11th ERWG
Capri by Fraser, Bangsar
24/1/2017 – 25/1/2017

Name	Organisation	Status
Faizal Parish (Chair)	GEC	Substantive
Gan Lian Tiong (Co-chair)	Musim Mas	Substantive
Audrey Lee	Olam	Substantive
Foo Siew Theng	Wilmar	Substantive
Olivier Tichit	SIPEF	Substantive
Marcel Silvius	Wetlands International	Substantive
Shylaja Devi Vasudevan Nair	Sime Darby	Substantive
Lim Sian Choo	Bumitama Gunajaya Agro	Substantive
Arina Schrier	Wetlands International	Alternate
Jason Foong	KLK	Alternate
Lee Kuan Yee	KLK	Alternate
Henry Cai	Musim Mas	Alternate
Phubalan Karunakaran	WWF-Malaysia	Alternate
Mukesh Sharma	Asian-Agri	Alternate
Javin Tan	RSPO Secretariat	Secretariat
Yohanez Izmi Ryan (only on 25th)	RSPO Secretariat	Secretariat
Devaladevi Sivaceyon	RSPO Secretariat	Secretariat
Absent with apologies		
Julia Lo	GEC	Substantive
Cecille Bessou	CIRAD	Technical Advisor
Joseph Hutabarat	Rainforest Alliance	Substantive
Henry King	Unilever	Substantive
Azmariah Muhamed	Felda	Substantive
Jose Roberto Montenegro	AgroCaribe	Substantive

No.	Main Discussion Point	Description	Action Items
Tuesday, 24th January 2017			
1.	Introduction of new member, review of previous meeting minutes, endorsement of new Terms of Reference (ToR) and briefing on meeting agenda	Secretariat introduced new member to the working group Shylaja Devi, from Sime Darby who will be replacing Dr. Shahrakbah Yacob. The previous meeting minutes was reviewed and endorsed. Secretariat then briefed on agenda for this meeting to all members. New ToR (Annex 1) for the extension of ERWG was reviewed and agreed upon by all members. EWRG is in opinion to have more meetings conducted (as and when needed) along with the work frame. Several topics proposed under AOB: • Potential review for upcoming P&C • Stranded assets • Outreach Programme	
2.	Updates from secretariat	• Reviving Peatland Working Group (PLWG) The PLWG will be revived as PLWG-2 and is expected to have their 1st meeting on March or April 2017. Further on this discussion is under Point 3 of this minutes. • Smallholders Strategy Regarding land-clearing by smallholders prior to RSPO certification and development of Smallholder's Strategy, Yohanes Izmi (Director for Strategic Project, RSPO Secretariat) was invited to explain this on the next day (25/1/2017). Further on this is under Point 6 of this minutes. • RSPO Next Feedback given by ERWG members was not included in RSPO Next document and secretariat was asked to seek clarification on this matter from Jan Van Driel, Head of Certification (RSPO). The working group members felt the need for a guidance document is necessary.	1st PLWG-2 meeting took place on 20th-21st March 2017 at Capri Hotel. Secretariat to do a quick cross-check on the RSPO NEXT version which the group provided comments and the revised

		Working group also questioned for clarification for emission from organisational level and the 'tool' used to calculate this emission to be explained. ERWG has strong concern over lack of clarity and guidance given for downstream members for emission monitoring. ERWG suggested to call Yan and provide detailed clarity. Concerns were brought up regards to the statement of 'RSPO endorsed tool' from this document. Suggestion was raised for downstream calculator to be adopted from GHG Protocol. Working group felt that RSPO Next even RSPO Red is seen to have similar issue in term of lack of demand from the market. Following further communication with Jan Van Driel (24th January 2017), Jan Van Driel did respond to Chair via email to acknowledge receiving comments from working group (the secretariat was not in loop in the email exchange) and some of the comments has been incorporated in Next document. Discussion continued as to compare the list of proposed changes from working group and the changes that was incorporated in RSPO Next. Chair suggested that working group should be ahead and volunteer to come with guidance relating to reporting of GHG. For GHG reporting point 1.1, no guidance was provided on how to report on GHG figures. Chair's suggestion was to do a summary report comprising of introduction to company with nature of operation and a table with all emission figure across all eligible operation (mills with supply base and land bank). That way, monitoring of emission reduction can also be done and this will ease audit process. Also discussed was on 'Targeted reduction' as to how this will be reported, whether there is a timeline and if guidance is required, the requirement of having biogas installation by 2020 and the baseline from year 2005 to summarise emission over all operation. Suggestion from Chair to appoint a short-term consultant or secretariat to consolidate the scopes that should be discussed within this document in upcoming meeting with recommendation.	guidance document, on which comments of the group accepted. Secretariat to clarify if the document is endorsed and whether BoG endorsement is required. The group to do a quick check through ACOP submissions information on GHG monitoring and reporting, as well as methodology by downstream players

		WG also feels that the voice from supply chain member is highly needed. Suggestion from working group to check ACOP reporting to find out how supply chain emission is done to which secretariat explained that for now ACOP reports does not have details on how supply chain GHG emission is calculated. Also clarified was in line with developing better ACOP reporting system, supply chain GHG emission scope will be added in future. From a quick check secretariat explained that as for now not many big supply chain companies are reporting on GHG emissions. Secretariat suggested to narrow down the known companies that are reporting and to write to them, to check on how supply chain emission is done. The group feels that there is a need to seek third-party (consultant) services in providing guidance on reporting format for GHG and peat related criteria of RSPO NEXT. Suggestion to check with Winrock International for potential initial suggestions on the matter. • HCS Convergence (HCS approach and HCS+) The group is informed that information and updates Secretariat gotten is the new version of toolkit (Version 2) would be launched and release in May 2017. However, there is no access to the toolkit yet. • Feedback from GHG & Peat Training Workshop A GHG & Peat training conducted in Bogor Indonesia in December 2016 with 38 participants. Feedback received to provide more guidance for drainability assessment, walkthrough of palmGHG, rehabilitation and restoration of peat, to have CBs to be briefed or trained (perhaps during CB workshop) on how to identify peat and checking for palmGHG peat data. Recommendation also to have class-room training tied with site visit. • Feedback from RT-14 A total of 42 participants attended the GHG training conducted during RT-14. Overall feedback was good. RT-15 is tentatively scheduled in end of November this year in Bali, Indonesia.	Secretariat to check with Winrock International if initial quick check could be done in providing suggestions on reporting format for RSPO NEXT.

		• Updates on budgeting The budgeting and expenditure figures presented is for (FY17) July 2016 - June 2017. Budget is excluding PLWG-2's expenses. Budget for online-based PalmGHG Calculator and PLWG-2 would kick in next FY.	
3.	Peatland Working Group (PLWG) – 2	Referring to the ToR for PLWG (Annex 3 of 10th ERWG Meeting minutes), Secretariat called out for interested members from ERWG - excluding the existing members of Peat Subgroup as well as suggestions for new members. The Chairman gave a quick history of the previous PLWG which operated from 2010 – 2012 and came up with 2 BMP manuals for existing oil palm cultivation on peat and management and rehabilitation of natural vegetation associated with oil palm cultivation on peat. The upcoming PLWG – 2 will also be taking over issues on drainability assessment from ERWG since this issue touches beyond emission reduction and is more relevant with the work scope of PLWG-2. The Chairman listed out members from previous PLWG to select potential members for PLWG-2. The proposed list for potential representatives are from: • Wetlands International • WWF member (potential) • KLK – suggested AAR • SIPEF (potential) • Goodhope • Apical • Sime Darby • Asian Agri • Bumitama • University of Tanjungpura, Pontianak • GEC • Edi Suhardi (representing Indonesian grower) Chairman informed the group that composition of PLWG-2 will be kept within 12 membership. As and when needed for an expert's input the 'document to be reviewed'	Secretariat will send out invitation to all proposed members. Secretariat to make a public announcement on the revival on

		shall then be sent out especially on topics such as drainage & irrigation and water management. Several suggestions came up including for representative from Latin America or Ghana to be part of PLWG-2. Suggestion to take up monitoring from GHG considering ERWG will be dispensed by end of this year. Also, to have representative from smallholders in the working group taking into account smallholders' challenges with peatland as well as representative from Department of Drainage and Irrigation (DID) Malaysia. Proposed date for the first meeting is tentatively on 20th and 21st March 2017 which will be around the date for Peat Workshop. Updates from C 5.6 subgroup meeting • Progress update with palmGHG Version 3 Secretariat proposed to subgroup the idea of developing a phone based application as a solution to resolve laptop to palmGHG compatibility issues and challenges among smallholders who do not own laptop and computer facility. The subgroup decided that the current installer needs to be improved meanwhile if required concurrently develop a phone based palmGHG calculator. The tendering should get a minimal 3 proposals before finalising. • Discussion on paper by SEnSOR programme Secretariat provided some background to this, in which SEnSOR programme is a seed funding project supported by RSPO carried out independently. At the very initial stage, SEnSOR programme was briefly brought into the group attention with some recommendations given for some potential research needs, especially on the conservation sequestration rate. Of which, SEnSOR came back with two key research topics of interest, relating to GHG i) Desktop review of PalmGHG Calculator; and ii) preliminary study of carbon stock of forest patches in oil palm plantation. The group raised the concern of the messages going out along with the publish of this report same time with the launching of RSPO new version of Calculator, without close	the peat group and calling for membership C5.6 subgroup with PalmGHG developer team (Cecile and a small group) to do a review of all the reference value and cross-check on updated default values used within Version 3 of the calculator. These results will then be shared with author for further action.

		insight by the group. The main concern would be the review was done without take note on the concurrent review process of the group in improving the calculator. The group went through the study and concluded that there is a need for the author to provide clarification on following key points: 1) Basis the study falls on concluding the ineffective of the calculator in relation to footprint accounting; 2) The definition of footprint accounting; 3) The failure of the study in recognising the objective and scope of estimation of the calculator, in drawing the conclusion 4) Inaccurate concluding statement on high uncertainty on fertilisation application, POME treatment and land use change; where the analysis results (some) shows other wise 5) There is a gap of the study recognising and identifying which version of the calculator is used within this study has make the findings and conclusion weak in presenting the key message. The group also feels C5.6 subgroup or the calculator developing team should do a brief cross-check of all default values and references made within the study consistent with RSPO Calculator and communicate back to SEnSOR Program. There is also a need for sensitivity assessment of the report, or to which the uncertainty of all default use. Way forward, RSPO Secretariat (technical and impact division) would need to be closely collaborated of all related studies.	The Secretariat to express ERWG's concern over the study to Jennifer, SEnSOR Programme
4.	Submission monitoring for C 5.6 and C 7.8	• Submission monitoring for C 5.6 & Data Analysis (Annex 2) Secretariat presented the submission analysis. Compliance submissions is 43% and 65% for year 2015 and 2016 respectively. The submission compliance monitoring at the point of presenting in the meeting, does not include a cross-checking on mills auditing process done through using P&C (2007), especially in Indonesia due to the delayed in NI process. Overall, compliance submissions shown a great improvement comparing year 2016 to 2015.	Secretariat to send out reminders for all outstanding reports to be submitted by 30th April 2017. Secretariat need to have communication with CBs and auditors on the compliance and verification needed for C5.6, this

		Another reason of low compliance submission for year 2015, is misunderstanding and interpretation of what is voluntary in relation to C5.6. Public reporting is voluntary but monitoring and submission to Secretariat is mandatory. The working group discussed and agreed that reminders should be sent out to non-submitters. This should include serious warning (leading to complaint) to companies, urging for immediate action. This could include mentioning the fact that future non-submitter will be revealed through RSPO Website. Henry Cai also presented the findings of emissions data received through PalmGHG report submission. This analysis was presented during RT14 in Bangkok. There are concerns raised over the needs to further analyse the reason of non-submission against the performance of auditors. This should include some sampling of audit reports for NC issues for non-submission. This is crucial for the group in preparing the effectiveness of full implementation of the calculator by the end of the year. Working group was in discussion on the need to prepare a list of key items to be verified by CBs similar to an auditor's checklist as guidance for CBs. Public reporting requirement as agreed would be able to provide enough data for future analysis. Data to be included as agreed would be captured within the C5.6 section of the audit report. • Submission monitoring for C7.8 (Annex 2) Monitoring was done with cut off of December 2015 and December 2016. A total of 15 submissions was received for 2015 and 45 submissions for 2016. From these submissions, analysis of data can't be done since the sample submission received in 2015 was done based on simple GHG assessment with incomplete data. Only 17 samples can be used from the total approved submissions.	include the public reporting requirement for auditing starting 1st January 2017.

		Challenges in implementation and monitoring for C 7.8: ✓ To verify the local custom classification and carbon stock values – i.e. there is submission using 50% lower carbon stock value for disturbed forest comparing to RSPO default. ✓ Lack of GHG assessment ✓ Confusion between the PalmGHG and simplified excel has causes unnecessary delay on the submission of assessment. To avoid confusion, clarification provided within the new revised procedure and re-named it to New Development GHG Calculator. ✓ Different way and approach in presenting GHG assessment data. ✓ Most of the submissions lacking either the emissions from mill operation completely, or with only emission from POME. As there is confusion on how emissions from mill operation could be estimated based on assumption or even if this is needed. There are some concerns over the uptake of methane capture as a practice encourage by RSPO. The group feels that there is a need to further analyse the impact of using the tool, in leading to reduction of conversion of high carbon stock areas and/or low carbon practices. This could also be done through analysing the projected emissions from this new planting versus the emissions from existing plantation (C5.6). Submissions to RSPO Secretariat does not lead to direct posting on website, as submissions would need to be verified as 'go-to-go' for all three key components of: i) NPP summary document and SEIA assessment; ii) HCV and LUCA assessment; and iii) GHG assessments. 2016 – NPP, 45 submissions with 17 posted in website 2015 – NPP, 31 submissions with 12 posted in website Suggestion from Chair to form a small composition among working group to help secretariat with analysis for C 7.8. The volunteered names are: • Marcel Silvius (Peat) • Foo Siew Theng • Joseph Hutabarat	RSPO Secretariat to create dropbox for sharing of relevant reports to respective members to assist in analysis the data.

		• Henry Cai • Olivier Tichit (Methane capture)	
No.	**Main Discussion Point**	**Description**	**Action Items**
Wednesday, 25th January 2017			
5.	Recommendation for NC issued under C7.8 for existing certified mill	Secretariat informed the group that there is member experiencing problem with NC issued for not conducting GHG assessment for new planting areas within certified scope prior land clearing. Issue was, the company did not conduct GHG Assessment prior to land clearing under the assumption that its already a certified area. Recommendation from WG was for the company to do a retrospective assessment for the portion of certified land which was cleared for OP cultivation.	Secretariat to communicate this to CBs
6.	Smallholders Strategy by Yohanes Izmi, Strategic Project Director, RSPO Secretariat	Director of Strategy Projects, Yohanes Izmi from RSPO Secretariat presented on the updates for Smallholder's Strategy, progress is still under construction hence working group were updated accordingly. Several workshops were conducted to gather inputs from key stakeholders and the outcome was captured in a discussion paper submitted to the Board. The findings from all the workshop were relatively the same issues on capacity building for smallholders, incentives for smallholders, legality issues and challenges faced by smallholder for technical support. In overall, 29 priority area were identified and the current challenge faced from the secretariat is to co-ordinate how these actions would fall into respective departments. Several questions were raised during Q&A session. Firstly, was to understand if prior to developing this strategy was there a smallholder's distribution study done, reason being many smallholders still fall under the category of farm scale plantation (less than 5 ha) thus relaying greatly on the support of middle man. Understanding such diversity among smallholders will then help in developing a targeted strategy. Secretariat explained that given the short time line to deliver this project, no study of such outcome was conducted to which then the regional workshops was conducted with aim to understand the said issue.	

		Land related legality issue is the most common challenge among the smallholders and this is currently dealt by the FFB Legality & Traceability Task Force (FLTTF) lead by Wilmar and Sime Darby. They have developed a 3-tier system and other working group were encouraged to check this 3-tier system to ensure related works will then be linked and aligned. Another major gap discussed is when 'no working-government' or approving authority are in place especially for smaller palm oil producing countries. Resolving land title issues for such cases are a big challenge. The secretariat needs to sort a solution for this since the strategy is being developed for smallholders. Question was raised on Strategy Target 5 (Providing smallholders with technical assistance) as to how current smallholder and those who intend to be certified are aware of the available technical assistance. Secretariat responded as this will be addressed via training material (multi-lingual) that is being developed by a consultant from first quarter of 2017 till first quarter of 2018. This consultant has global network (country by country mechanism) and they are expected to reach out by engaging trainers and local partners. Suggestion from working group was to also engage with local organisation as regional representative to oversee the delegation of these task rather than to have one focal working around the world. This will also assist in providing clarity to the Board as they are trying to understand the implementation plan of this strategy. Working group were also in discussion as to the need for more assistance within the Secretariat to support this strategic project.	
7.	Resolution 6F from GA-13	Secretariat presented Resolution 6F of proposing for a simplified NPP for smallholders in 6-month time (by May) and in the interim NPP process is not required by smallholders (scheme and independent) until the closure of resolution 6f. Some of conditions set are for the review process for this simplified guidance to have consultation with the Smallholders Working Group (SHWG) and the feasibility of the	Refer minutes' item 8 below

		guidance. Once the guidance has been launched there will also be several series of engagement and training sessions. Concern raised by working group on how 'sufficient' is seen as enough when we say "sufficient guidance to be provided" and also challenges in getting land cover map from scattered smallholders including data on fertiliser. To understand this, the working group also suggested to field test the simplified guidance with different smallholder setup. Secretariat explained on the flow of process in developing this guidance document which starts with looking at the current gaps within the NPP procedure and the guidance developed which requires a review. Following that would be to develop a draft and circulate for comments from all working groups.	
8.	Simplified C 7.8 guidance for smallholders (Annex 3)	Secretariat has circulated two draft documents to be used during this meeting where one is discussion paper to explain the proposed changes to this simplified guidance and the excel document being the simplified version. The group agreed that the simplified procedure would only be made applicable to independent smallholders. Scheme and associate smallholder is to complied using the GHG Assessment Procedure for New Plantings with assistance from company(s). There were discussions on the practicality and value of applying GHG assessment procedure for associate and scheme smallholder with new plantings areas lesser than 50 ha. Hence, the group agreed that the simplified procedure should and could made applicable to scheme and associate smallholders with new plantings areas lesser than 50ha. Any areas larger than 50 ha under scheme or associate would be applying GHG Assessment Procedure for New Plantings. It is also agreed that simplified GHG Procedure is not applicable to independent smallholders with cumulative new development areas larger than 500ha.	RSPO Secretariat to draft the Simplified GHG Procedure for New Plantings based on concept discussed from the meeting and circulate for comments.

		In view of the capacity and resource constraints of independent smallholders, the group agreed that the land classification could be based on the findings from Land Use Change Analysis (LUCA) process, supported by RSPO. A decision-making flow chart was developed determining the level of GHG assessment required based on areas where new plantings will take place. Refer Annex 3 for the simplified decision-making flow chart.	
9.	Submission of palmGHG report using alternate tool	Secretariat raised the topic on some growers that are still submitting GHG reports using different calculation method and not PalmGHG Calculator. The group agreed that since there is no any endorsed equivalent tool accepted by WG even three different tools presented by Sime Darby, NBPOL and United Plantation, due to the difference calculation methods applied and the system boundary for accounting. The group raised that to check if there is any proper communication with the members on the reason of which WG is not endorsing the tool.	RSPO Secretariat to communicate to the member on WG's decision and urges for submission in accordance to PalmGHG Calculator.
10.	Best Management Practise (BMP) module from Winrock International (Annex 4)	Secretariat had circulated the BMP proposal from Winrock International for comments prior to the meeting. Several comments were received and has been communicated with Winrock to be included as part of the proposal. Secretariat also suggested to have representative from Winrock to present their work updates to working group as a way to monitor the outcome of this module and raise concerns if any as a group. Decision made to made the focus on emission reduction scope, with carbon credits and global financing kicks in later. Decision made to also change the current title by removing the word 'operational' since the module will include items such emission avoidance that falls beyond the operational scope.	Secretariat to work with Winrock International to remove the word 'operational' from the title
11.	ToR for Development of Guidance for Drainability Assessment (Annex 5)	A draft TOR (as annexed) developed and circulated for comments from members if the group to engage with a consultant. The work outcome will be to produce a simplified drainability assessment, to access the adequacy of the current guidance in BMP for	

		existing oil palm cultivation for peat and if further guidance is needed and applicability of Duflow Model. The Duflow model is claimed not applicable for tropical peatland hence, the applicability of the model needs to be assessed. Else, a different approach will then need to be developed from scratch with guidance. There was a concern raised over resources wastage in continuing to use Duflow model given that its already not suitable with tropical peatland. Dr.Mukesh proposal was discussed as an alternative to do drainability assessment. However, given the current BMP is mentioning Duflow model hence there is still a need to do an assessment with the model. Additionally, audits will also be done using BMP hence auditors will be checking for Duflow model assessment in which failing to comply will lead to non-compliance. Timeline for work completion proposed by ERWG (subjected to decision made by members of PLWG-2) would be before September 2017.	Secretariat will tender for consultant based on the ToR produced from this discussion.
12.	AOB - Recommendation for Principle and Criteria (P&C) Review	Recommendation for Criteria 5.6 and 7.8 will be gathered from working group and these items will be discussed during the next meeting. Recommendation on peat related issues will be gathered from PLWG-2 during the 1st meeting in March.	All ERWG members to send their comments/concern in relation to review of P&C to RSPO by 28th of Feb.
13.	AOB – Stranded Asset	Stranded asset refers to area in land bank that are peat and/or forest, proposed discussion was to look into the management plan of this stranded asset. Chair proposed not to discuss this for now considering there aren't any plans to develop guidance on management of stranded asset. Also suggested was to review the analysis from C7.8 on how growers are currently managing their land banks and then to evaluate if there is a need for guidance on managing stranded asset.	
14.	RSPO Outreach (Related to ERWG)	Upcoming Peat Workshop similar to Bogor to be held in Kuala Lumpur, Malaysia in March 2017 and potentially will be before the 1st PLWG-2 meeting. There will be CB workshop, tentatively in April 2017. By practise 30 minutes will be allocated for session on GHG.	Secretariat to circulate a calendar of activities relating to ERWG for 2017.

15.	Next meeting	A doodle poll for the next meeting in the week of 2nd and 3rd of May will be send out by secretariat.	Secretariat to send a doodle poll for the next meeting.

Annex 1: TOR for Extension of ERWG

Terms of Reference

Extension of Emission Reduction Working Group

1. Main Purpose

   To support and oversee the full implementation of Criterion 5.6 and Criterion 7.8 of RSPO P&C 2013.

2. Scope of Work
   - Oversee the implementation and promotion of PalmGHG Calculator Version 3 and assess any need for refinement.
   - Oversee the implementation of GHG Assessment Procedure for New Plantings and assess any need for refinement.
   - Oversee the compilation of best management practices to minimise and reduce operational emissions from palm oil production.
   - Provide recommendations on plans for filling any identified gaps within current monitoring, reporting and auditing framework for C5.6 & C7.8 (if any).
   - Provide input to the GHG aspects of RSPO Next, Incentives Taskforce, SHWG and other processes as required
   - Review trends in GHG emission from RSPO members – based on reporting under 5.6 and 7.8.
   - Provide recommendations for consideration in the next revision of the RSPO P&C linked to GHG and related issues.

3. Expected Outputs
   - Recommendation paper on guidance required for gaps identified within current monitoring and reporting framework for C5.6 & C7.8.
   - Summary report on observations made on the full implementation of C5.6 & C7.8
   - Compilations of best management practices to reduce operational emissions from palm oil production.
   - Report on trends in GHG emission from RSPO members – based on reporting under 5.6 and 7.8.
   - Recommendations for consideration in the next revision of the RSPO P&C linked to GHG and related issues.

4. Meeting Frequency

   Members of this working group expected to meet once every six months.

5. Composition

   All members of existing ERWG remains. The working group is composed of 13 members with representation that reflects the sectoral and geographical composition and balance of RSPO:

   - growers (6)
   - environmental organizations (2)
   - social organizations (2)
   - consumer product manufacturers or financial institutions (1)
   - processors and traders (1)

- technical expert (1)

There will be two Co-Chairs, one each selected from growers and environmental NGOs.

There will be sub-groups linked to C5.6 & C7.8 which will work between meetings of the whole group as necessary.

Quorum is reached when majority of the members are present physically or via telecon. Meetings can be held physically or through teleconference.

All members should have technical skills in one of the following discipline, greenhouse gas accounting and reporting, GIS and remote sensing, plantation and management, soil science, agronomics or corporate social responsibility. The working group will rely on the experience of the technical staff of RSPO members. However other research institutions or technical experts may be invited to participate, at the recommendation of the working group members if they bring specific expertise in the disciplines mentioned above.

All submissions made available to the working group are considered confidential unless specified otherwise.

Role of secretariat

Secretariat should support the working group and facilitate interactions with the members and stakeholders.

6. Active Period

The working group will remain active throughout the period of 1-year upon the expiry of previous ToR which ends on 31st December 2016. The task mentioned above should be effectively completed before 31st December 2017.

Annex 2: C 5.6 submission monitoring

PalmGHG Submissions

- Submission cut-off date: January 1, 2017
- Certified mill data cut-off date: Dec 31, 2015 & Dec 31, 2016
- Removed FELDA for 'Apple-to-apple' comparison
- FELDA (certified versus submission) 2015 (55:27) 2016 (55:13)

	2015	2016
Certified Mill	301	331
Total Submissions	142 (47%)	234 (71%)
Compliance Submission	129 (43%)	215 (65%)
Non-compliance Submission	13	19
PalmGHG Submission	128 (90%)	230 (98%)
With LUC	74 (58%)	167 (73%)
With Peat	46 (36%)	80 (35%)

Two consecutive year submission	102
Two consecutive non-submission	84

		Submissions				
	Certified Mill	2015 (NC)	2015 (Certified)	2016 (NC)	2016 (Certified)	Certified Mill
Brazil	4	0	1	0	0	5
Cambodia	2	0	1	0	1	2
Colombia	5	0	3	4	4	7
Costa Rica	3	0	0	0	1	3
Ecuador	1	0	0	3	0	1
Gabon	0	0	0	0	1	1
Ghana	2	2	2	0	2	2
Guatemala	2	0	0	0	0	3
Honduras	2	0	0	0	3	3
Indonesia	167	9	70	11	112	187
Ivory Coast	1	0	0	0	1	1
Madagascar	1	0	0	0	0	1
Malaysia	91	2	36	1	82	94
Papua New Guinea	14	0	10	0	3	14
Solomon Islands	1	0	1	0	0	1
Thailand	5	0	5	0	5	6
Total	**301**	13	129	19	215	**331**
		142		**234**		

	2015	2016
Reporting format		
Own report	14	20
Accdb	44	54
Pdf	69	152
Excel	1	4
ISCC	10	
Custom	4	4
Calculation Option Applied		
Option 1	37	22
Option 2	1	13
Option 3	54	63
Option 1 or 2	36	132
Total Submissions	142	234

C 7.8 submission monitoring

C7.8 Submissions

- Submission cut-off date: Dec 31, 2016
- Base on 2016 submissions,
  - Without MC: ~13.46tCO2e/ha with STDEV of 3.27tCo2e/ha (17 samples)
  - With MC: ~1.23tCO2e/ha with STDEV of 15.19tCo2e/ha (only 3 samples)

	Dec-15	Dec-16
Total Submissions	15	45
Indonesia	14	36
Malaysia	1	2
Latin America	0	3
Africa	0	4
Pending Clarification	5	11
Presence of Peat	0	6
Development on Peat	0	*1
Use of HCSA/HCS+	1	8
Internal Assessment	9	11
External Assessment	6	34
With Methane Capture	0	4
Without Methane Capture	15	41

* Pending clarification

Annex 3: Simplified guidance for GHG Assessment Procedure

Simplified GHG Assessment Procedure for New Plantings

1. Introduction

Criterion 7.8 of RSPO P&C 2013 requires GHG emission assessment to be conducted for any new plantings prior to actual land clearing activities. This includes new planting by smallholders (be it scheme, associated or independent smallholders).

RSPO GHG Assessment Procedure for New Plantings is developed by RSPO's Emission Reduction Working Group (ERWG) to provide guidance on how to conduct the required GHG emission assessment. As the procedure is developed with large industry players in mind, little attention has been paid to the practicality and feasibility of the procedure to be applied to smallholders who possess much less resources. This requirement is becoming an impediment to new smallholder RSPO certification as well as a risk to the existing certified smallholder groups.

Recognizing this, the ERWG has developed a simplified GHG Assessment Procedure for New Plantings to help smallholders to comply with criterion 7.8. This simplified procedure is developed based on the key findings from the GHG Assessment submissions through NPP:

i. Transformation of peatland to oil palm plantations leads to significant release of carbon and greenhouse gases to the atmosphere. This is due to peat oxidation caused by drainage and improper water management.
ii. Transformation of land cover with high carbon stock, i.e. disturbed forest to oil palm leads to significant increases in greenhouse gas emissions.

From the two key findings mentioned above, ERWG made the assumption that should no new planting is proposed on Peatland and/or Vegetation Coefficient 1.0 land the proposed development is assumed to have avoided land areas with high carbon stocks.

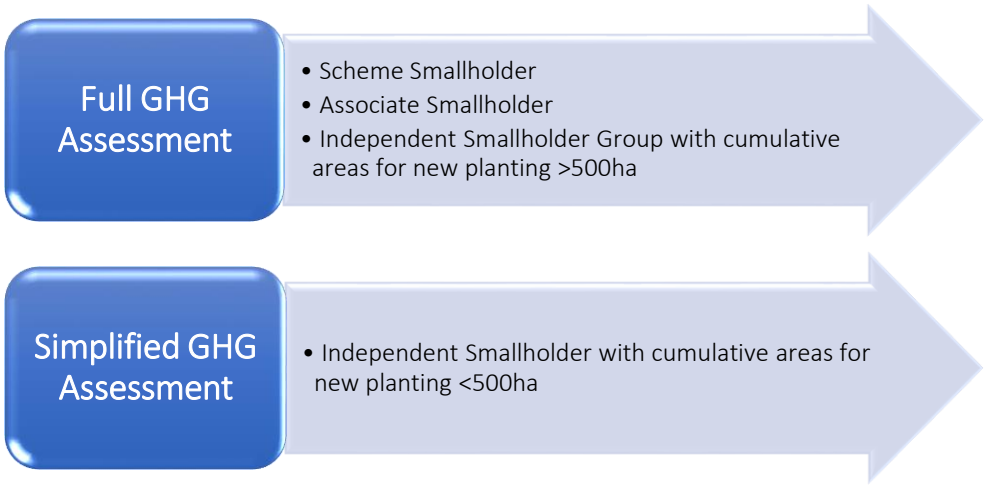
Acknowledging challenges (technically and financially) face by Independent Smallholders in conducting comprehensive land cover and land use mapping using satellite data; ERWG proposed to aligned the mapping works through RSPO Land Use Change Analysis Process. With the adoption of the LUCA into this simplified procedure, classification of the land cover into the coefficient categories will be based fully as per the classification of RSPO Remediation & Compensation Procedures, 16th Nov 2015.

2. Applicability

This guidance is ONLY applicable to independent smallholders, certified through group certification that have plan for new plantings on cumulative land area(s) less than 500ha. The planned area is yet to be cleared and is currently not planted with oil palm. This 500 ha is including both:

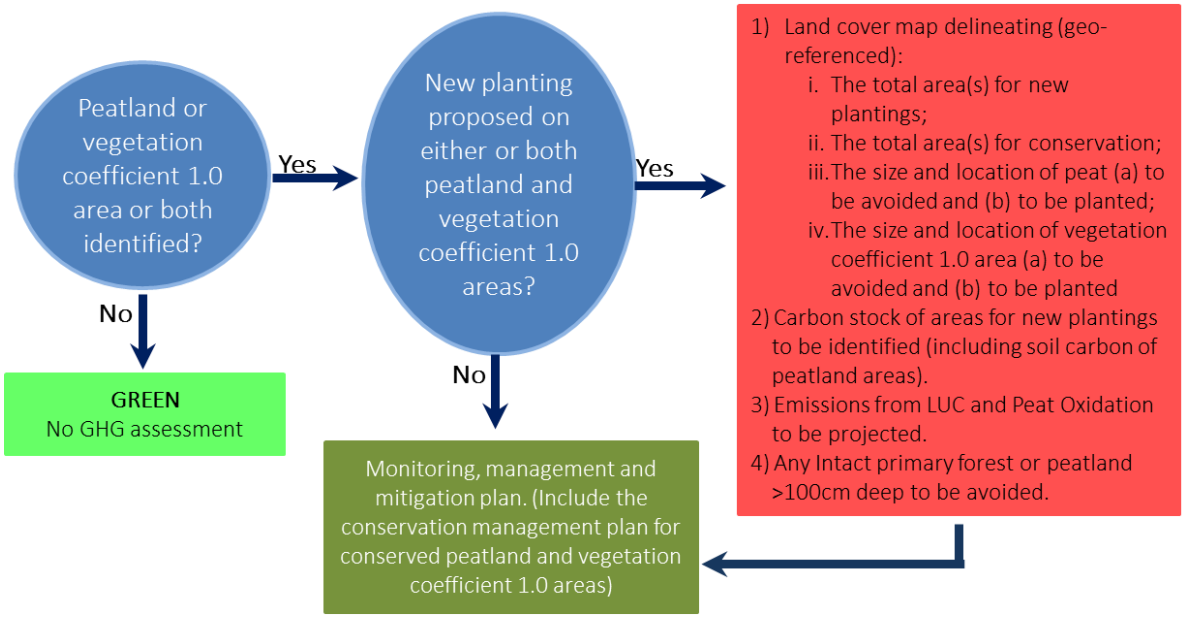
i) Area(s) belonging to existing member(s) of the group
ii) Area(s) to be planted by new member(s) of the group.

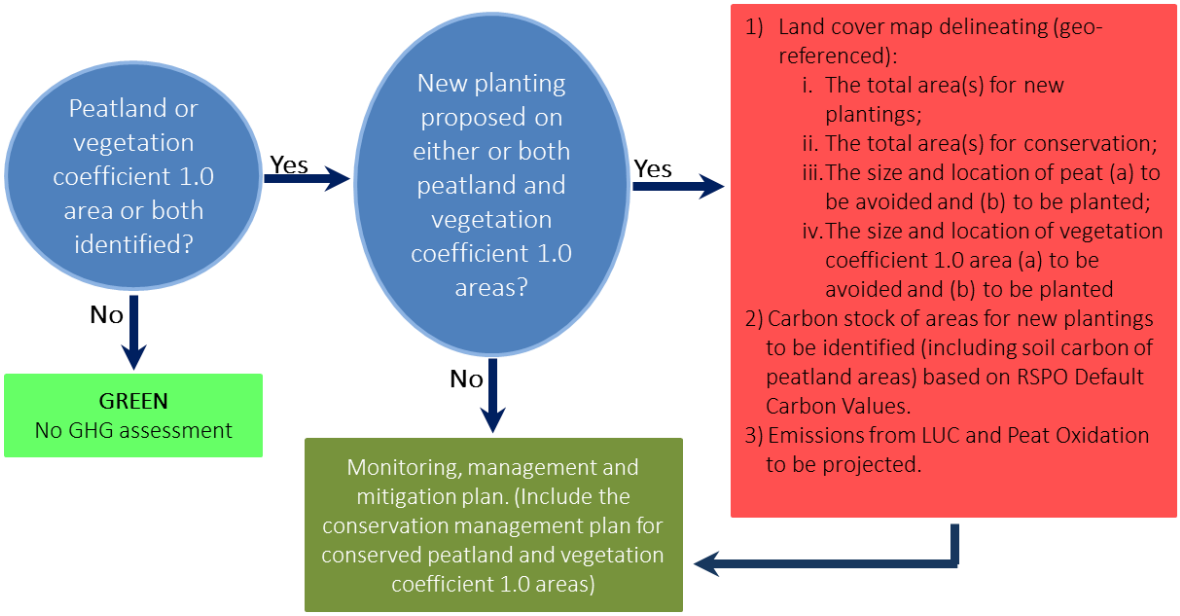
Scheme smallholder, associate smallholder and independent smallholder with new planting of >500 ha cannot use the simplified procedure and must adhere to the full GHG assessment procedure.



3. Simplified GHG Assessment

Applicable smallholders can refer to the following Decision Tree for specific information and assessments required based on decision(s) made on areas for new plantings.





4. Reporting of GHG Assessment

Reporting of GHG assessment using this Simplified GHG Assessment Procedure for New Plantings shall be reported through standard NPP report, using standard template (Refer Annex 1) in accordance with RSPO NPP for Independent Smallholder (May 2017).

Annex 1. Standard Template for Simplified GHG Assessment for New Planting

Report of Simplified GHG Assessment for New Planting

A. Preliminary information check

A1. The total area (ha) for new development: ☐

A2. Is there presence of peatland? ☐ Yes, size (ha)_____ ☐ No

A3. Based on result of Land Use Change Analysis, is there Vegetation Coefficient 1.0 land category presence? ☐ Yes, size (ha)_____ ☐ No

Note:

*If answer for question 1 and 2 is 'no', no further assessment required. No need to fill the following sections.

*If answer to question 1 or 2 or both 1 and 2 is 'yes', proceed with completing Section B.

B. Indicative new plantings

B1. Is there proposed new planting on peatlands? ☐ Yes ☐ No

B2. Is there proposed new planting on Vegetation Coefficient 1.0 land category? ☐ Yes ☐ No

Note:

*If answer to question 3a and 3b is 'no'. Proceed with monitoring and management plan. No need to fill the following sections.

* If answer to question 3a or 3b or both 3a and 3b is 'yes', proceed with completing Section C & D.

C. Information on new development area

Geographical Location (town, district/state, country): ☐

Total area (ha)	Size of HCV (ha)	Proposed Coefficient 1.0 land conserved (ha)	Proposed new planting area (ha)

Total peatland (ha)	Size of peatland conserved (ha)	Size and location of peatland proposed for new planting	
		(ha)	(GPS coordinates)

Note:

i) Please take note that for any proposed new planting on peatland, Criterion 7.4 of P&C shall be strictly adhered to, in relation to extensive planting on peat is to be avoided (no more than 20% of the total area).

ii) Intact primary forest is to be avoided.

iii) Peatland >100m depth is to be avoided.

D. GHG Assessment for new planting areas

GHG Assessment of Proposed New Planting on Vegetation Coefficient 1.0 Category					
Vegetation Coefficient Category	Above-ground & Below-ground Carbon Stock[1] (tCarbon/ha) (C)	Emission (tCO2e/ha) (D)	Total proposed new planting area(s) (ha) (E)	Total ABG & BGB carbon (tCarbon) (CxE)	Total LUC emission (tCO2e/yr) (DxE)/25
1.0	128	469.33			
0.7	?				
0.4	?				

Peat depth (cm)	Peat Soil Carbon[1] (tCarbon/ha) (C1)	Water level (cm) (D1)	Total proposed new planting area(s) (ha) (E1)	Total peat soil carbon (tCarbon) (C1xE1)	Total peat oxidation emission (tCO2e/yr) (0.91xD1xE1)
	2,115	100			

E. Statement of Acceptance of Responsibility

I, the undersigned acknowledged this document serves as the summary of GHG assessments for the below mentioned areas and accepted responsibility for the assessments and management plan developed.

Name of Group:

Name of Group Manager:

Name of Person Responsible for this assessment:

Position:

Signed:

Date:

[1] RSPO default carbon values as stated within RSPO GHG Assessment Procedure for New Planting, Version 3.

Annex 4: TOR for Compilation of BMP for emission reduction

Terms of Reference

Compilation of Best Management Practices to Reduce Operational Emissions from Palm Oil Production

1. Objective

To compile existing in-practice and innovative best management practices in the palm oil industry to reduce carbon emissions from operations.

2. Background

In year 2013, RSPO has had compiled a series of case studies on voluntary actions undertaking by RSPO members in reducing operational emissions from Palm Oil Production through engaging Eco-Ideal Consulting Sdn Bhd, as the consultant. This compiled series of case studies, titled 'Reducing Operational Emissions from Palm Oil Production – A compilation of case studies' is available for download from www.rspo.org.

The compilation of case studies aims to provide information to RSPO members on existing actions or plan that could be adopted or undertook to reduce greenhouse gas emissions from the production of palm oil. As of June 2016, 5 case studies documented and shared by RSPO. The Emission Reduction Working Group (ERWG) sees the need to continue adding the series of case studies to provide more comprehensive list of case studies to RSPO members.

In this round of compilation of best management practices for reducing operational emissions from palm oil production, there is a need to go beyond the circle of RSPO members, to the wider players of the oil palm industry.

3. Expected output

A report containing case studies (in addition to those documented by RSPO previously, in referred to RSPO 'Reducing Operational Emissions from Palm Oil Production – A compilation of case studies') of the best management practices employed by RSPO members to reduce their greenhouse gas emissions.

Scope/ Key areas:

-relating to land conversion; peat management; POME; fertiliser (manufacture and N2O); conservation; mill technology; yield enhancement

The case studies should include details on the specific practices and/or activities; why and how the initiatives started; impact to business (operational and financial); projected emission reductions; projected investment and challenges; and platform and/or contact information for accessing to more information. Each case study should be informative enough to enable the reader to

understand and assess the options available to them for adoption and be accompanied with the appropriate visuals.

In collating these case studies, the consultant should

- Identify list of existing and innovative practices (methodology for identification to be proposed by consultant).
- Screening of existing information (e.g. CDM Projects)
- Look a range of application types and costs that can be practical to a grower/miller.
- Based on data collection on first hand interviews (email, phone or face to face), supported by literature. Where practical, site visits are encouraged.

4. Preparation of final document

The document should include the following sections:

i. An overview of the overall development of GHG reduction practices within the palm oil sector over the years. Some statistical analysis and reporting will be compiled from publicly available data sources to present the current status, trends, driving forces and influencing factors.
ii. An overview on technological innovations that are being adopted by the industry and investments needed to adopt such technology.
iii. Selected case studies that cover the elements of why and how the initiatives started, some technical description of the projects, impacts and benefits, projected emissions reduction as well as lessons learnt.
iv. A section on recommendations and references for additional information.

5. Timeline:

Work plan with a table of content to be developed two weeks from appointment.

A draft outline of the report with completed case studies must be made available by Nov 2017.

Final report must be made available by March 2017

Annex 5: TOR for development of guidance document for drainability assessment

Terms of Reference

Development of guidance for peat drainability assessments for complying with Indicator 4.3.5 of Criterion 4.3

1. Objective

To develop practical and detailed step-by-step guidelines for a peat drainability assessment to determine the long-term viability of the necessary drainage for oil palm.

2. Background

Indicator 4.3.5 of RSPO Principle & Criteria (2013) is stating that 'drainability assessments shall be required prior to replanting on peat to determine the longterm viability of the necessary drainage for oil palm growing'. This indicator requiring RSPO members cultivating on peat to conduct a drainability assessments prior to replanting to determine the suitability. If the assessment indicates high risk of serious flooding and/or salt water intrusion within two crop cycles, growers and planters should consider ceasing replanting and plans should be in place for appropriate rehabilitation of alternative use of such areas.

In view of the need to provide guidance to RSPO members for ensuring sustainability, the Manual on Best Management Practices (BMPs) for Existing Oil Palm Cultivation on Peat is developed and published in 2013. Current guidance on how to conduct a drainability assessment, including the use of the 'Duflow Model', is captured under Chapter 3.6 (Replanting Practice) of the BMP.

It came to the attention of the RSPO Emission Reduction Working Group (ERWG) that current guidance provided in the RSPO Manual for conducting the drainability assessment is difficult to understand and may be insufficient to fulfil the requirements under indicator 4.3.5.

We seek for a robust and 'easy to understand' guidance on how 'high risk of serious flooding/salt water intrusion within two crop-cycles' can be determined by growers for their oil palm cultivation on peat. To determine the time that it takes to reach the 'point in time' of serious flooding, at least the following variables need to be known:

1) the drainage limit, considering tidal fluctuations of the water table.
2) the total thickness of the peat layer and the thickness of the peat layer above the drainage limit
3) the soil subsidence rate
4) the period of time that it takes for the peat to subside to the drainage limit

3. Expected output

i. Refined and updated, to provide improved clarity and practical guidance, on existing drainability assessment guidance provided under Chapter 3.6 Replanting Practice of RSPO Manual on Best Management Practices (BMPs) for Existing Oil Palm Cultivation on Peat.

ii. Analyses of the applicability of the Duflow model for indicating high risk of serious flooding and/or salt water intrusion within two crop cycles, and thus to indicate the potential for replanting.
iii. Analyses of other approaches that can be used to indicate high risk of serious flooding and/or salt water intrusion within two crop cycles, and thus to indicate the potential for replanting.
iv. (if the 'Duflow Model' appears to be applicable and if the use of the Duflow Model seems the better approach to indicate the potential for replanting) Development of a practical and step-by-step guidance for the application of 'Duflow Model' for the purposes of assessing the suitability for oil palm replanting.
v. (if the Duflow Model is not sufficient for this purpose, or if other methods are preferable) Recommendation paper Development of detailed step-by-step guidance to indicate high risk of serious flooding and/or salt water intrusion within two crop cycles of palm oil cultivation on peat, and thus to indicate the potential for replanting of oil palm on peat.

4. Guiding Principles

Deliverables required under this ToR:

A robust drainability assessment guideline, Practical to be used on the ground, Ground tested (e.g. by ERWG members). To come to this robust drainability assessment guideline for assessing the risk of serious flooding/salt water intrusion within two crop cycles, the following deliverables are needed

v. An analytical report on the applicability of 'Duflow Model' for the purpose of assessing the risk of serious flooding/salt water intrusion within two crop cycles
vi. Review report on other approaches for assessing the risk of serious flooding/salt water intrusion within two crop cycles.
vii. IF the Duflow Model is applicable for this purpose and appears to be the better approach: a step by step guideline on the application and use of 'Duflow Model' for growers:
    a. Cost effective and practical
    b. Ground tested
viii. IF the Duflow Model is not applicable for the purpose or other approaches appear to be better applicable: development of another drainability assessment approach
    a. Cost effective
    b. Ground tested

5. Timeline:

Analysis of Palm GHG Submissions from 2015 and 2016

Prepared by: HC/GLT/JT

ERWG Meeting, Capri Hotel, KL

January 24 & 25, 2017

RSPO

Roundtable on Sustainable Palm Oil

PalmGHG Submissions

- Submission cut-off date: January 1, 2017
- Certified mill data cut-off date: Dec 31, 2015 & Dec 31, 2016
- Removed FELDA for 'Apple-to-apple' comparison
- FELDA (certified versus submission) 2015 (55:27) 2016 (55:13)

	2015	2016
Certified Mill	301	331
Total Submissions	142 (47%)	234 (71%)
Compliance Submission	129 (43%)	215 (65%)
Non-compliance Submission	13	19
PalmGHG Submission	128 (90%)	230 (98%)
With LUC	74 (58%)	167 (73%)
With Peat	46 (36%)	80 (35%)

Two consecutive year submission	102
Two consecutive non-submission	84

Submissions

	Certified Mill	2015 (NC)	2015 (Certified)	2016 (NC)	2016 (Certified)	Certified Mill
Brazil	4	0	1	0	0	5
Cambodia	2	0	1	0	1	2
Colombia	5	0	3	4	4	7
Costa Rica	3	0	0	0	1	3
Ecuador	1	0	0	3	0	1
Gabon	0	0	0	0	1	1
Ghana	2	2	2	0	2	2
Guatemala	2	0	0	0	0	3
Honduras	2	0	0	0	3	3
Indonesia	167	9	70	11	112	187
Ivory Coast	1	0	0	0	1	1
Madagascar	1	0	0	0	0	1
Malaysia	91	2	36	1	82	94
Papua New Guinea	14	0	10	0	3	14
Solomon Islands	1	0	1	0	0	1
Thailand	5	0	5	0	5	6
Total	**301**	13	129	19	215	**331**
		142		**234**		

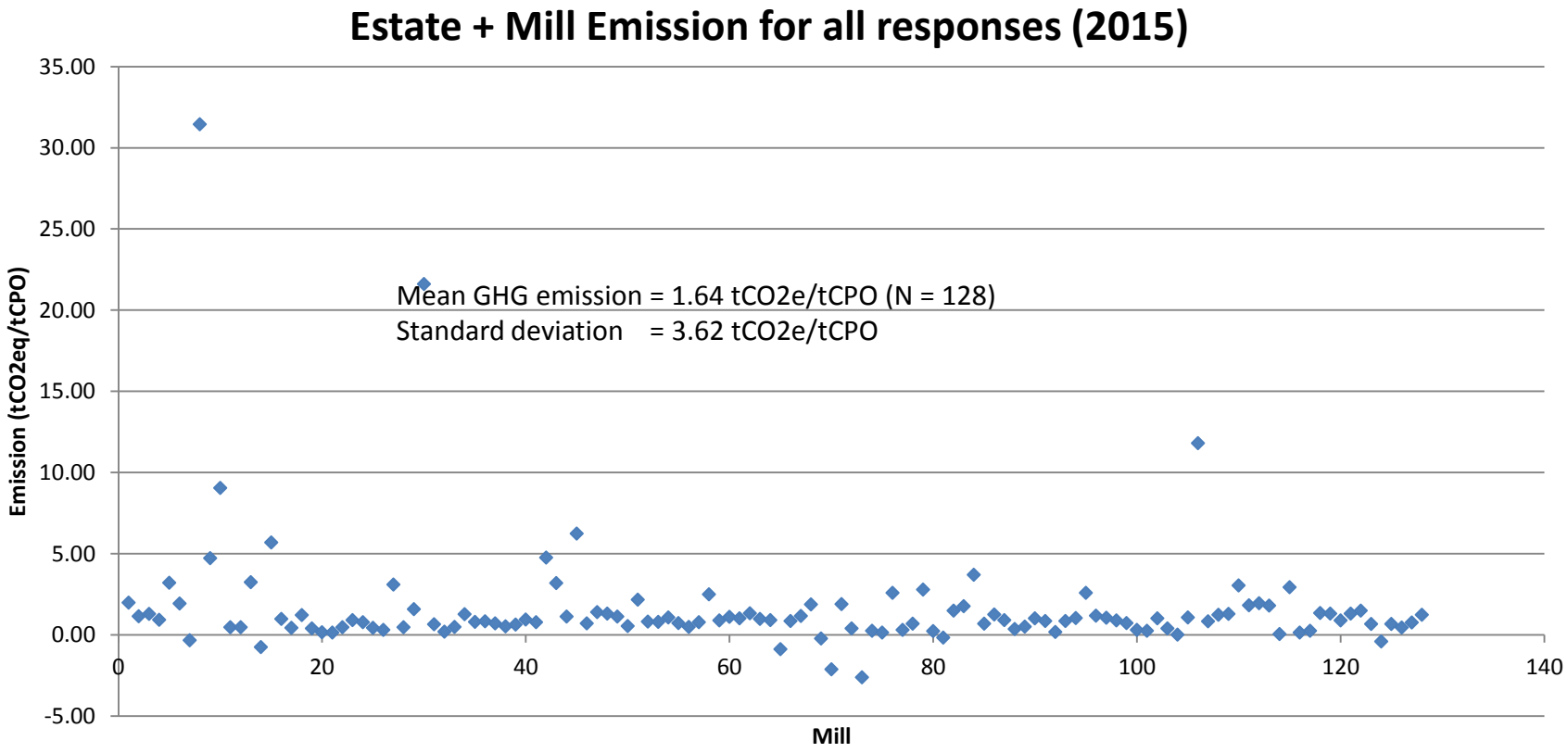
	2015	2016
Reporting format		
Own report	14	20
Accdb	44	54
Pdf	69	152
Excel	1	4
ISCC	10	
Custom	4	4
Calculation Option Applied		
Option 1	37	22
Option 2	1	13
Option 3	54	63
Option 1 or 2	36	132
Total Submissions	142	234

PalmGHG Data Analysis

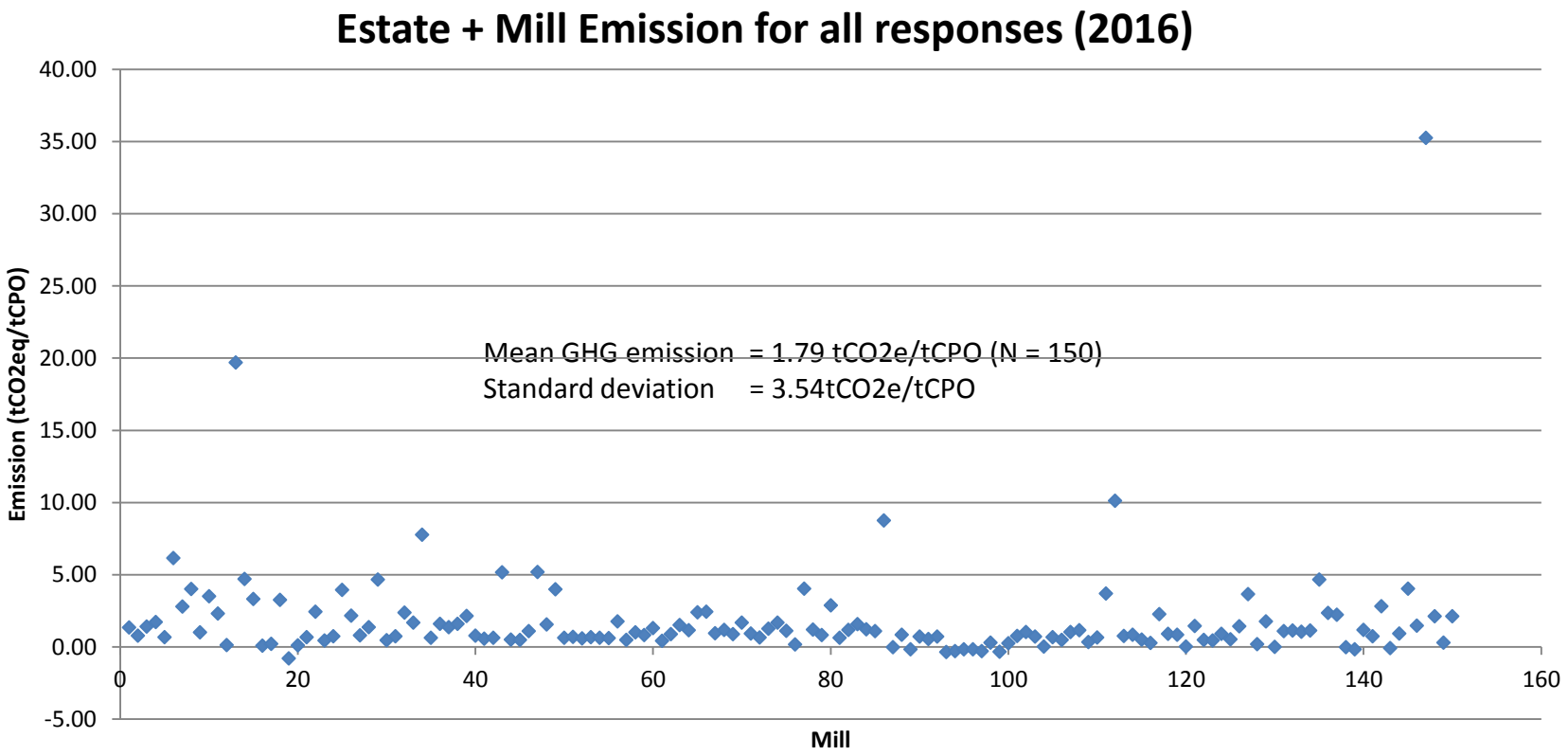
- Analysis based on data from submission as by August 31, 2016 (including FELDA data).
- Henry Cai and Dr Gan LT assisted in examining and analyzing the data.
- Outliers and suspected data submissions are removed for the analysis.
- Analysis done on:
  - Combination and permutation of peat, LUC and MC
  - Mean and standard deviation and scattered diagrams
  - Sources of emission tabulated and presented by histograms
  - Relevant data used in preparing RT14 ERWG paper

Year	Total submission	Total data point available	Total suspicious data point removed	Total good data point
2015	152	139	11	128
2016	173	164	14	150

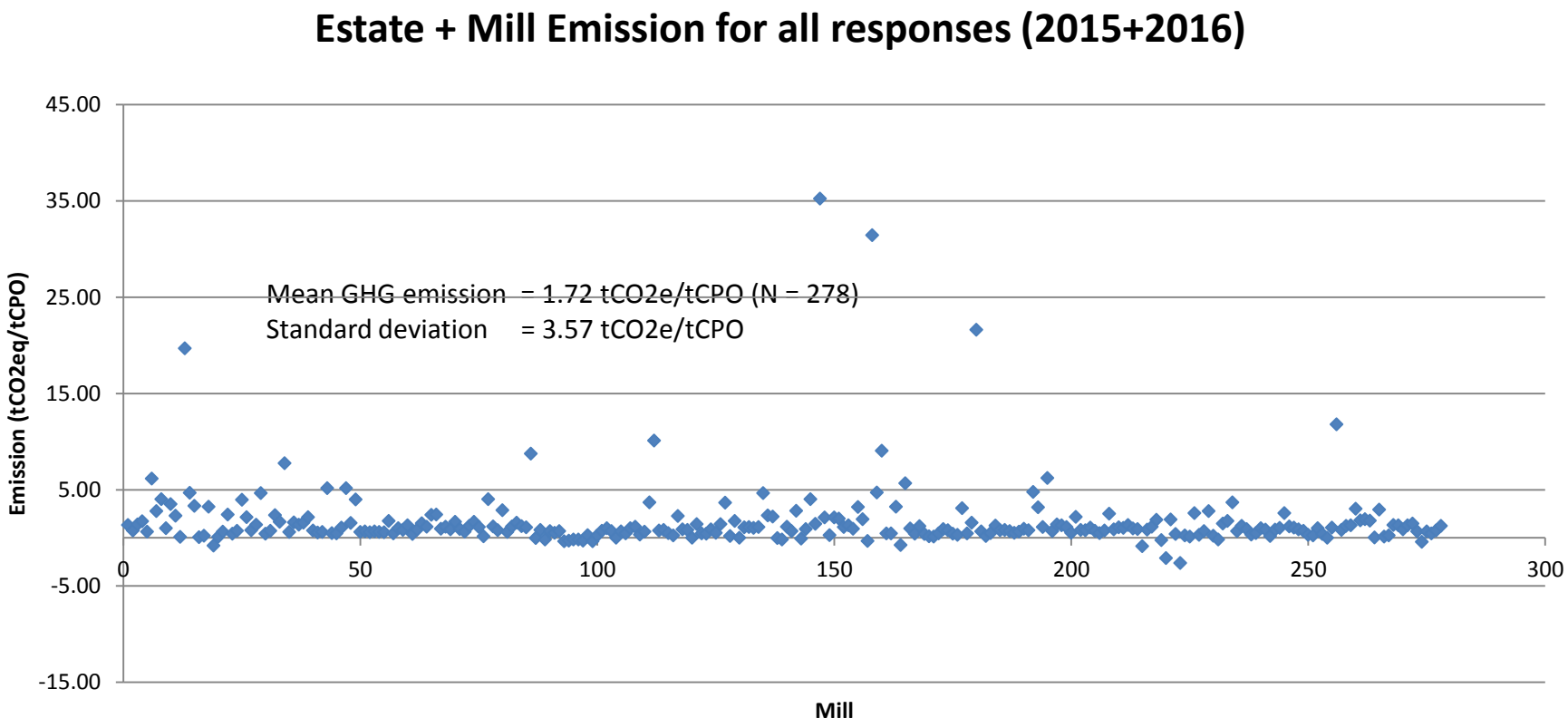
Analysis Findings



Analysis Findings



Analysis Findings



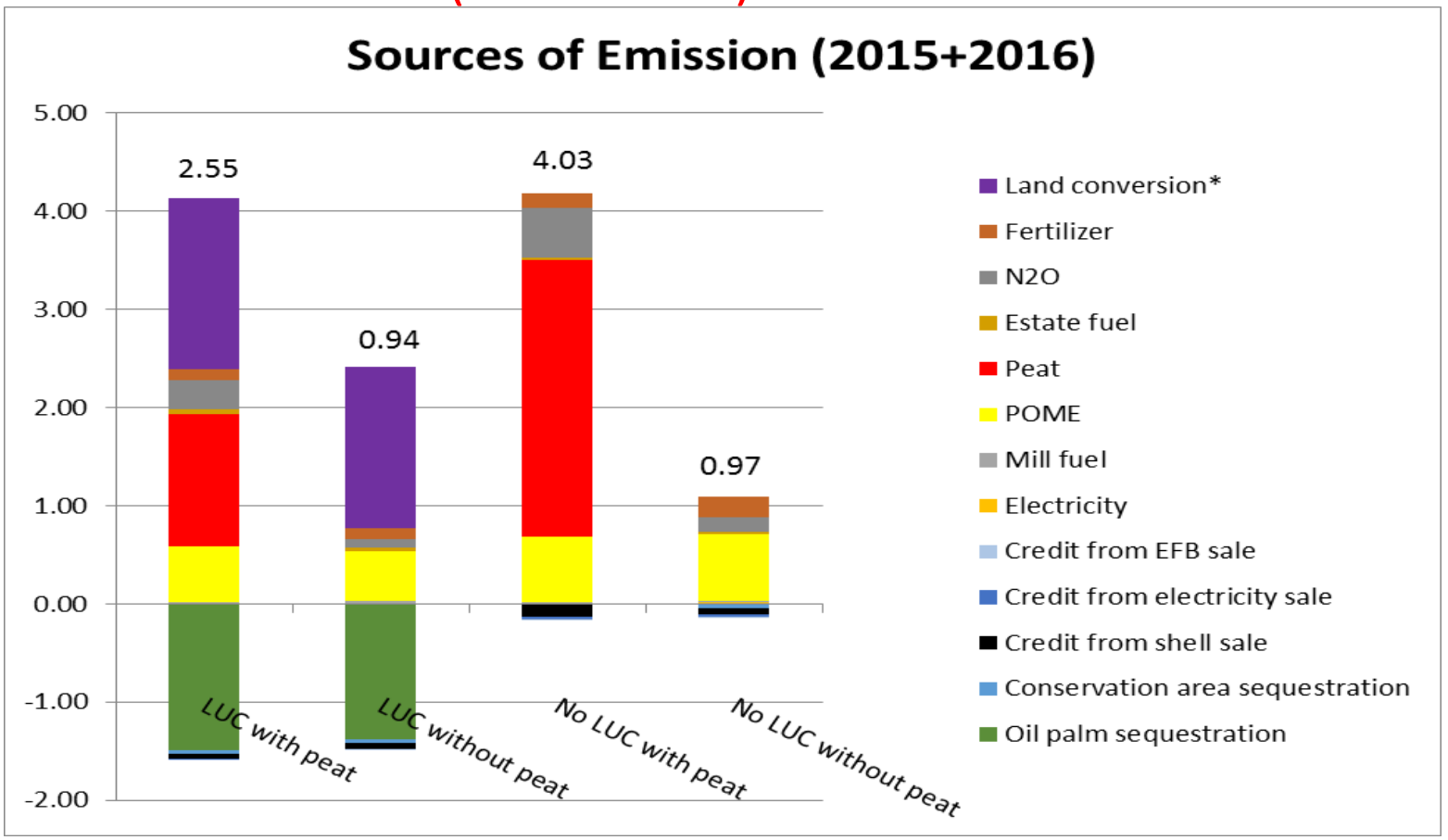
Analysis Findings

Sources of Emissions from submission using LUC and Peat Permutations (2015 + 2016)

	LUC		No LUC	
	LUC with peat	LUC without peat	No LUC with peat	No LUC without peat
Land conversion*	1.73	1.64	0.00	0.00
Fertilizer	0.11	0.11	0.15	0.21
N2O	0.30	0.09	0.50	0.15
Estate fuel	0.06	0.04	0.03	0.03
Peat	1.34	0.00	2.81	0.00
Oil palm sequestration	-1.49	-1.37	0.00	0.00
Conservation area sequestration	-0.04	-0.05	0.00	-0.04
POME	0.57	0.51	0.66	0.67
Mill fuel	0.01	0.03	0.01	0.02
Electricity	0.00	0.01	0.01	0.01
Credit from electricity sale	0.00	0.00	-0.02	-0.02
Credit from shell sale	-0.05	-0.05	-0.13	-0.07
Credit from EFB sale	0.00	-0.01	0.00	-0.01
Total Emission	2.55	0.94	4.03	0.97
N	45	132	40	61

Analysis Findings

Sources of Emissions from submission using LUC and Peat Permutations (2015+2016)



Submission: with LUC and with and without Peat

Submission: without LUC and with and without Peat

Analysis Findings

Sources of Emissions from submission using LUC and Peat Permutations (2015 and 2016)

2015				
	tCO2eq/tCPO			
	LUC		No LUC	
	LUC with peat	LUC without peat	No LUC with peat	No LUC without peat
Number of companies	12	68	23	25
Estate				
Land conversion*	1.50	1.76	0.00	0.00
Fertilizer	0.09	0.09	0.14	0.25
N2O	0.22	0.08	0.52	0.17
Fuel	0.06	0.04	0.03	0.03
Peat	0.79	0.00	3.03	0.00
Oil palm sequestration	-1.36	-1.48	0.00	0.00
Conservation area sequestration	-0.01	-0.06	0.00	-0.05
Total Estate	1.29	0.42	3.72	0.41
Mill				
POME	0.54	0.57	0.48	0.79
Fuel	0.01	0.02	0.01	0.01
Electricity	0.00	0.01	0.01	0.02
Credit from electricity sale	0.00	0.00	-0.02	-0.03
Credit from shell sale	-0.05	-0.02	-0.14	-0.10
Credit from EFB sale	0.00	-0.01	0.00	-0.01
Total Mill	0.51	0.57	0.35	0.70
Total	1.79	0.99	4.07	1.10

2016				
	tCO2eq/tCPO			
	LUC		No LUC	
`	LUC with peat	LUC without peat	No LUC with peat	No LUC without peat
Number of companies	9	41	25	75
Estate				
Land conversion*	2.05	1.50	0.00	0.00
Fertilizer	0.14	0.14	0.16	0.15
N2O	0.40	0.10	0.48	0.13
Fuel	0.05	0.04	0.03	0.03
Peat	2.08	0.00	2.53	0.00
Oil palm sequestration	-1.67	-1.24	0.00	0.00
Conservation area sequestration	-0.08	-0.03	0.00	-0.03
Total Estate	2.98	0.50	3.20	0.28
Mill				
POME	0.62	0.43	0.91	0.50
Fuel	0.02	0.03	0.01	0.03
Electricity	0.00	0.01	0.00	0.00
Credit from electricity sale	0.00	0.00	-0.02	0.00
Credit from shell sale	-0.06	-0.09	-0.13	-0.04
Credit from EFB sale	0.00	-0.01	0.00	0.00
Total Mill	0.57	0.36	0.77	0.50
Total	3.56	0.87	3.98	0.78

*land conversion is combination of three LUC options

Analysis Findings

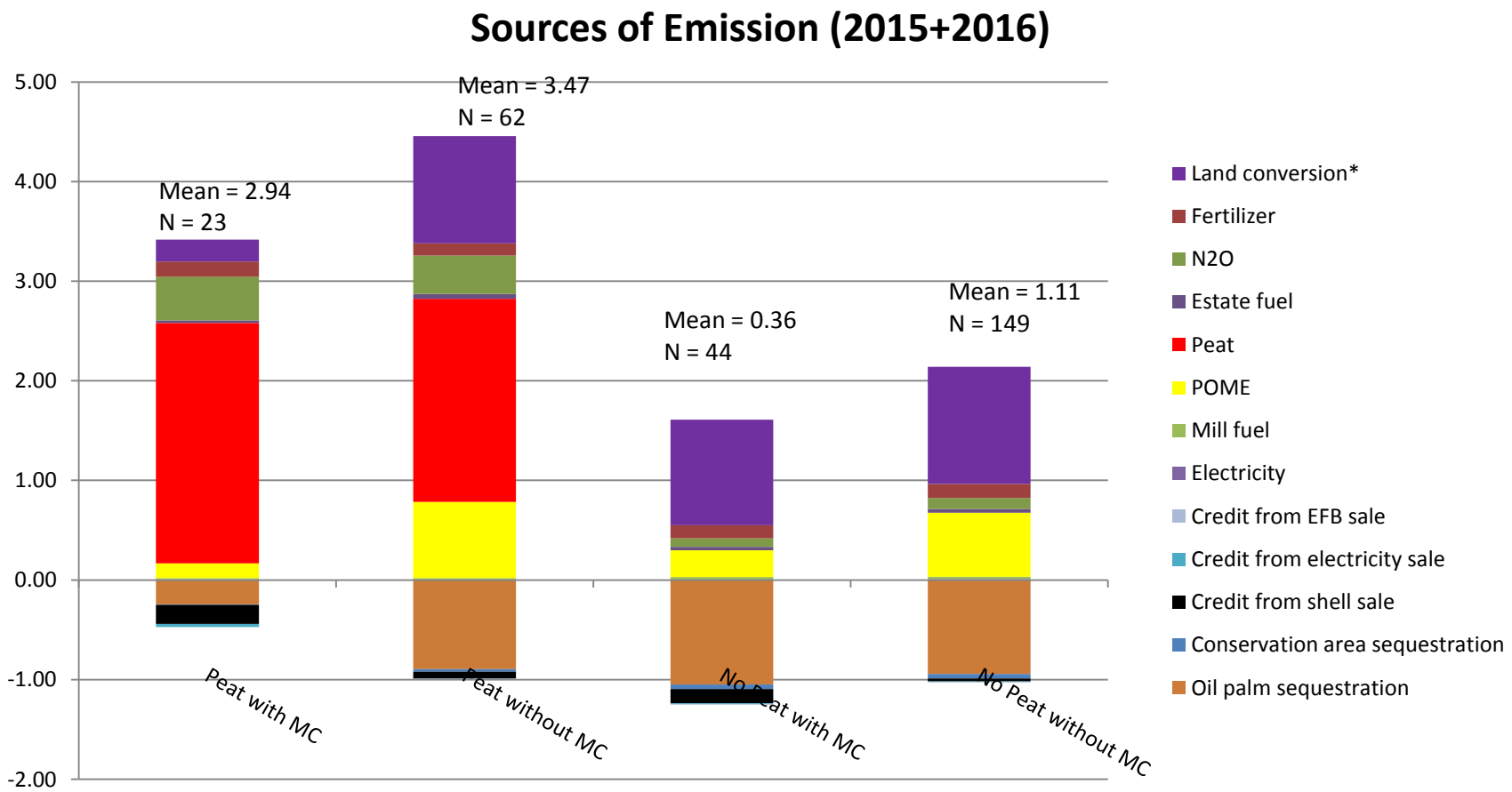
Sources of Emissions from submission using Peat and Methane Capture Permutations (2015 + 2016)

	Peat		No peat	
	Peat with MC	Peat without MC	No Peat with MC	No Peat without MC
Land conversion*	0.22	1.08	1.06	1.18
Fertilizer	0.15	0.12	0.13	0.14
N2O	0.44	0.39	0.09	0.11
Estate fuel	0.03	0.05	0.03	0.04
Peat	2.41	2.04	0.00	0.00
Oil palm sequestration	-0.24	-0.89	-1.05	-0.94
Conservation area sequestration	0.00	-0.03	-0.05	-0.05
POME	0.15	0.76	0.27	0.64
Mill fuel	0.01	0.01	0.02	0.03
Electricity	0.01	0.00	0.01	0.01
Credit from electricity sale	-0.03	0.00	-0.01	-0.01
Credit from shell sale	-0.19	-0.07	-0.14	-0.03
Credit from EFB sale	0.00	0.00	-0.01	-0.01
Total Emission	2.94	3.47	0.36	1.11
N	23	62	44	149

*land conversion is combination of three LUC options

Analysis Findings

Sources of Emissions from submission using Peat and Methane Capture Permutations (2015 + 2016)



Submission: with peat and with and without MC

Submission: without peat and with and without MC

Analysis Findings

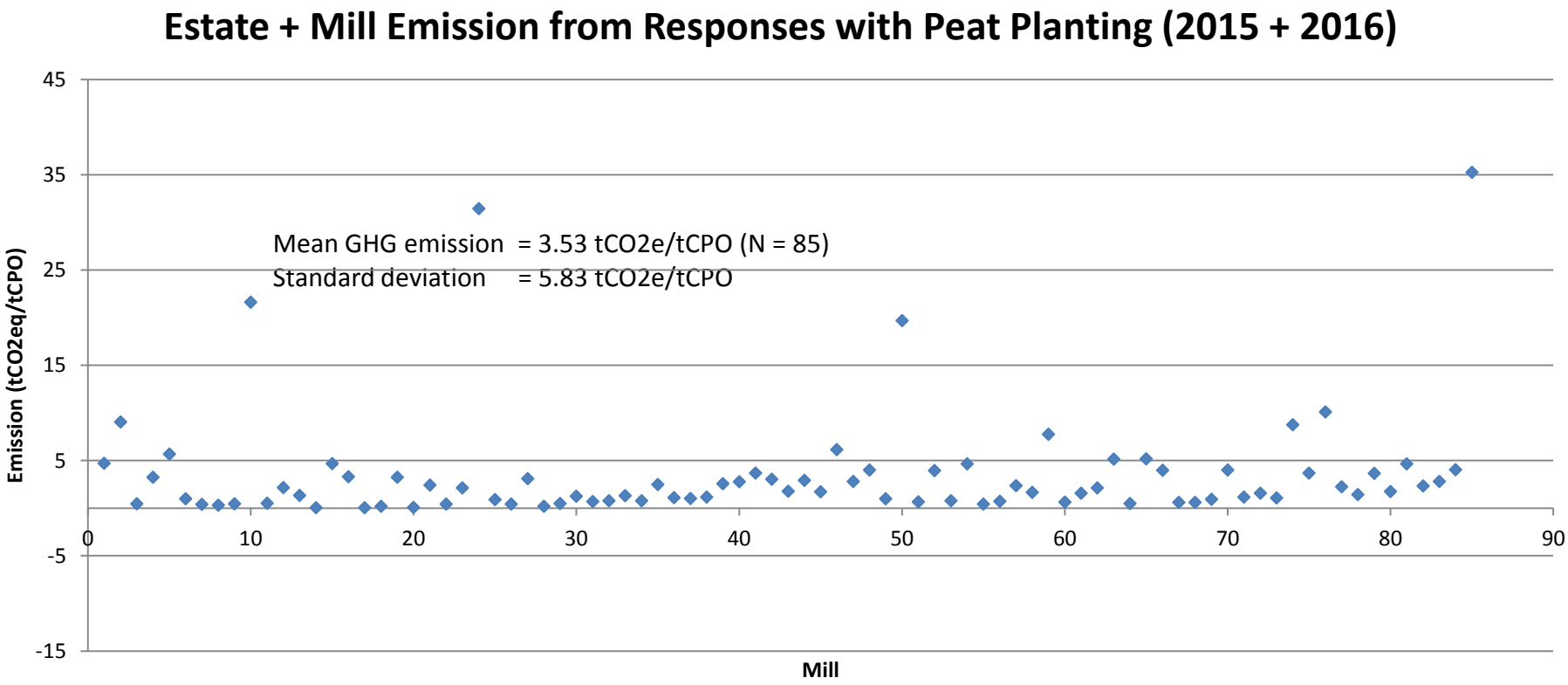
Sources of Emissions from submission using Peat and Methane Capture Permutations (2015 and 2016)

2015	tCO2eq/tCPO			
	Peat		No peat	
	with MC	without MC	with MC	without MC
Number of companies	14	21	19	74
Estate				
Land conversion*	0.16	0.75	1.07	1.34
Fertilizer	0.16	0.10	0.12	0.13
N2O	0.54	0.34	0.08	0.11
Fuel	0.03	0.05	0.04	0.03
Peat	2.89	1.84	0.00	0.00
Oil palm sequestration	-0.18	-0.66	-1.16	-1.06
Conservation area sequestration	-0.01	0.00	-0.03	-0.07
Total Estate	3.59	2.42	0.12	0.49
Mill				
POME	0.19	0.70	0.29	0.72
Fuel	0.01	0.01	0.01	0.02
Electricity	0.01	0.01	0.01	0.01
Credit from electricity sale	-0.02	0.00	-0.01	-0.01
Credit from shell sale	-0.14	-0.09	-0.15	-0.01
Credit from EFB sale	0.00	0.00	0.00	-0.01
Total Mill	0.06	0.63	0.15	0.72
Total	3.65	3.05	0.27	1.21

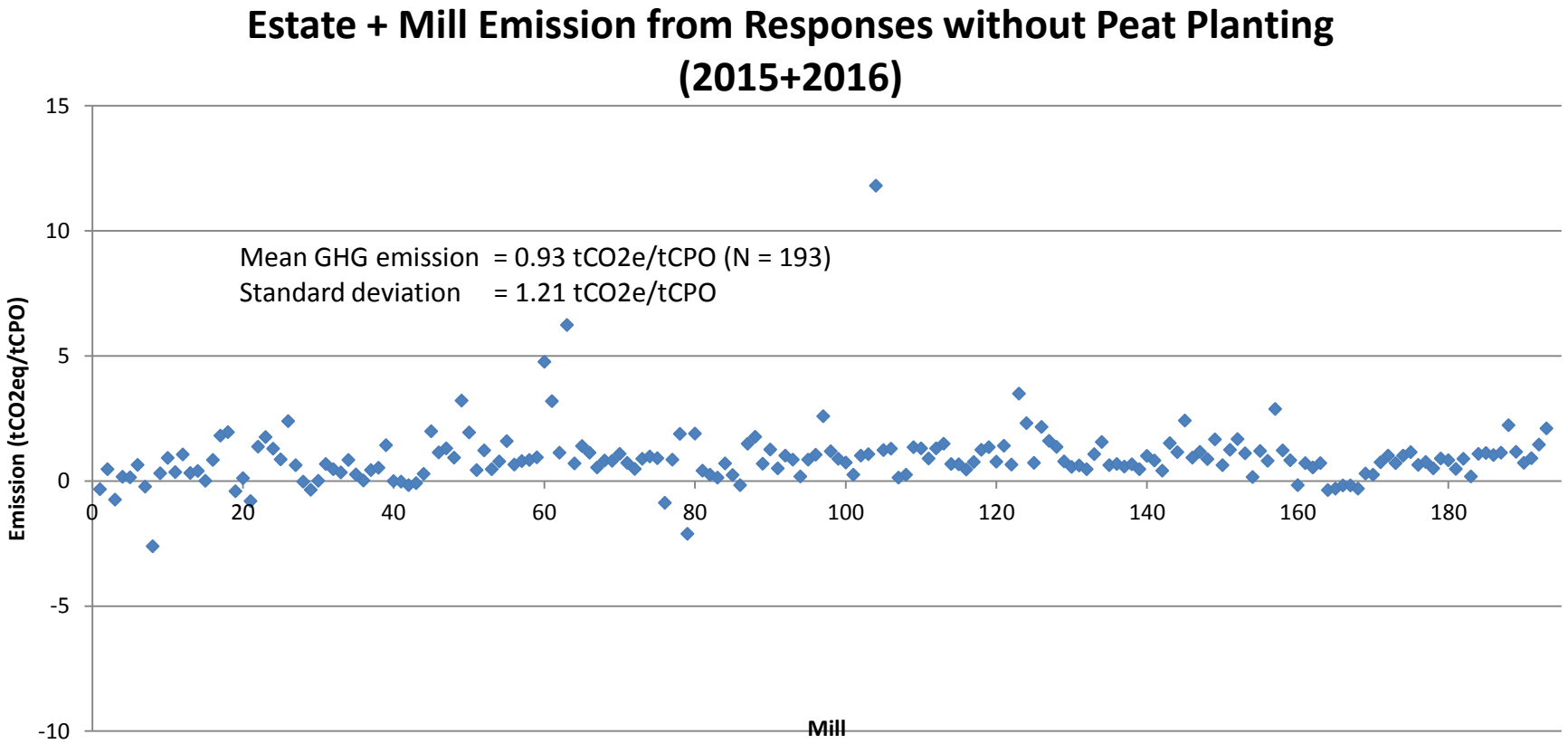
2016	tCO2eq/tCPO			
	Peat		No peat	
`	with MC	without MC	with MC	without MC
Number of companies	9	41	25	75
Estate				
Land conversion*	0.32	1.58	1.04	0.93
Fertilizer	0.14	0.15	0.14	0.15
N2O	0.28	0.46	0.10	0.11
Fuel	0.02	0.05	0.03	0.04
Peat	1.66	2.35	0.00	0.00
Oil palm sequestration	-0.35	-1.26	-0.87	-0.77
Conservation area sequestration	0.00	-0.07	-0.08	-0.01
Total Estate	2.08	3.27	0.36	0.45
Mill				
POME	0.08	0.86	0.23	0.53
Fuel	0.00	0.02	0.04	0.03
Electricity	0.00	0.00	0.01	0.01
Credit from electricity sale	-0.04	0.00	-0.01	0.00
Credit from shell sale	-0.28	-0.04	-0.13	-0.05
Credit from EFB sale	0.00	0.00	-0.01	0.00
Total Mill	-0.23	0.83	0.13	0.51
Total	1.85	4.11	0.49	0.95

*land conversion is combination of three LUC options

Analysis Findings

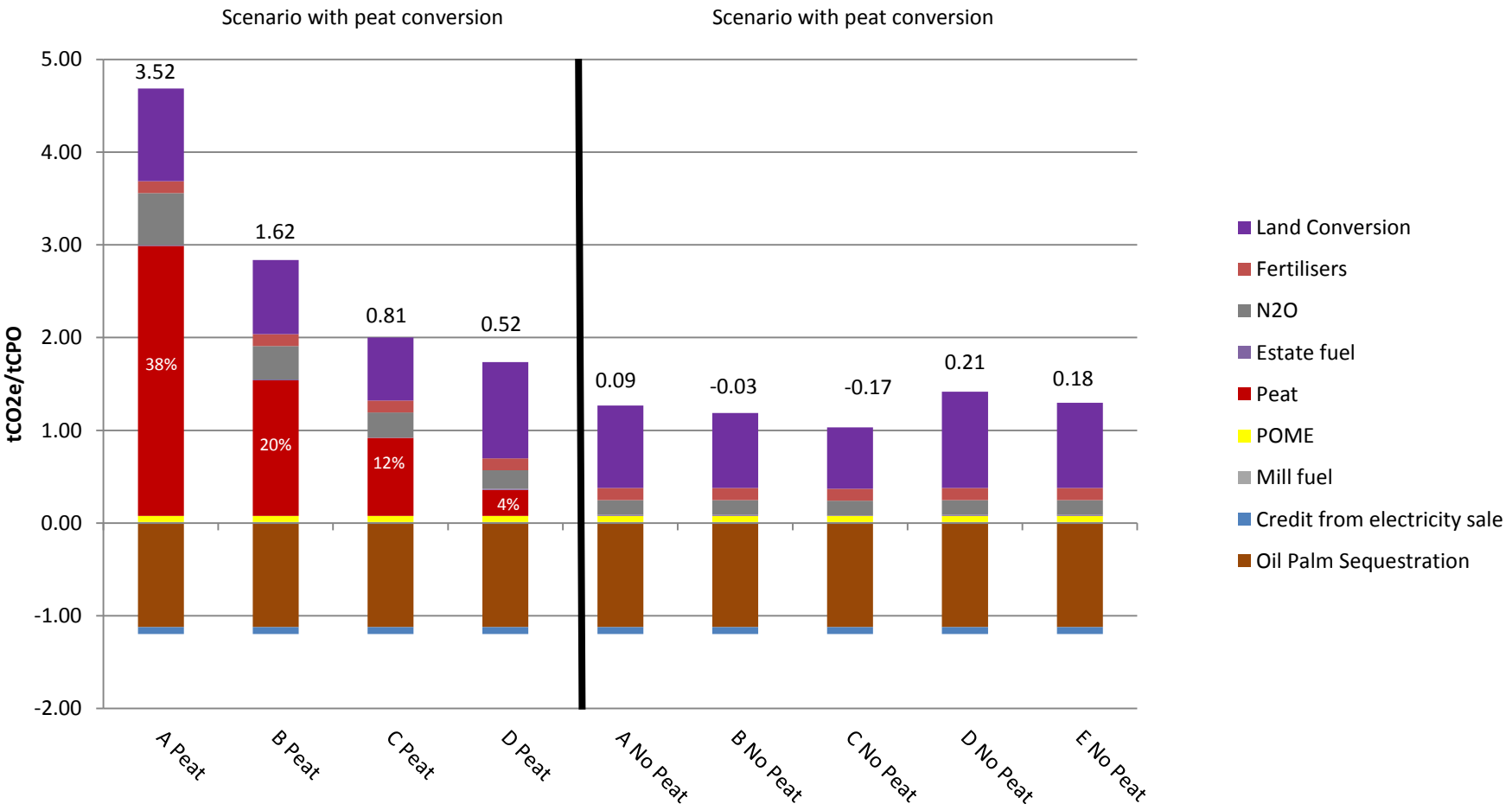


Analysis Findings

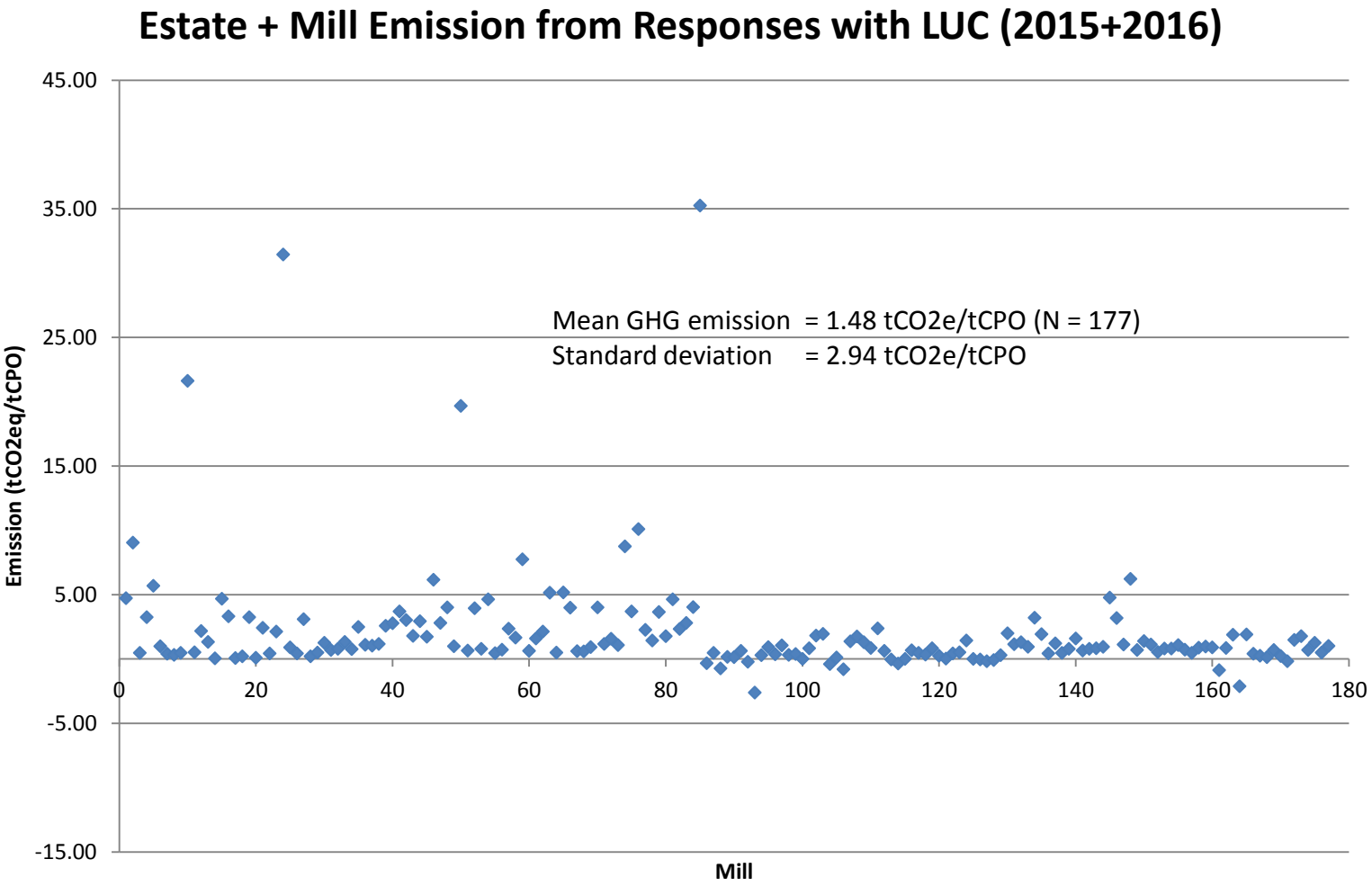


Analysis Findings

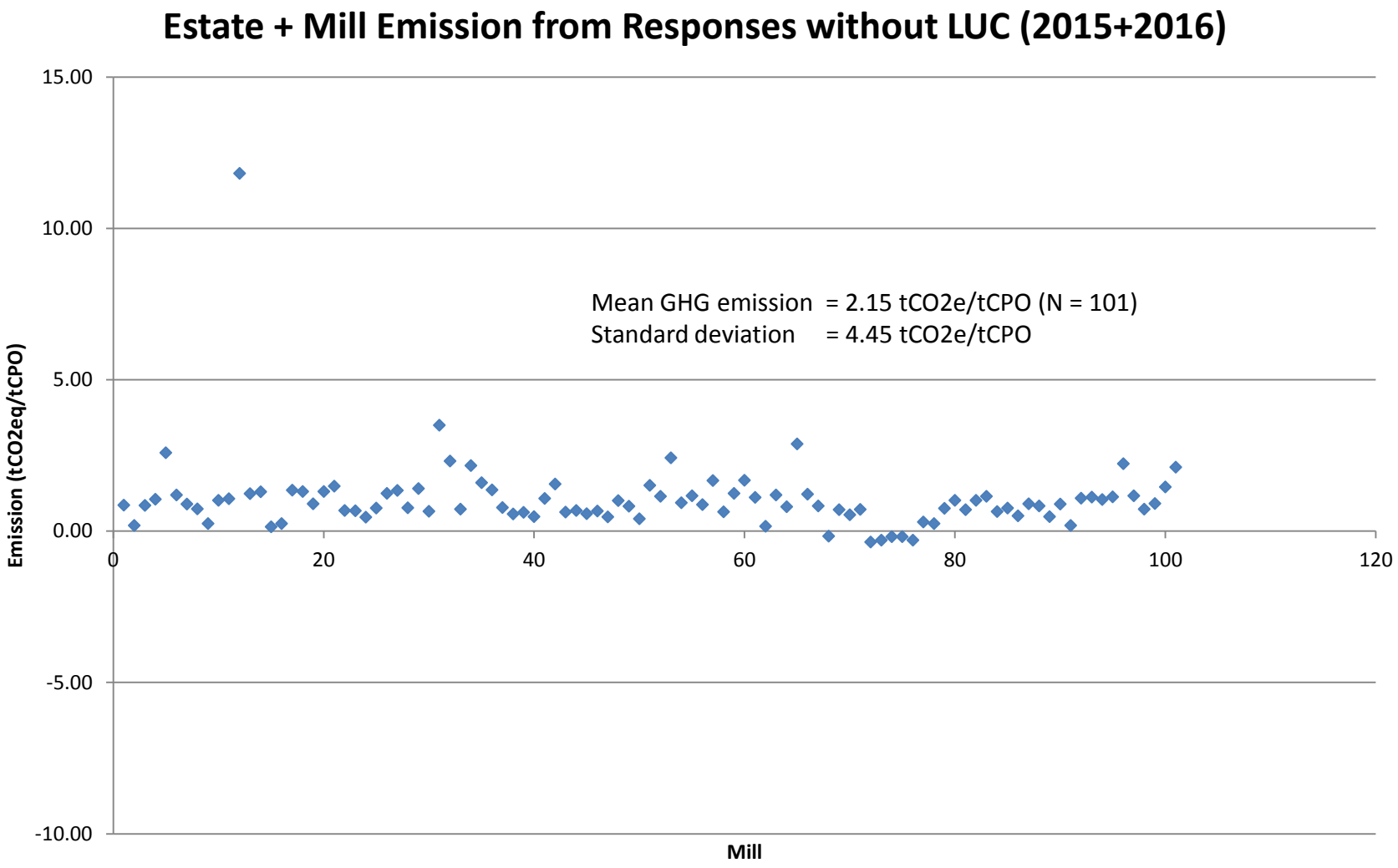
Selected submission data to illustrate the impact of peat area on GHG emission



Analysis Findings



Analysis Findings



Analysis Findings

Total Emission Using Peat, LUC and MC Permutations (2015 and 2016)

2015

Peat	LUC	MC	Number of submission	Mean	Stdev
√	√	√	2	0.23	0.25
√	√	-	10	2.10	1.03
√	-	-	11	3.92	6.10
√	-	√	12	4.22	9.17
-	√	√	12	0.35	1.18
-	√	-	56	1.13	1.20
-	-	√	7	0.14	0.53
-	-	-	18	1.48	2.60

2016

Peat	LUC	MC	Number of submission	Mean	Stdev
√	√	√	4	1.27	1.18
√	√	-	29	3.87	6.40
√	-	-	12	4.67	2.06
√	-	√	5	2.31	5.45
-	√	√	17	0.45	0.72
-	√	-	47	1.02	0.86
-	-	√	8	0.59	0.77
-	-	-	28	0.84	0.21

Distinct compounding factors play a big role in influencing the emissions

Analysis Findings

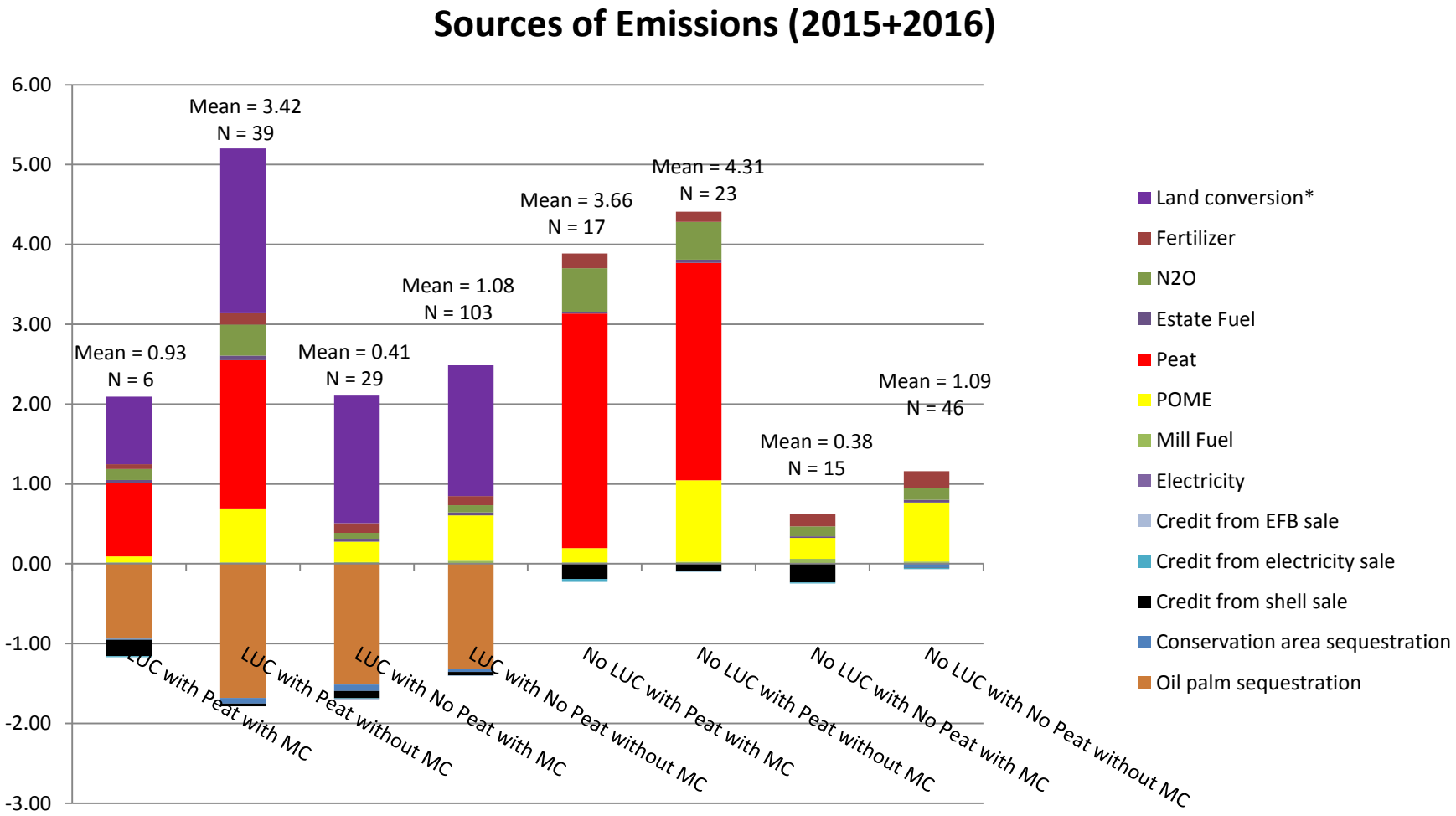
Total Emission Using Peat, LUC and MC Permutations (2015 + 2016)

2015 + 2016					
Peat	LUC	MC	Number of submission	Mean	Stdev
√	√	√	6	0.93	1.06
√	√	-	39	3.42	5.57
√	-	-	23	4.31	7.30
√	-	√	17	3.66	5.24
-	√	√	29	0.41	0.92
-	√	-	103	1.08	1.05
-	-	√	15	0.38	0.69
-	-	-	46	1.09	1.64

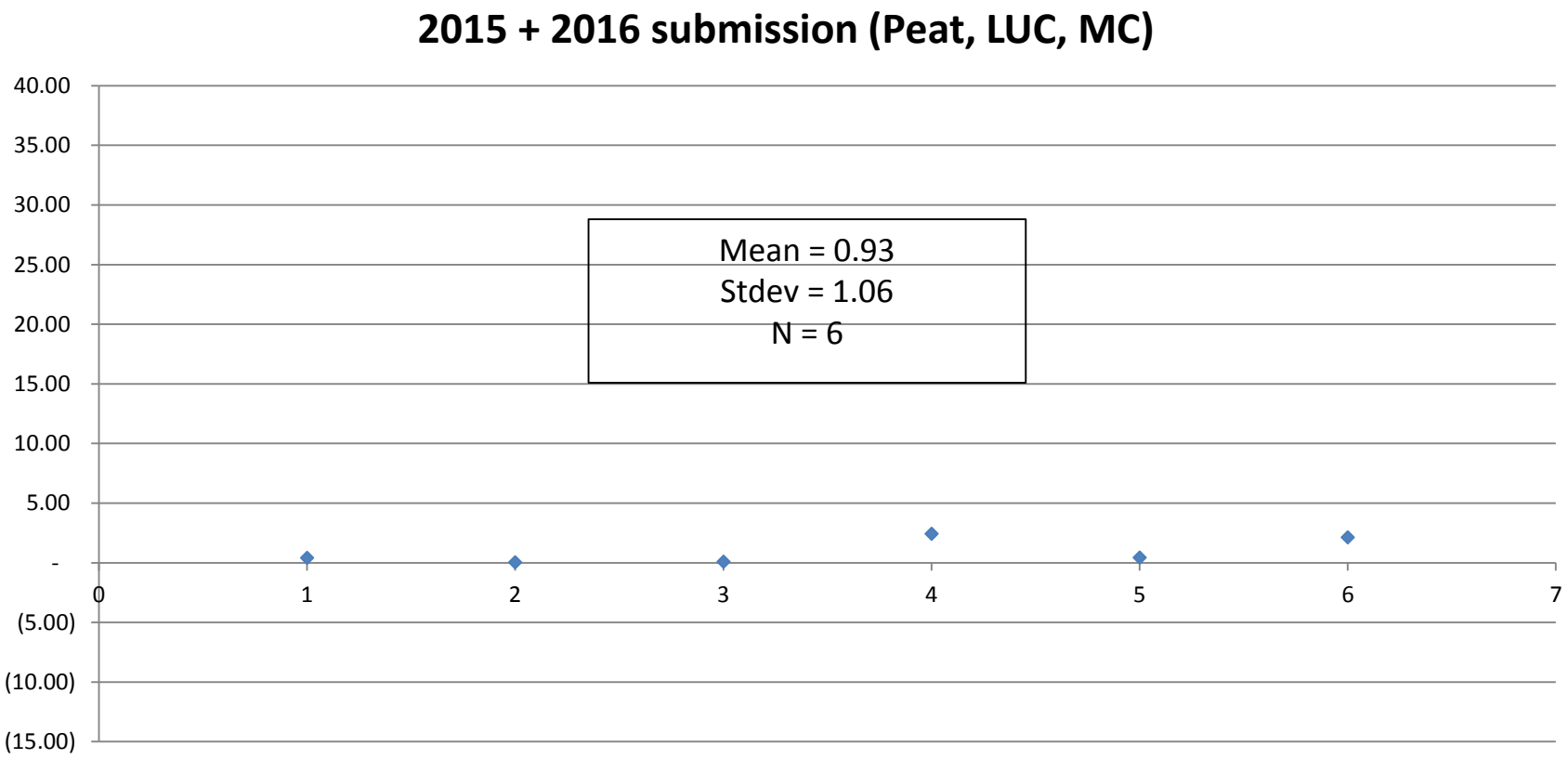
Even after combining the distinct compounding effects still exist

Analysis Findings

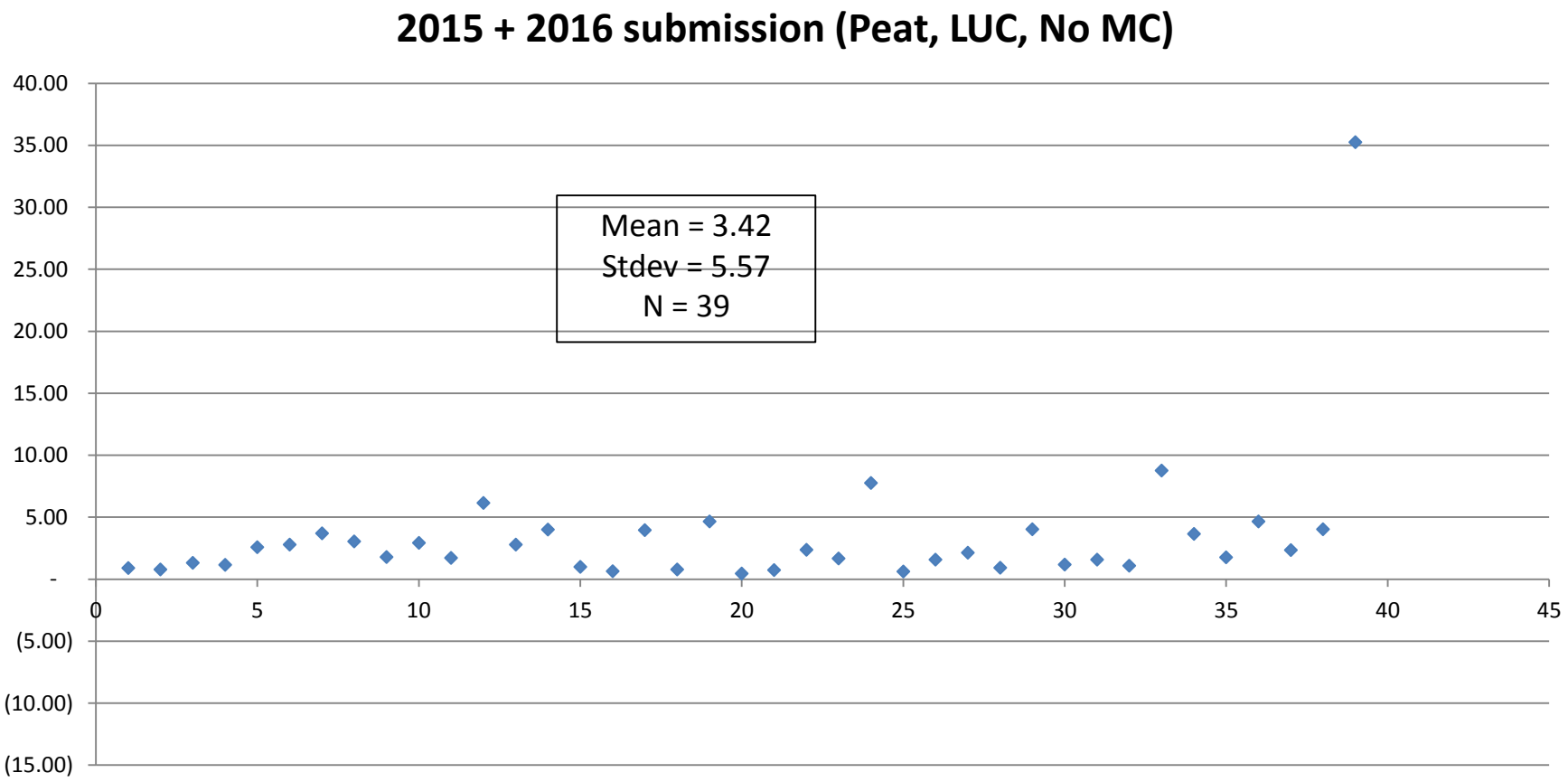
Total Emission Using Peat, LUC and MC Permutations (2015 + 2016)



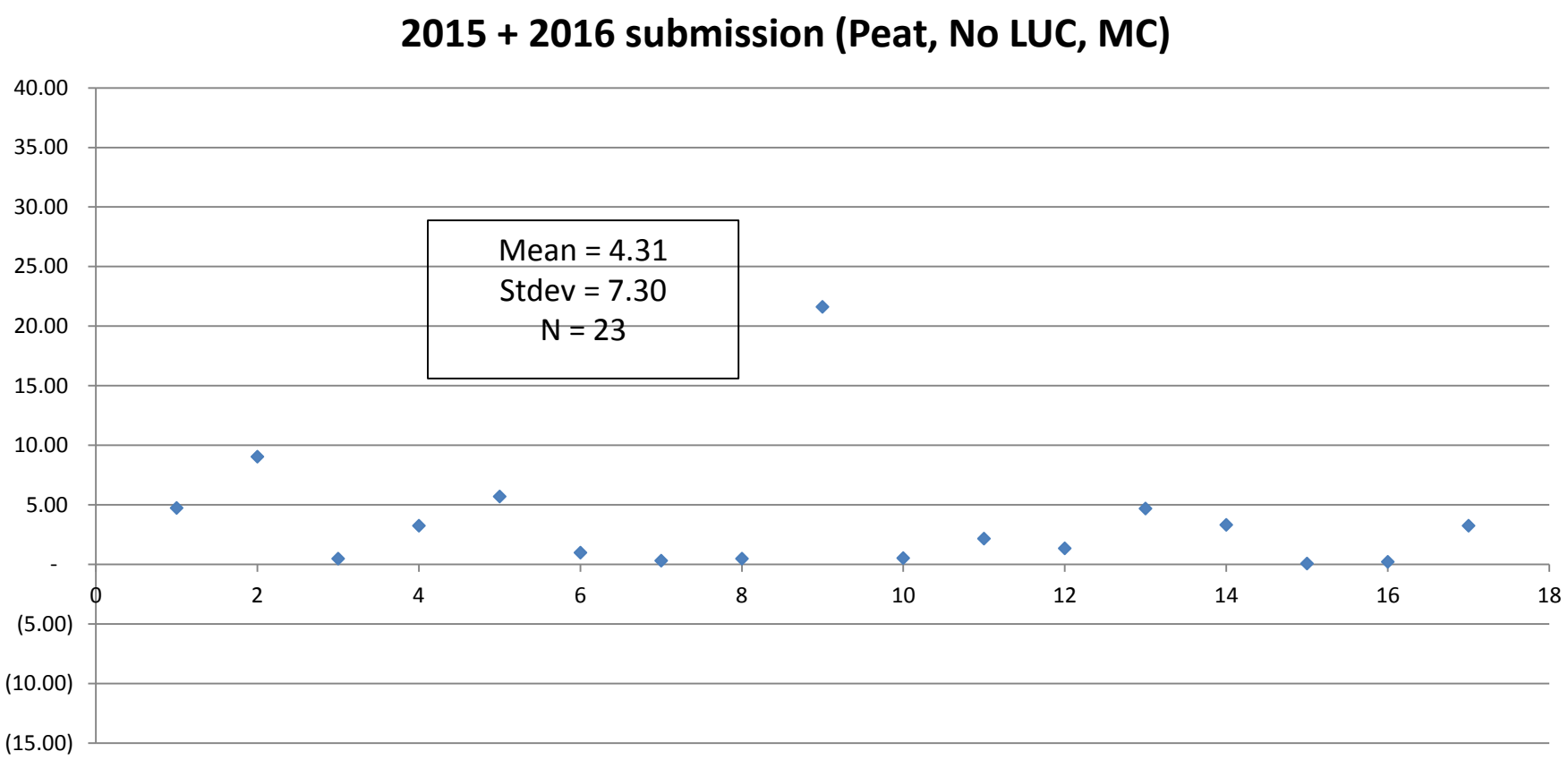
Analysis Findings



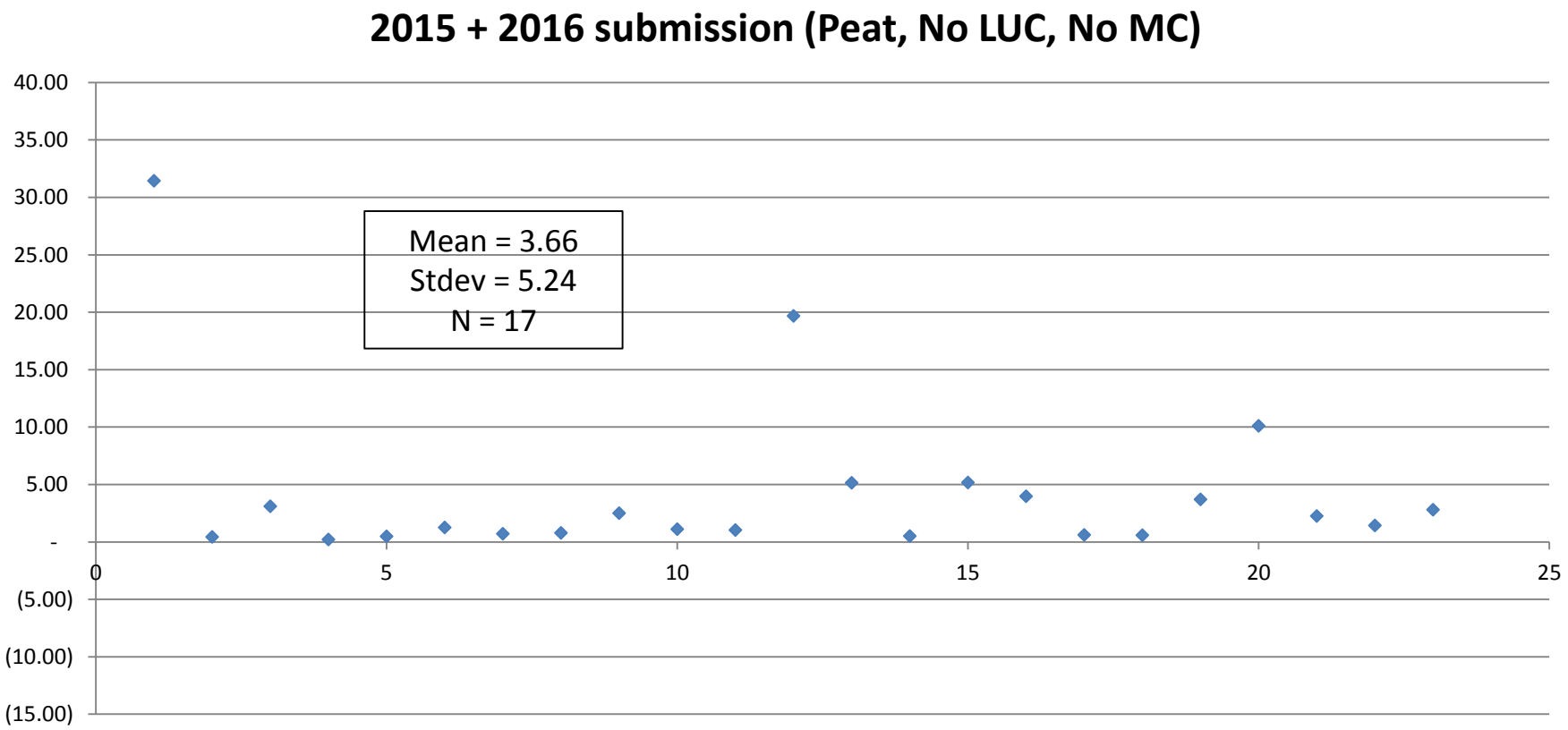
Analysis Findings



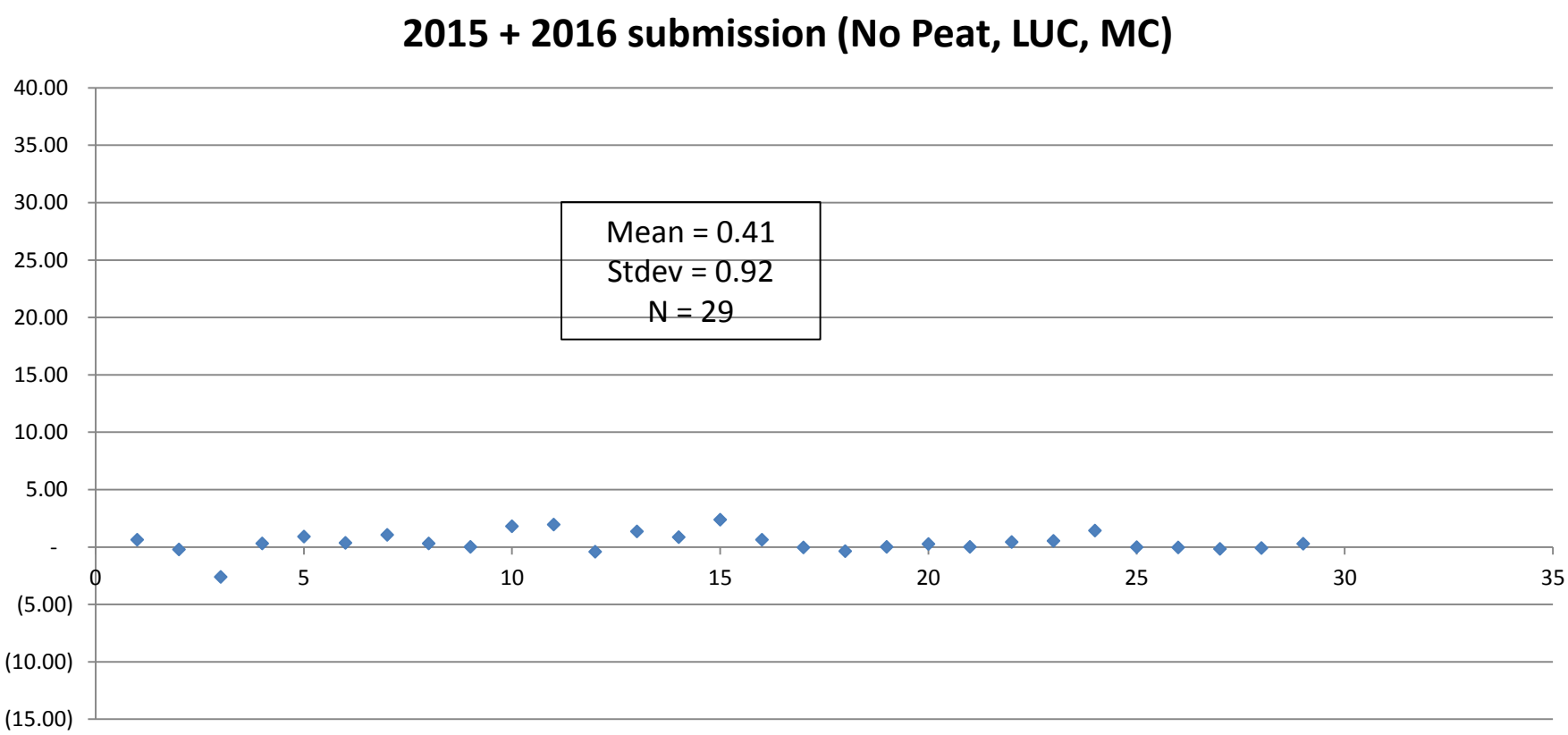
Analysis Findings



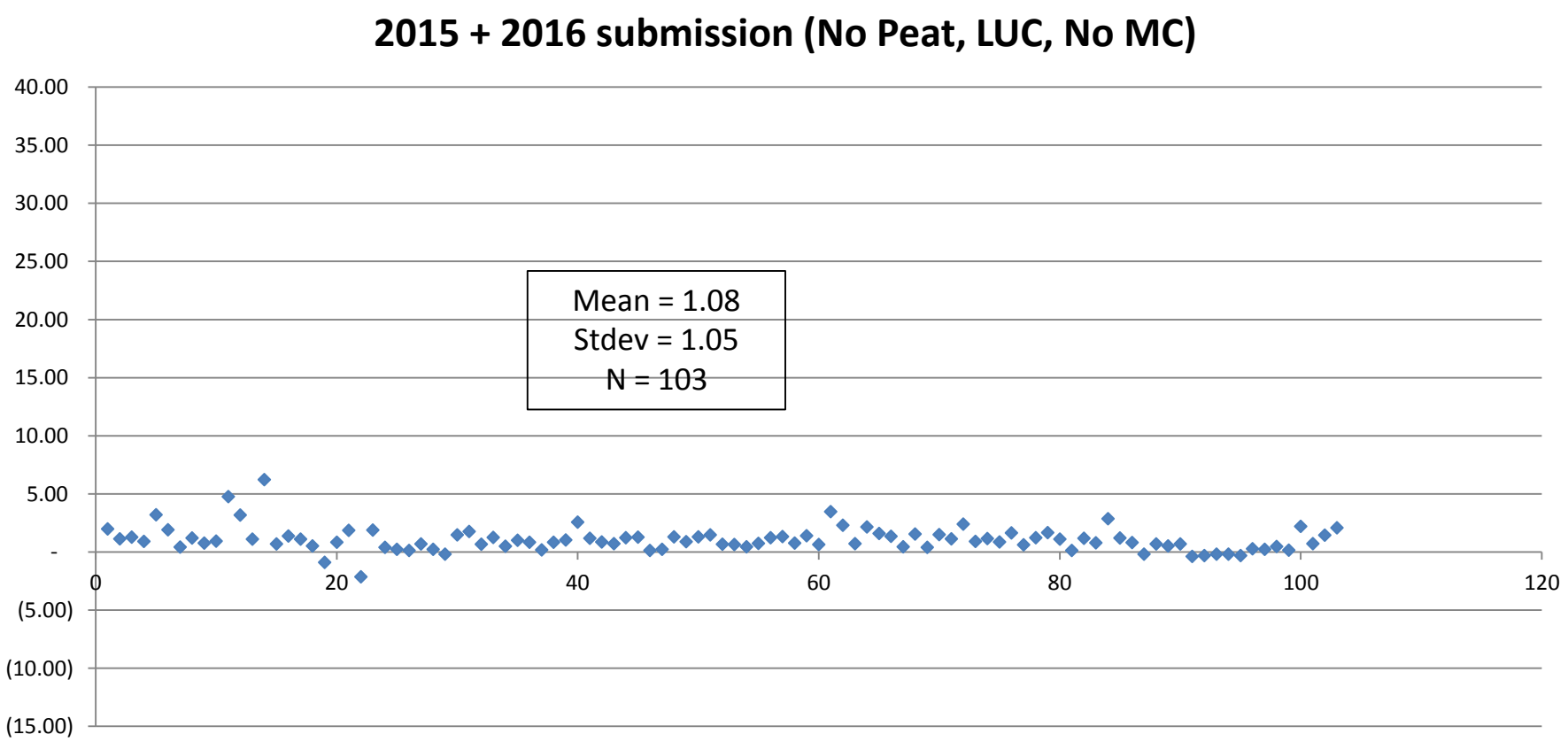
Analysis Findings



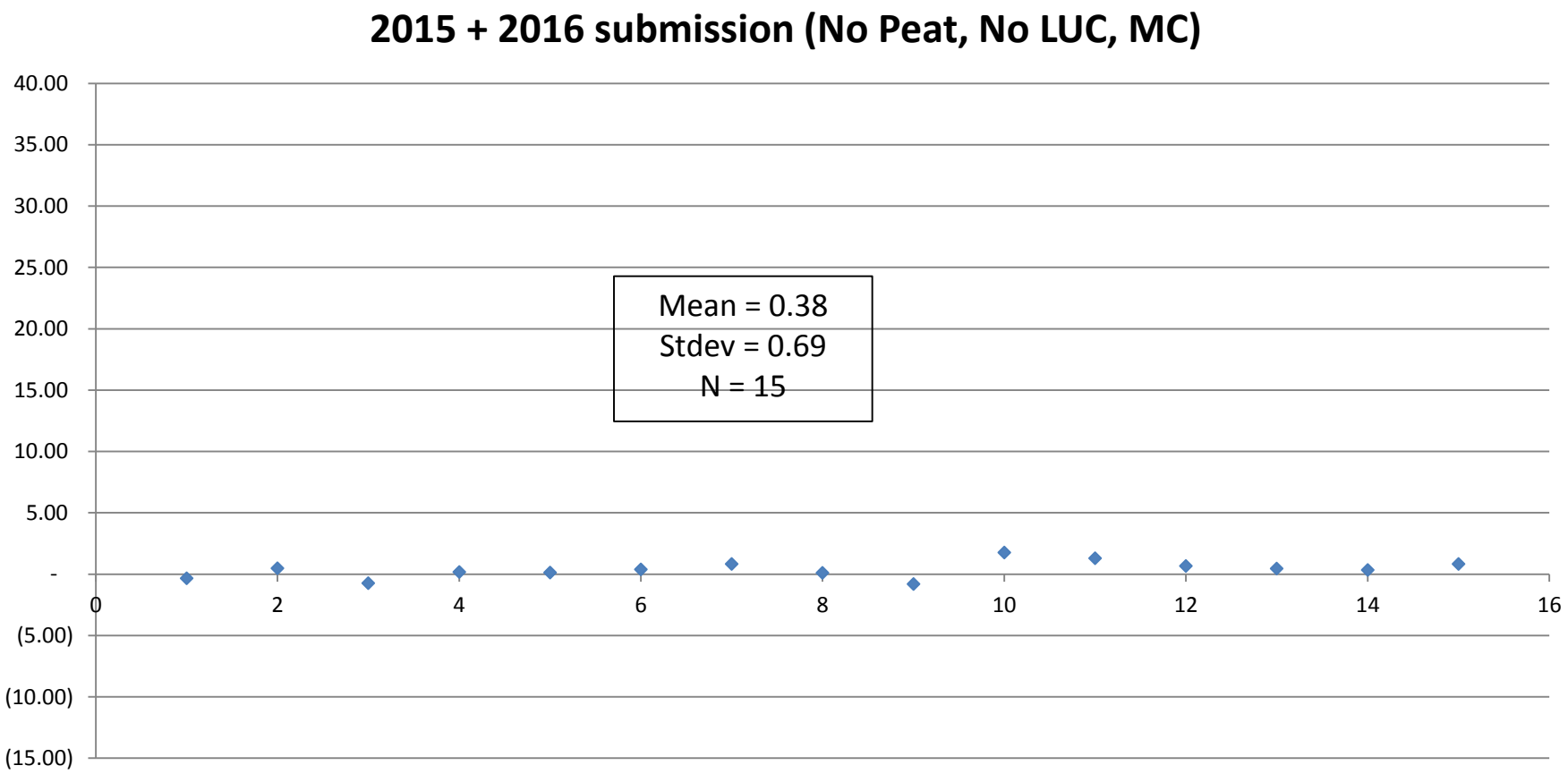
Analysis Findings



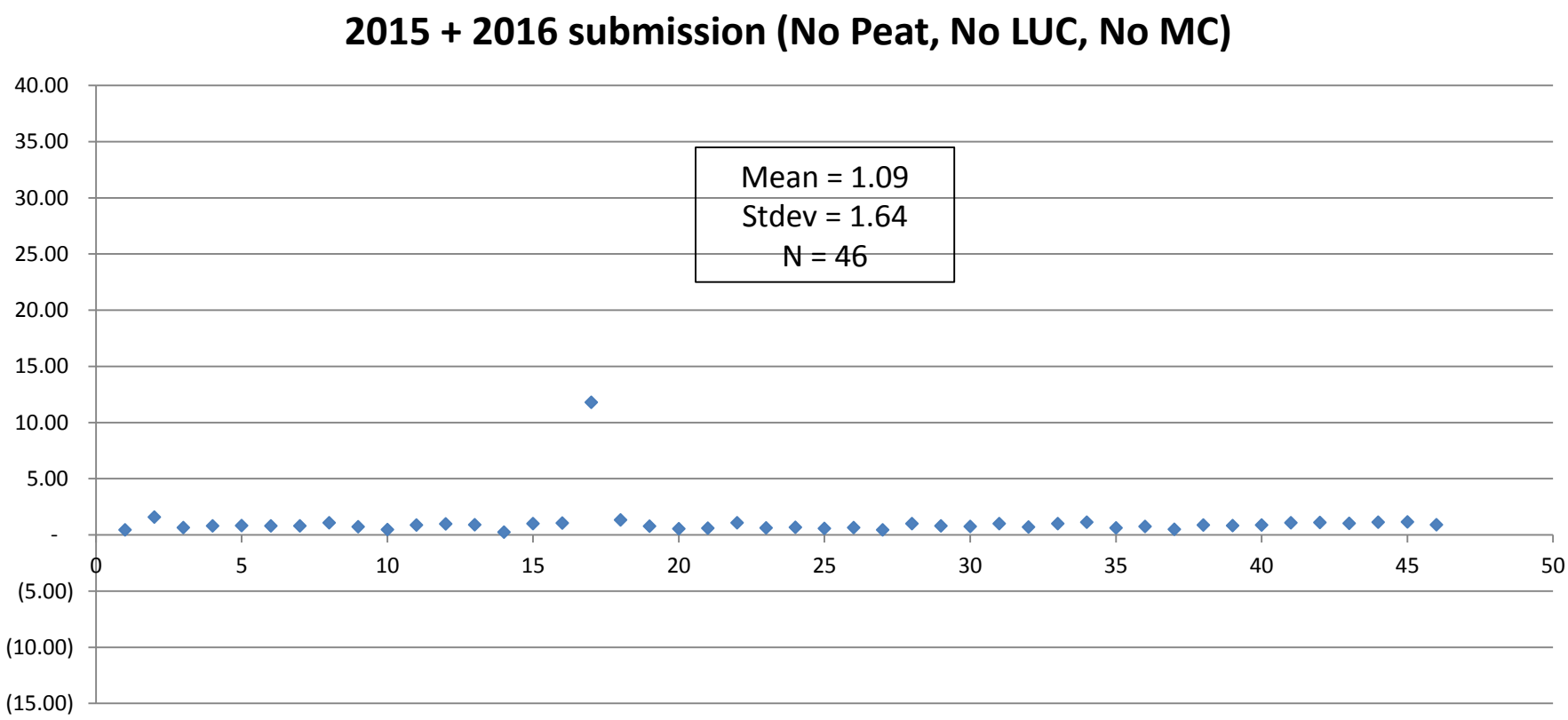
Analysis Findings



Analysis Findings



Analysis Findings



Implementation & Monitoring Challenges (C5.6):

Implementation:

- Programming challenges: compatibility and to cater to different languages.
- Challenges faced with the data-entry into the tool (i.e. 3rd party supplier).
- Members and CBs' awareness on the effective date of C5.6 (voluntary: public reporting).

Monitoring:

- Lack of integrated monitoring tool (certified mill and submissions).
- Use of different tools
- Different reporting format (i.e. pdf – cannot identify error in data entry and POME treatment)
- Different mill name captured (certificate vs PalmGHG report)

Analysis Challenges:

- Mismatch of submission and certified units
- Data accuracies suspected in many submissions
- Incomplete submissions
- Different GHG tools used
- Different combination of LUC and no-LUC
- Hectarages not provided, hence difficulties in analysis
- Incomplete data and information through pdf submission
- Quality of input data to the PalmGHG
- Accuracy of the calculations using PalmGHG
- Response time from company for clarification or correction to erroneous data
- Finding the optimum frequency of analysis against adequate submission

C7.8 Submissions

- Submission cut-off date: Dec 31, 2016
- Base on 2016 submissions,
  - Without MC: ~13.46tCO2e/ha with STDEV of 3.27tCo2e/ha (17 samples)
  - With MC: ~1.23tCO2e/ha with STDEV of 15.19tCo2e/ha (only 3 samples)

	Dec-15	Dec-16
Total Submissions	15	45
Indonesia	14	36
Malaysia	1	2
Latin America	0	3
Africa	0	4
Pending Clarification	5	11
Presence of Peat	0	6
Development on Peat	0	*1
Use of HCSA/HCS+	1	8
Internal Assessment	9	11
External Assessment	6	34
With Methane Capture	0	41
Without Methane Capture	15	4

* Pending clarification

Implementation & Monitoring Challenges (C7.8):

- Verifying local custom land classification and values used.
- Unclear boundary on new development area.
- Lack of awareness on the need for GHG assessment for new plantings.
- Confusion between the PalmGHG Simplified Excel for New Plantings and PalmGHG Calculator.
- Different approach in GHG assessment and way of presenting calculation data.
- Lacking of GHG emissions data from mill operation for new plantings.
- Confusion on GHG assessment of mill operation.
- Sample size corresponds to number of new plantings so the sensitivity of analysis may not be adequate due to low sample size