other issues, to analyse system-wide gaps and improve classification

33. As depicted in the histogram below, a noticeable increase of the issues raised on other issues, to analyse system-wide gaps and improve classification has been observed, which grew from 4.0% in 2011 to 32% in 2012.

34. In 2012, 55% of these other issues were related to the absence of requirements/guidance by the Board; there was no such case in 2011. A total of 45% of other issues are due to the ambiguity of interpretation of requirements of methodologies/ guidance, against 100% in 2011 and 7% in 2010.

Figure 14. Other issues, to analyse system-wide gaps and improve classification

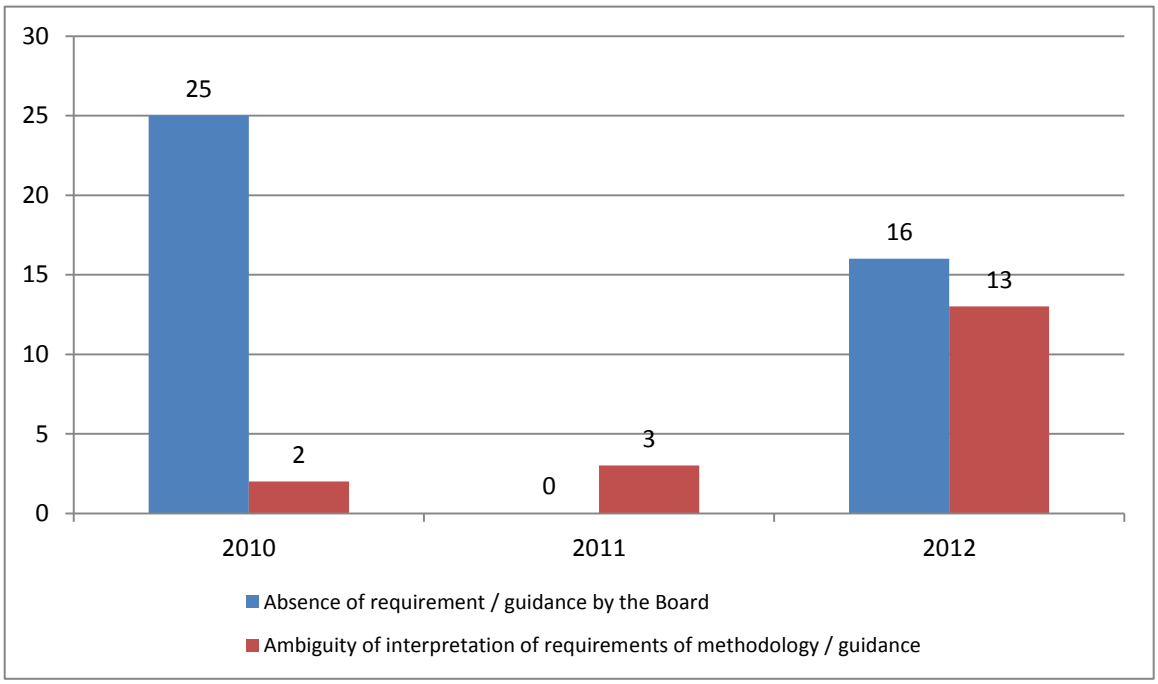
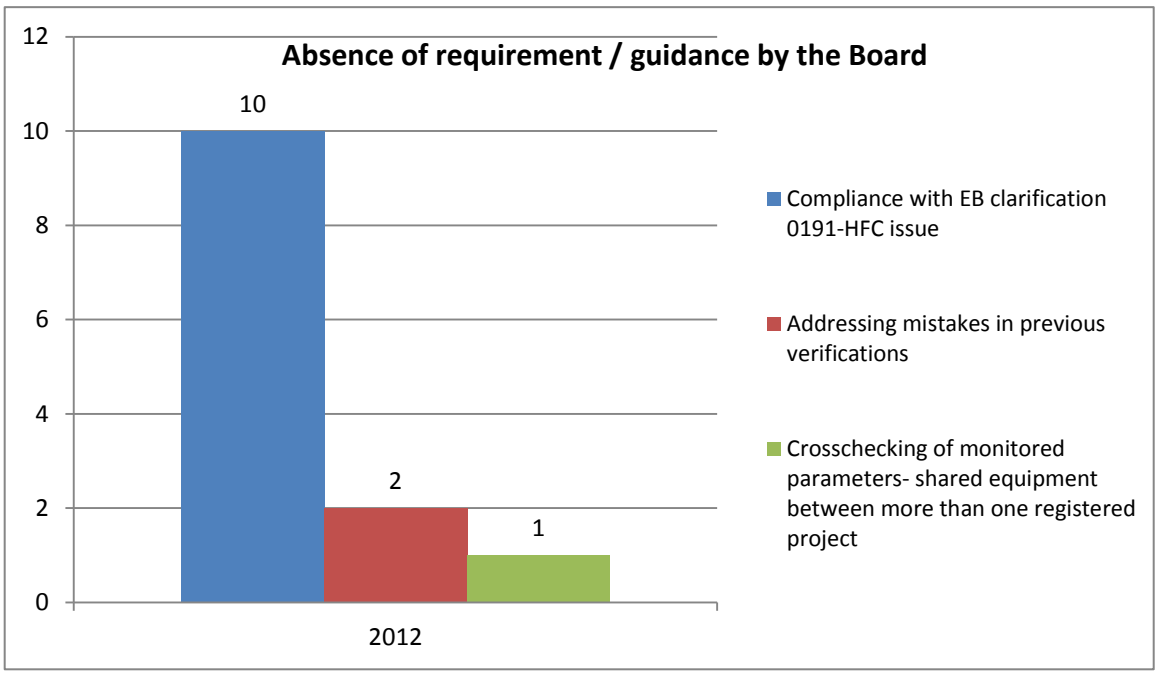


Figure 15. Ambiguity of interpretation of requirements of methodology/guidance



35. The table below mentions the action plan based on issues raised on other issues, to analyse system-wide gaps and improve classification and recommendation to further reduce the request for review issues. The main action proposed is to provide guidance on the monitoring requirements of parameters of other registered (CDM and non-CDM) projects which share the same equipment.

Table 3. Analysis of request for review issues and potential options for system-wide improvements – issuance: on absence of requirements/guidance by the Board

Request for review issues on investment analysis (Jan-Dec 2012)				Revision of original validation report	Existing measures	Potential options for improvement	
						Measures by DOE	Introduce new rules/guidance
Absence of requirement/ guidance by the Board	**16%**	Addressing mistakes in previous verifications	The DOE suggests to discount ER in current monitoring period to account for excess claimed in previous verifications	Absence of procedure to address errors in previous verifications	Procedures adopted at EB75 on voluntary cancellations/access issuance	-	-
		Compliance with Board clarification 0191 – HFC issue	The DOE has not addressed the issue presented in a Board clarification for HFC projects	Ambiguity in requirement	Guidance provided and this is no longer an issue	-	-
		Cross-checking of monitored parameters – shared equipment between more than one registered project	The electricity measured at a meter shared with another project activity is not consistently reported for the two project activities	-	No requirement to provide monitoring parameters of other projects which share the same equipment	Apply standard method/practice based on relevant expertise	-

36. It is to be noted that the issues (16%) raised at request for review on HFC projects (methodology AM0001) were due to the absence of clear requirements or guidance by the Board. After the Board provided guidance with clarification AM_CLA_0191, the issues raised were accepted and closed.

3.2. Document-wise distribution of issues

37. The graphics below illustrate the distribution of the issues raised in the period from July to December 2011 and from January to December 2012, with respect to various CDM documents. The majority of the issues raised (67% in July to December 2011 and 55% in January to December 2012) were related to compliance with the requirements of the VVM. Few issues were raised against the VVS and PS as they were recently introduced and not made mandatory until 31 January 2013, which is likely to be captured in future monitoring periods.

Figure 16. Issuance – request for review issues – CDM documents (Jul–Dec 2011)

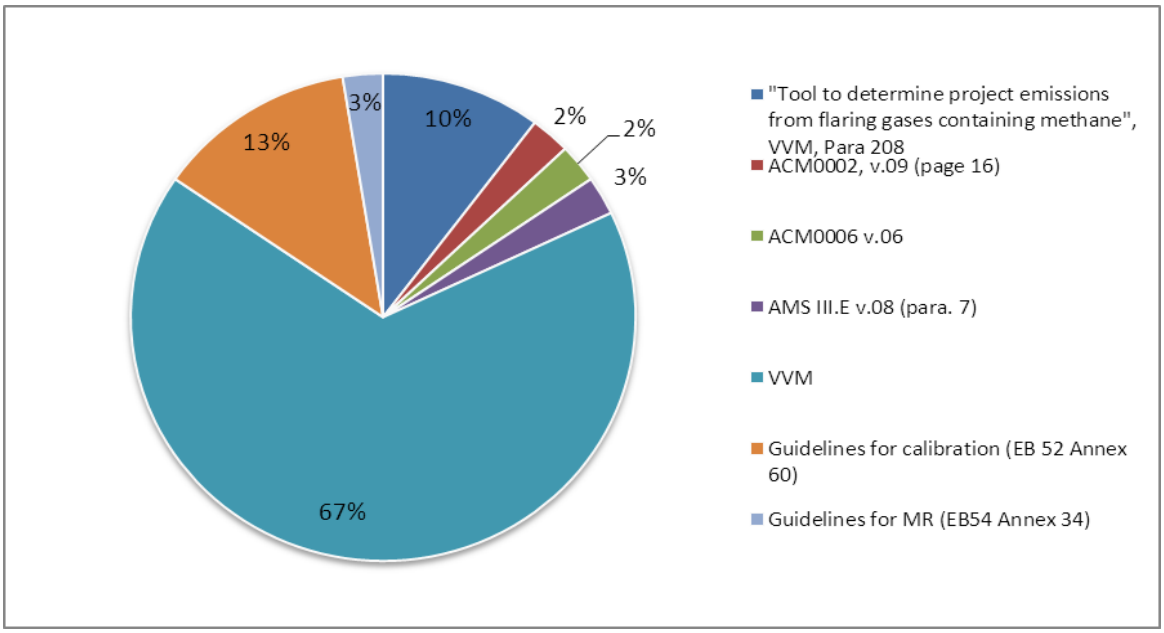
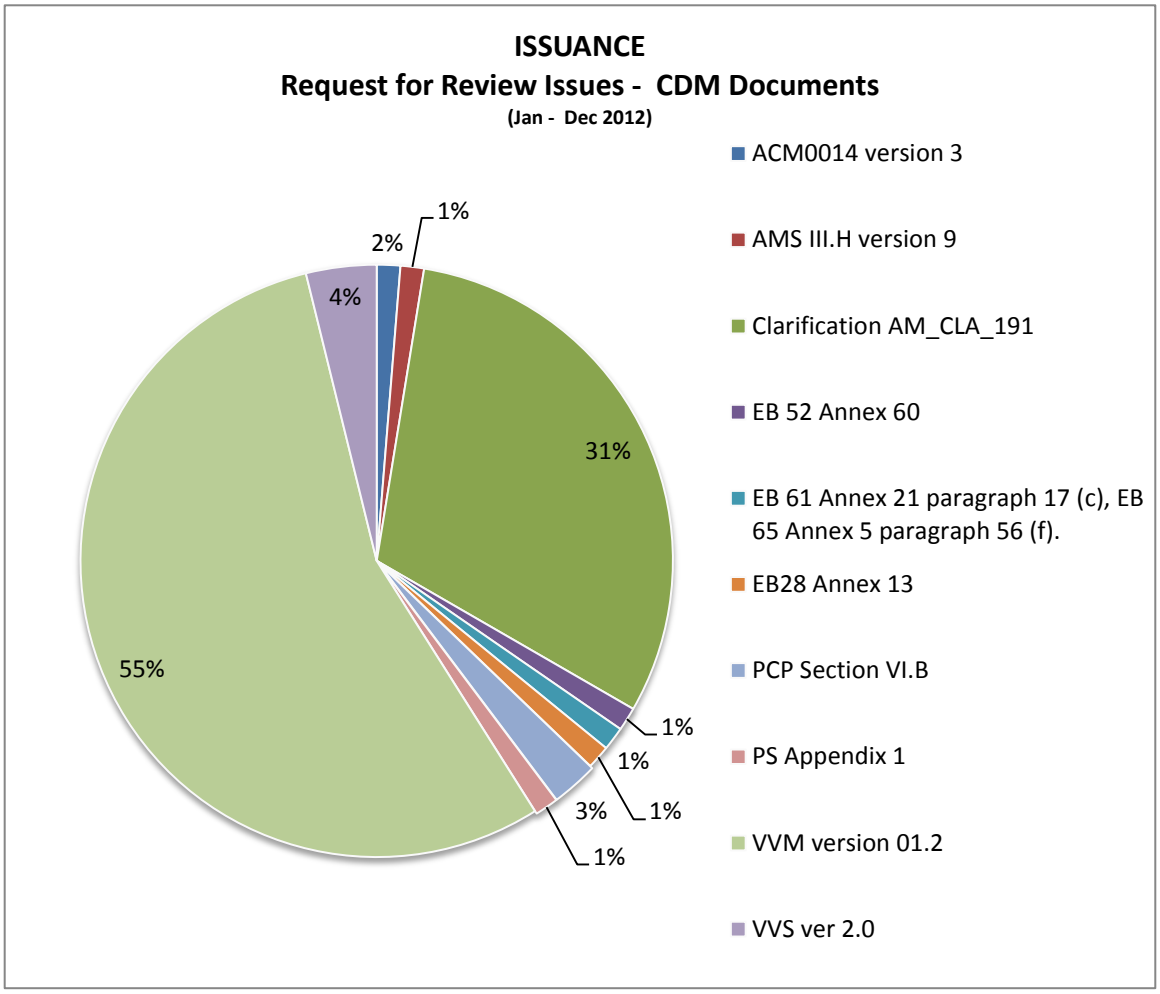


Figure 17. Issuance – request for review Issues – CDM documents (Jan–Dec 2012)

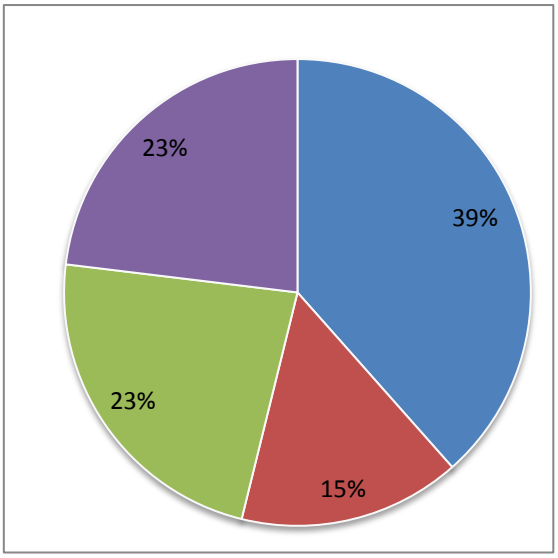


38. The two following graphics focus on issues raised against requirements of the VVM version 1.2. Significant issues are raised on technical accuracy issues (46% in the second half of 2011 and 65% in 2012, including minor technical issues) and reporting (39% and 19%, respectively). This is an area of improvement for the DOEs. The issues on reporting can be addressed by means of standardized templates for validation and verification. In order to reduce technical accuracy issues, it has been noted that DOEs could further strengthen their quality check procedures prior to sending submissions to the Board, strengthen their technical review processes, and train their personnel, particularly with regard to compliance of monitoring with the monitoring plan and assessment of data and calculation of greenhouse gas emission reductions, where most of the request for review issues are still triggered.

39. In 2012, a significant number of issues related to the VVM (16%) were raised on other issues, to analyse system-wide gaps and improve classification. These issues were raised with regard to HFC projects (methodology AM0001), as a result of an absence of requirements or guidance by the Board. After the Board provided guidance with clarification AM_CLA_0191, the issues raised were closed.

Figure 18. Issuance – request for review issues – VVM

Jul–Dec 2011



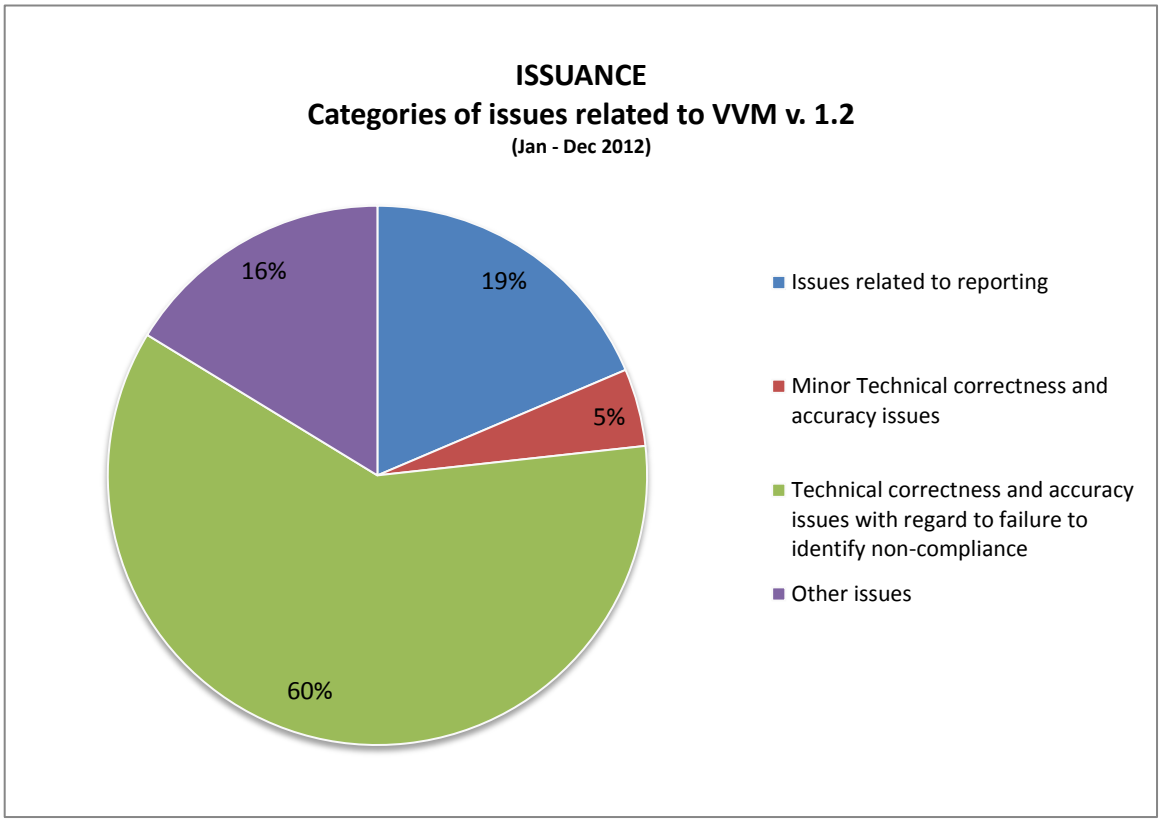
I Issues related to reporting

II Issues related to failure to follow procedural requirements

III Technical correctness and accuracy issues with regard to failure to identify non-compliance with the CDM requirements

IV Other issues, to analyse system-wide gaps and improve classification

Figure 19. Issuance – Categories of issues related to VVM v. 1.2.



40. The graphs below provide comparative frequency of the issues raised against the corresponding paragraphs of the VVM.

41. The most recurrent paragraphs of the VVM version 1.2 in both monitoring periods are related to compliance of the monitoring with the registered monitoring plan (paragraphs 204–206) and assessment of data and calculation of greenhouse gas emission reductions (paragraph 208).

Figure 20. Request for review issues – VVM keyword (Jul–Dec 2011)

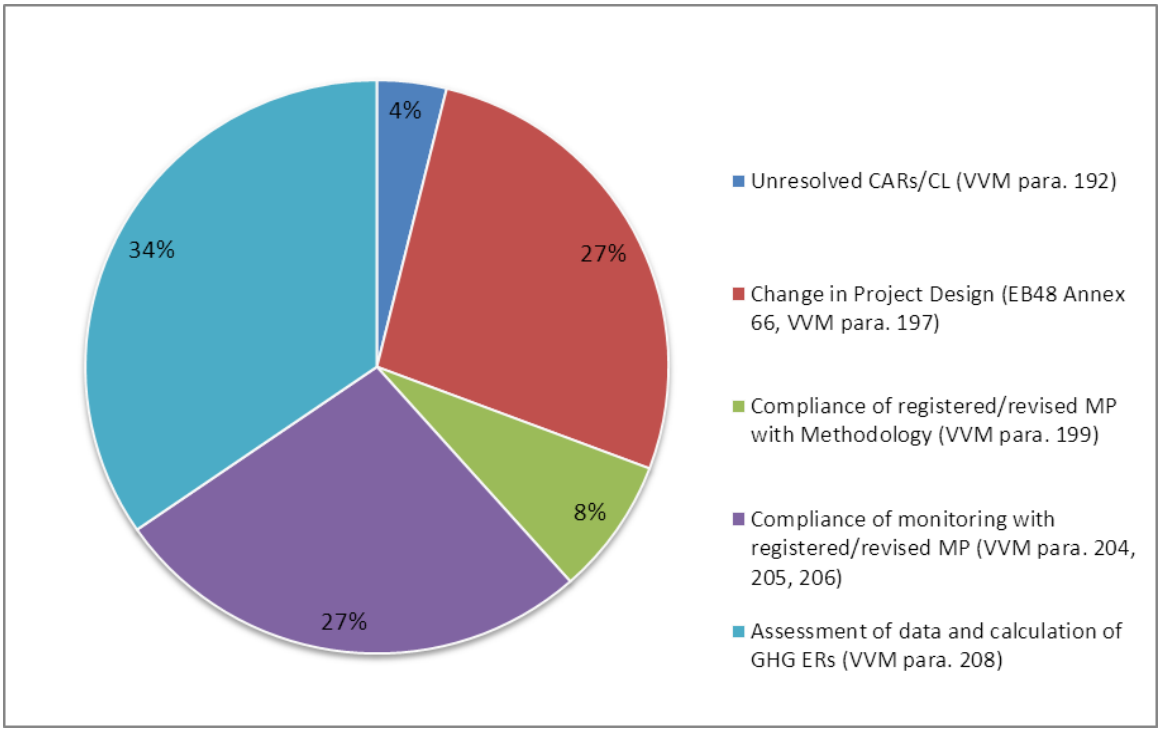


Figure 21. Issuance – request for review issues – VVM v 1.2 / Keyword (Jan–Dec 2012)

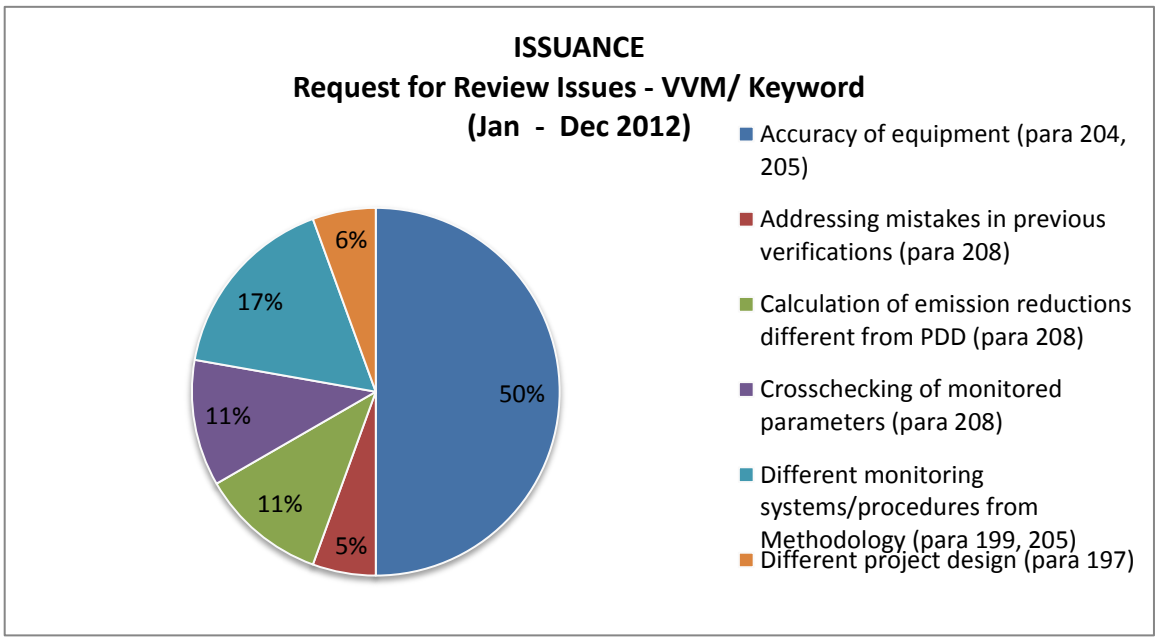
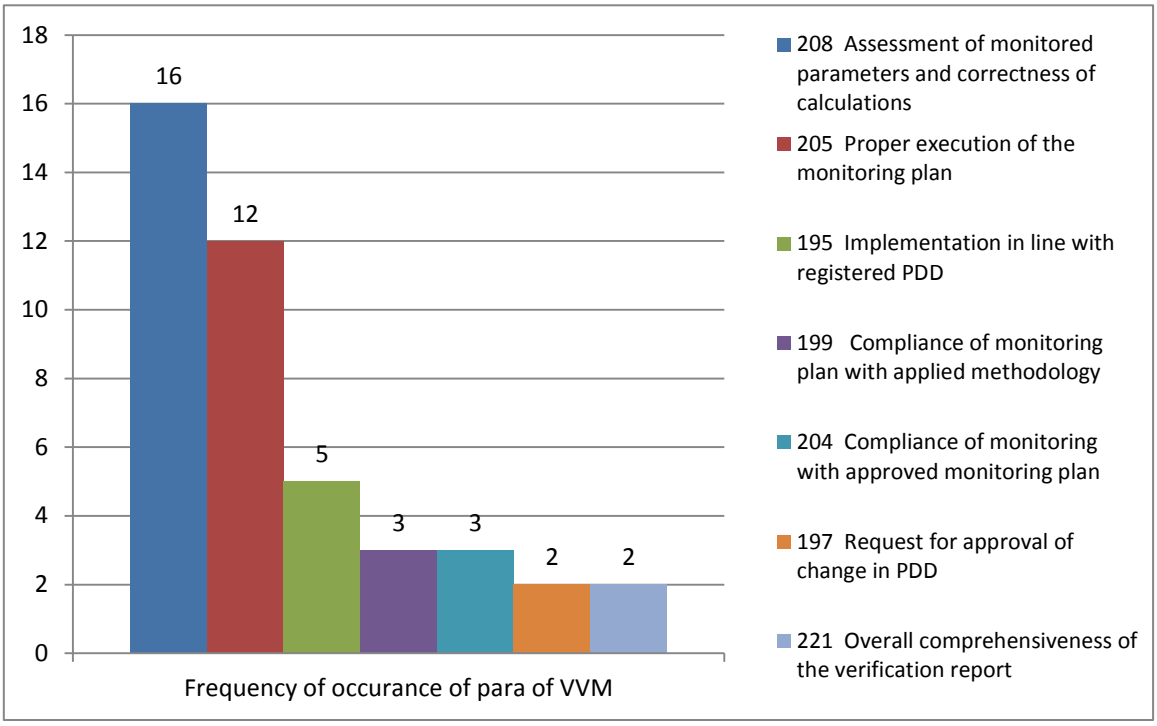


Figure 22. Issuance – request for review issues – VVM paragraph-wise (Jan–Dec 2012)



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