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Resilient nations.*

Jakarta, 12 June 2017

Amendment-2 to RFP
RFP/UNDP/PMR/010/2017
Development of Profile of Greenhouse Gas Emissions from the
Indonesia's Power and Industry Sectors

Refer to the Deadline of Submission, it is amended with detail as follow:

Deadline of Submission, The letter should be received by UNDP no later than **12 June 2017, 23:59 (GMT+ 7 hours)**.

Amended to

Deadline of Submission, The letter should be received by UNDP no later than **21 June 2017, 23:59 (GMT+ 7 hours)**.

1. Refer to the “Instructions to Proposers – DATA SHEET “ DS No. 30 Document Data Sheet, it is amended with detail as follow:

30	C.15.2	Expected duration of contract (Target Commencement Date and Completion Date)	<i>7 months</i> <i>Target Commencement date : August 2017</i> <i>Completion Date : March 2018</i>
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Amended to

30	C.15.2	Expected duration of contract (Target Commencement Date and Completion Date)	<i>8 months</i> <i>Target Commencement date : August 2017</i> <i>Completion Date : March 2018</i>
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2. Additional Annex’s Section 3: Terms of Reference (TOR)

LIST OF ANNEXES

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ANNEX 4. SCOPE OF INDUSTRIES

ANNEX 1. TIMELINE

POWER SECTOR

Description	Deliverable	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March
			M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8
Sign contract		W4								
Scope of work 1: Initial preparation										
1.1. Initiate and participate in the kick off meeting with power working group of PMR to discuss the detail tasks:	a. Minutes of kick off meeting		W1							
1.2. Facilitate broad stakeholder consultations with national and local government entities as well as the private sector as needed;	b. Minutes of meetings		W1,2							
1.3. Identify the readiness from power sector in relation to GHG emission calculation and inventory, including data needed within the scope of this TOR, existing regulatory framework(s) in power sector, existing initiatives, and supporting activities. The team of consultants	c. Report of the readiness from power sector in relation to GHG emission calculation and inventory		W1,2							

are expected to also conduct desk study to compile already available information and data from existing research, studies, audits, which are already conducted										
1.4. Based on this TOR, submit detailed work plan within 4 weeks of the contract commencement date;	d. Detailed work plan		W3							
1.5. Update and revise the work plan based on DJK ESDM and UNDP comments.	e. Improved work plan		W4							
Scope of work 2: Prepare overview of Indonesia's power sector										
2.1 Summarize the national status quo of the climate change policy in general, and regulatory frameworks supporting the climate change mitigation within power sector in particular	a. Report on the national status quo of the climate change policy in general, and regulatory frameworks supporting the climate change mitigation within power sector in particular		W4	W1						

2.2 Summarize the status of the power sector in Indonesia including total output and production, revenues and share of GDP, and role of power sector in overall economy. The consultant shall also portrait the status of electricity generation, transmission and distribution	b. Report on the status of power sector in Indonesia.			W2						
2.3 Collate information about the status of power plants in Indonesia according to the following categories, including but not limited to source of energy, technologies, power plants efficiency, and power plants age. Consultant shall identify the significant energy uses or significant emissions sources.	c. Report on the status of power plants in Indonesia.			w3,4						
Scope of work 3. Provide and develop GHG emissions baseline for the Indonesia's power sector										
3.1. Provide data and information concerning GHG emission level and sources by type of technology in the period of 2000 - 2015 (including elaboration of approaches/methodology used for estimating GHG emissions level).	a. Report on overview and analysis of Indonesia's power sector emissions				W1 & w2					
3.2. Provide data and information related to existing national baseline	b. Report on overview of									

emissions scenario of the Indonesia's power sector developed by GOI.	existing baseline scenario.								
3.3. Review baseline emission factors of electricity grids including the methodology used and develop and pilot a methodology to calculate national electricity emissions factor. Consultant should calculate the national electricity emissions factor based on the most recent data provided by the GOI.	c. Review report on baseline emission factor of electricity grid.				W3,4				
	d. Report on development and piloting a methodology to calculate national electricity emissions factor.				W4				
3.4. Develop specific emissions baseline by type of technology using base year 2010.	e. Developed specific emissions baseline by type of technology					W1,2			
3.5. Conduct FGDs, workshops, site visits (if needed) to review, calculate, determine baseline emissions	f. Report of conducted events				W1,2,3,4	W1,2			
Scope of work 4: Estimate potential of emission reductions and abatement cost of mitigation actions									
4.1. Identify potential of GHG mitigation actions in power sector by	a. Minutes of workshop.					W3			

<p>2030 including NRE, fuel switching, and low carbon technology and energy efficiency based on stakeholder consultation. The consultant shall determine the cost of mitigation actions. Consultant shall ensure that the newest and valid data and information are used by employing various methodologies including desk studies, in depth interview, site visits and energy rapid assessments, and FGDs. It is expected that consultant to conduct energy rapid assessment in, at least, 10 selected power plants which represent categories as mentioned in task 2.2.</p>	<p>b. Report of field survey or rapid assessments conducted, including photo and all data and information identified</p>					W4	W1,2,3,4			
	<p>c. Report on potential mitigation actions in power sector by 2030.</p>					W4				
<p>4.2. Develop a comprehensive marginal abatement cost curve (MACC) which reflect the abatement potentials and cost for different mitigation options. The Consultant shall use robust and internationally recognized methodology to develop the MACC. All calculation data and assumptions used should be clearly described and include in the report. The consultant shall develop an</p>	<p>d. A comprehensive abatement cost curve, including the web based version.</p>							W1,2		

interactive web based version of the MACC.									
4.3. Develop a guideline to update the MACC. Consultant shall conduct socialization, and training to the power stakeholder on the general information of MACC.	e. A guideline to update the MACC							W2	
Scope of work 5: Final report									
5.1. Submit draft final report prior to stakeholder meeting to discuss draft report containing all report produced in scope of work 1 and 4.	a. Draft final report								W1
5.2. Conduct stakeholder meeting to discuss draft report for inputs and comments.	b. Minutes of stakeholder meeting to discuss draft report								W2
5.3. Finalize report based on all inputs and comments gathered and submit the report in English and Indonesian. The consultant shall submit a file storage (i.e. USB or CD) containing soft copy of editable version of final report, all presentation, photos and video, all data and calculation, and simulation result (if available).	c. Final report								W4

5.4. Conduct dissemination workshop, including training related MACC.	d. Minutes of dissemination workshop										W1
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INDUSTRY SECTOR

Description	Deliverable	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March
		M 1		M 2	M 3	M 4	M 5	M 6	M 7	M 8
Task 1: Initial preparation										
1.1. Facilitate the kick off meeting(s) with industry working group of PMR to discuss the detail tasks	Minutes of kick off meeting		WS 1.3							
1.2. Participate and initiate meetings with other relevant stakeholders as needed (e.g. other line ministries, industries, industrial associations, and other relevant stakeholders)	Minutes of meeting	WS 1.1, 1.2								
1.3. Identify and summarize the GHG emission characteristics in industry sectors in general and in 8 sub-sectors in particular. This includes the source of emissions from each sub-sectors, including direct and indirect emission from energy, IPPU, and waste	Minutes of meeting									

1.4. Identify the readiness from the 8 sub-sectors in relation to GHG emission calculation and inventory, including data needed within the scope of this TOR	Review report and gap analysis report									
1.5. Based on this TOR, initial meeting results and initial desk studies; submit detailed work plan and scope of study within 4 weeks of the contract commencement date	Detailed work plan									
1.6. Update and revise the work plan based on comments and inputs from industry working group and UNDP.	Improved work plan									
Task 2: Develop overview of industry sector										
2.1 Summarize the national status quo of the climate change policy in general, and regulatory frameworks supporting the climate change mitigation within industry sector in particular;	Review report of national status quo and current emission from the industry sector									
2.2 Capture the status of 8 industry sub-sectors in Indonesia including its contribution to GDP, the industrial population, and its role to national economy.	Draft report									

2.3. Based on the scope / constraints identified; collect and compile the data required within the scope of this TOR from 8 industry sub-sectors, including but not limited to production capacity, type and technology in each sub-sector. Depending on the readiness in each of its sub-sectors, some activities within the scope of this 2.3 can be carried out simultaneously with the activities of 3.4	Minutes of meetings, Draft report			WS 2.1, WS 2.2,	WS 2.3,	site visits				
Task 3: Provide and develop baseline of GHG emissions from energy, IPPU, and waste related activities in industry sector										
3.1. Identify GHG emissions and sources from each type of industry in 8 prioritized industry sub sectors and carried out key sources category analysis. The consultant shall use (and evaluate) available national GHG emission data as a basis (including elaboration of approaches/methodology used for estimating GHG emissions level).	Presentation material, minutes of meeting, Report on the baseline scenario for 8 sub-sectors									
3.2. Provide an overview of existing baseline emissions scenario for the sub sectors who already have baseline calculation, and develop (new) baseline scenarios for each of industry sub sectors within the 8 sub-sectors who do not have any initial calculation nor scenario. It should be noted that the baseline should cover baseline emission (t CO ₂ e/year) and specific emission (tC O ₂ e/t product).										

3.3. Develop specific emissions baseline by type of industries using base year 2010 (identified in point 3.1).				WS 3.4 , WS 3.5	WS 3.6, WS 3.1	WS 3.2, WS 3.3				
3.4 Conduct FGDs, workshops, site visits for each sub sector (for sampling purposes) to review, calculate, determine baseline emissions of each of type of industry in each of 8 sub sectors.										
				site visits						
Task 4: Estimate potential of emission reductions and develop scenarios for GHG abatement cost for each of 8 sub-sectors of industry										
4.1. Identify possible mitigation actions and prioritization of mitigation actions based on stakeholder consultation.	Draft report				WS 3.1, WS 3.2, WS 3.3					
4.2. Provide data and information concerning abatement cost curves in industry that have been published;										
4.3 Identify the appropriate methodology / tools for development of cost and impact scenarios. The team of consultant shall use internationally recognized methodology;	<ul style="list-style-type: none">• Meeting reports• Report of GHG profiling in industry sector									

4.4 Develop a comprehensive Marginal Abatement Cost Curve (MACC) based on the identified GHG emission reduction (as identified in point 4.1) and the different concrete mitigation actions (measures-based). The abatement opportunities shall be in-depth analyzed and developed separately based on the sub-sectors, including conclusions and recommendations. All calculation data and assumptions used should be clearly described and include in the report;	<ul style="list-style-type: none"> • Draft report on a comprehensive Abatement Cost Curve (measures-based) for 8 sub-sectors of industry 								
Task 5. Develop a comprehensive final report									
5.1 Submit draft final report prior to stakeholder meeting to discuss draft report containing all report produced in scope of work 1 to 4.	Draft final reports								
5.2 Conduct stakeholder meeting to discuss draft report for inputs and comments.	Minutes of meeting						WS 5.1		
5.3 Finalize report based on all inputs and comments gathered and submit the report in English and Indonesian. The consultant shall submit a file storage (i.e. USB or CD) containing soft copy of editable version of final report, all presentation, photos and video, all data and calculation, and simulation result (if available)	<ul style="list-style-type: none"> • Final report of GHG profiling in industry sector • Final report on a comprehensive Abatement Cost Curve (measures-based) for 8 sub-sectors of industry, including conclusions 								

	and recommendations									
5.4 Conduct a training and socialization to Gol, industries and associations on the general information of MACC and the result of the study.	<ul style="list-style-type: none"> • Training module • Power point presentation, meeting material 									WS 5.2

Note: All schedule of activities are subject to discussion

WS (Workshop): Refer to annex 2. Example: WS 5.2 in the table refers to dissemination workshop in annex 2.

ANNEX 2. LIST OF EXPECTED MINIMUM NUMBER OF ACTIVITIES (WORKSHOP, SEMINAR, FGD, CONFERENCE OR SIMILAR)

POWER SECTOR

No	Item	No of days	Pax	Location	Agenda
	Task 1: Initial preparation				
1.1	Kick off meeting	1	15	Jakarta	Kick off meeting with key stakeholders
1.2	Stakeholders consultation meeting	3	40	Bogor	Identify readiness, perform data gap analysis, and collecting data
1.3	Meeting to present work plan	1	50	Jakarta	Present draft workplan for inputs and comments
	Task 2: Prepare overview of Indonesia's power sector				
2.1	FGD in Jakarta	1	20	Jakarta	Collect data and information
	Task 3: Provide and develop GHG emissions baseline				
3.1	Workshop	3	50	Bogor	Develop specific emissions baseline
	Task4: Estimate potential of emission reductions and abatement cost of mitigation				
4.1	Workshop to identify potential of emission reduction from NRE	2	40	Bogor	Identify and discuss the potential emissions reduction from NRE
4.2	Workshop to identify potential of emission reduction from clean coal technology and fuel switching	2	40	Bogor	Identify and discuss the potential emissions reduction from CCT and fuel switching
4.3	Rapid energy assessment				
	These just indicative locations				
	Three coal power plants in Paiton area	tbd	N/A	Paiton	Rapid energy assessment to identify potential emission reduction
	Two coal power plant in Suralaya area	tbd	N/A	Suralaya	Rapid energy assessment to identify potential emission reduction
	Two gas power plants in Tanjung Priok area	tbd	N/A	Jakarta	Rapid energy assessment to identify potential emission reduction
	One diesel power plant in Cikarang area	tbd	N/A	Cikarang	Rapid energy assessment to identify potential emission reduction
	One coal power plant in Cilacap area	tbd	N/A	Cilacap	Rapid energy assessment to identify potential emission reduction
	One coal power plant in Tangerang area	tbd	N/A	Tangerang	Rapid energy assessment to identify potential emission reduction
4.4	Stakeholder meeting to discuss draft report	1	50	Bogor	Stakeholder meeting to discuss draft report
4.5	Dissemination workshop	3	60	Tbd	Presenting final result of the report of GHG profile, training on MACC

INDUSTRY SECTOR

No	Item	No of days	No of Pax	Location	Agenda
SC 1	Preparation				
1,1	Introduction workshop 1	3	50	Bogor	Identify readiness, detailing scope of activities & workplan
1,2	Introduction workshop 2	3	50	Bogor	
1,3	Kick off meeting (to be separated from power se	2	80	Bogor	Socialize activities, presentation of final workplan
SC 2	Develop overview of industry sector				
2,1	Workshop 1 (chemical, ceramic, glass)	2	60	Banten/serang/cilegon	collect and compile the data required
2,2	Workshop 2 (textile, cement, p&p)	2	60	bandung	collect and compile the data required
2,3	Workshop 3 (food & beverage, steel)	2	60	Surabaya	collect and compile the data required
2,4	Site visit sub sector A	3	10		data sampling (if needed)
2,5	Site visit sub sector B,C, ...	3	10		data sampling (if needed)
SC 3	emissions from energy, IPPU, and waste related activities in industry sector				
3,1	Workshop 1 (chemical, textile)	2	60	Semarang	for developing baseline
3,2	Workshop 2 (ceramic, glass, steel)	2	60	Surabaya	for developing baseline
3,3	Workshop 3 (food and beverage)	2	60	Yogya	for developing baseline
3,4	Workshop 4 (cement)	3	40	Denpasar	for reviewing baseline
3,5	Workshop 5 (pulp & paper)	3	60	Parapat/Medan	for reviewing baseline
3,6	Workshop 6 (fertilizer)	3	40	Palembang	for reviewing baseline
3,7	Site visits				
SC 4	Estimate potential of emission reductions and develop scenarios for GHG abatement cost for each of 8 sub-sectors of industry				
4,1	Workshop 1 (same week with 3.1)	1	60		to further identify & calculate emission reduction
4,2	Workshop 2 (same week with 3.2)	1	60		to further identify & calculate emission reduction
4,3	Workshop 3 (same week with 3.3)	1	60		to further identify & calculate emission reduction
SC 5	Develop a comprehensive final report				
5.1	Finalization workshop (to be separated from power sector	2	80	Bogor	finalizing draft reports
5.2	Dissemination workshop	3	80		presenting final results from the report of GHG profiling, training related with MACC

Note: The table represents minimum scenario in relation to number of activities and the grouping of sub-sectors within each scope of work. The team of consultants is expected to design and estimate the grouping or the number of stakeholder consultations (i.e workshops) and site visits needed in each scope of work, by referring to the table. If it is feasible, two workshops can also be conducted in parallel (one location at one time, for instance workshop 1 in 2.1 combined with workshop 2 in 2.2).

The site visits, however, shall only be conducted on the sub-sectors which are considered necessary to conduct field visits for the purposes of sampling, data collection and/or data confirmation.

ANNEX 3. DETAILS OF WORK AREAS AND DELIVERABLES

POWER SECTOR

Scope of work 1: Initial preparation		
1.1. Initiate and participate in the kick off meeting with power working group of PMR to discuss the detail tasks:	a. Minutes of kick off meeting	04-Aug-17
1.2. Facilitate broad stakeholder consultations with national and local government entities as well as the private sector as needed;	b. Minutes of meetings	11-Aug-17
1.3. Identify the readiness from power sector in relation to GHG emission calculation and inventory, including data needed within the scope of this TOR, existing regulatory framework(s) in power sector, existing initiatives, and supporting activities. The team of consultants are expected to also conduct desk study to compile already available information and data from existing research, studies, audits, which are already conducted	c. Report of the readiness from power sector in relation to GHG emission calculation and inventory	
1.4. Based on this TOR, submit detailed work plan within 4 weeks of the contract commencement date;	d. Detailed work plan	18-Aug-17
1.5. Update and revise the work plan based on DJK ESDM and UNDP comments.	e. Improved work plan	30-Aug-17
Scope of work 2: Prepare overview of Indonesia's power sector		

2.1 Summarize the national status quo of the climate change policy in general, and regulatory frameworks supporting the climate change mitigation within power sector in particular	a. Report on the national status quo of the climate change policy in general, and regulatory frameworks supporting the climate change mitigation within power sector in particular	22-Sep-17
2.2 Summarize the status of the power sector in Indonesia including total output and production, revenues and share of GDP, and role of power sector in overall economy. The consultant shall also portrait the status of electricity generation, transmission and distribution	b. Report on the status of power sector in Indonesia.	
2.3 Collate information about the status of power plants in Indonesia according to the following categories, including but not limited to source of energy, technologies, power plants efficiency, and power plants age. Consultant shall identify the significant energy uses or significant emissions sources.	c. Report on the status of power plants in Indonesia.	
Scope of work 3. Provide and develop GHG emissions baseline for the Indonesia's power sector.		
3.1. Provide data and information concerning GHG emission level and sources by type of technology in the period of 2000 - 2015 (including elaboration of approaches/methodology used for estimating GHG emissions level).	a. Report on overview and analysis of Indonesia's power sector emissions	10-Nov-17
3.2. Provide data and information related to existing national baseline emissions scenario of the Indonesia's power sector developed by GOI.	b. Report on overview of existing baseline scenario.	
3.3. Review baseline emission factors of electricity grids including the methodology used and develop and pilot a methodology to calculate national electricity emissions factor. Consultant should calculate the national electricity emissions factor based on the most recent data provided by the GOI.	c. Review report on baseline emission factor of electricity grid.	24-Nov-17
	d. Report on development and piloting a methodology to calculate national electricity emissions factor.	
3.4. Develop specific emissions baseline by type of technology using base year 2010.	e. Developed specific emissions baseline by type of technology	30-Nov-17

3.5. Conduct FGDs, workshops, site visits (if needed) to review, calculate, determine baseline emissions	f. Report of conducted events	
Scope of work 4: Estimate potential of emission reductions and abatement cost of mitigation actions		
4.1. Identify potential of GHG mitigation actions in power sector by 2030 including NRE, fuel switching, and low carbon technology and energy efficiency based on stakeholder consultation. The consultant shall determine the cost of mitigation actions. Consultant shall ensure that the newest and valid data and information are used by employing various methodologies including desk studies, in depth interview, site visits and energy rapid assessments, and FGDs. It is expected that consultant to conduct energy rapid assessment in, at least, 10 selected power plants which represent categories as mentioned in task 2.2.	a. Minutes of workshop.	02-Jan-18
	b. Report of field survey or rapid assessments conducted, including photo and all data and information identified	
	c. Report on potential mitigation actions in power sector by 2030.	
4.2. Develop a comprehensive marginal abatement cost curve (MACC) which reflect the abatement potentials and cost for different mitigation options. The Consultant shall use robust and internationally recognized methodology to develop the MACC. All calculation data and assumptions used should be clearly described and include in the report. The consultant shall develop an interactive web based version of the MACC.	d. A comprehensive abatement cost curve, including the web based version.	12-Jan-18
4.3. Develop a guideline to update the MACC. Consultant shall conduct socialization, and training to the power stakeholder on the general information of MACC.	e. A guideline to update the MACC	
Scope of work 5: Final report		
5.1. Submit draft final report prior to stakeholder meeting to discuss draft report containing all report produced in scope of work 1 and 4.	a. Draft final report	30-Jan-2018
5.2. Conduct stakeholder meeting to discuss draft report for inputs and comments.	b. Minutes of stakeholder meeting to discuss draft report	14-Feb-18

5.3. Finalize report based on all inputs and comments gathered and submit the report in English and Indonesian. The consultant shall submit a file storage (i.e. USB or CD) containing soft copy of editable version of final report, all presentation, photos and video, all data and calculation, and simulation result (if available).	c. Final report	28-Feb-18
5.4. Conduct dissemination workshop, including training related MACC.	d. Minutes of dissemination workshop	09-Mar-18

INDUSTRY SECTOR

Scope of work 1: Initial preparation		
Scope of work	Deliverables/Output	Due date
1.1 Facilitate the kick off meeting(s) with industry working group of PMR to discuss the detail tasks	<ul style="list-style-type: none"> • Presentation material • Minutes of kick off meeting 	Week 4, August 2017
1.2 Participate and initiate meetings with other relevant stakeholders as needed (e.g. other line ministries, industries, industrial associations, and other relevant stakeholders)	Minutes of meetings	Week 1, 2, August 2017

1.3 Identify and summarize the GHG emission characteristics in industry sectors in general and in 8 sub-sectors in particular. This includes the source of emissions from each sub-sectors, including direct and indirect emission from energy, IPPU, and waste	Draft report	Week 3, August 2017
1.4 Identify the readiness from the 8 sub-sectors in relation to GHG emission calculation and inventory, including data needed within the scope of this TOR		Week 3, August 2017
1.5 Based on this TOR, initial meeting results and initial desk studies; submit detailed work plan and scope of study within 4 weeks of the contract commencement date	Detailed work plan	21 August 2017
1.6 Update and revise the work plan based on comments and inputs from industry working group and UNDP.	Improved work plan	30 August 2017
Scope of work 2: Develop overview of industry sector		
Scope of work	Deliverables/Output	Due date
2.1 Summarize the national status quo of the climate change policy in general, and regulatory frameworks supporting the climate change mitigation within industry sector in particular;	Review report of national status quo and current emission from the industry sector	8 September 2017
2.2 Capture the status of 8 industry sub-sectors in Indonesia including its contribution to GDP, the industrial population, and its role to national economy.	Draft report	15 September 2017
2.3 Based on the scope / constraints identified; collect and compile the data required within the scope of this TOR from 8 industry sub-sectors, including but not limited to production capacity, type and technology in each sub-sector. Depending on the readiness in each of its sub-sectors, some activities within the scope of this 2.3 can be carried out simultaneously with the activities of 3.4	<ul style="list-style-type: none"> Minutes of meetings Draft report 	30 September 2017
Scope of work 3: Provide and develop baseline of GHG emissions from energy, IPPU, and waste related activities in industry sector		
Scope of work	Deliverables/Output	Due date
3.1 Identify GHG emissions and sources from each type of industry in 8 prioritized industry sub sectors and carried out key sources category analysis. The consultant shall use (and evaluate) available national GHG emission data as a basis (including elaboration of approaches/methodology used for estimating GHG emissions level).		6 October 2017

3.2 Provide an overview of existing baseline emissions scenario for the sub sectors who already have baseline calculation, and develop (new) baseline scenarios for each of industry sub sectors within the 8 sub-sectors who do not have any initial calculation nor scenario. It should be noted that the baseline should cover baseline emission (t CO2e/year) and specific emission (tC O2e/t product).	Presentation material, minutes of meeting, Report on baseline of GHG emissions from energy, IPPU, and waste related activities in each of 8 sub-sectors	30 November 2017
3.3 Develop specific emissions baseline by type of industries using base year 2010 (identified in point 3.1).		30 November 2017
3.4 Conduct FGDs, workshops, site visits for each sub sector (for sampling purposes) to review, calculate, determine baseline emissions of each of type of industry in each of 8 sub sectors.		30 November 2017
Scope of work 4: Estimate potential of emission reductions and develop scenarios for GHG abatement cost for each of 8 sub-sectors of industry		
Scope of work	Deliverables/Output	Due date
4.1 Identify possible mitigation actions and prioritization of mitigation actions based on stakeholder consultation.	<ul style="list-style-type: none">• Meeting reports• Draft Final report of GHG profiling in industry sector• Draft Final report on a comprehensive Abatement Cost Curve (measures-based) for 8 sub-sectors of industry, including conclusions and recommendations	15 December 2017
4.2 Provide data and information concerning abatement cost curves in industry that have been published;		15 December 2017
4.3 Identify the appropriate methodology / tools for development of cost and impact scenarios. The team of consultant shall use internationally recognized methodology;		15 December 2017
4.4 Develop a comprehensive Marginal Abatement Cost Curve (MACC) based on the identified GHG emission reduction (as identified in point 4.1) and the different concrete mitigation actions (measures-based). The abatement opportunities shall be in-depth analyzed and developed separately based on the sub-sectors, including conclusions and recommendations. All calculation data and assumptions used should be clearly described and include in the report;		15 January 2017
Scope of work 5.		
4.1 Submit draft final report prior to stakeholder meeting to discuss draft report containing all report produced in scope of work 1 to 4.	<ul style="list-style-type: none">• Draft final report of GHG profiling in industry sector• Draft final report on a comprehensive Abatement Cost Curve (measures-based) for 8 sub-sectors of industry,	15 January 2018

	including conclusions and recommendations	
4.2 Conduct stakeholder meeting to discuss draft report for inputs and comments.	Minutes of meeting	Week 3 January – Week 1 February 2018
4.3 Finalize report based on all inputs and comments gathered and submit the report in English and Indonesian. The consultant shall submit a file storage (i.e. USB or CD) containing soft copy of editable version of final report, all presentation, photos and video, all data and calculation, and simulation result (if available).	<ul style="list-style-type: none"> • Final report of GHG profiling in industry sector • Final report on a comprehensive Abatement Cost Curve (measures-based) for 8 sub-sectors of industry, including conclusions and recommendations 	9 th March 2018
4.4 Conduct a training and socialization to Gol, industries and associations on the general information of MACC and the result of the study.	<ul style="list-style-type: none"> • Training module • Power point presentation, meeting material 	Week 1 march 2018

ANNEX 4. SCOPE OF INDUSTRIES

No	Sub sector	Industries (to choose >6000 TOE)	Note
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1	Cement	Cement	Baseline review
2	Ceramic and glass	Ceramic	Baseline development
		Glass	Baseline development
3	Fertilizer	Ammonia and Urea	Baseline review
4	Chemical	Nitrit Acid	Baseline development
		Calcium Carbide	
		Carbon Black	
		Ethylene Dichloride	
		Ethylene Oxide	
		Ethylene	
		VCM	
		Other chemical industries	
5	Pulp & paper	Integrated P&P	Baseline review
		Pulp	
		Pulp & Tissue	
		Tissue & diapers	
		Paper	
6	Food and beverage*		Baseline development
	Food*	Fish Processing	
		Meat & Poultry	
		Starch Production	
		Sugar (including refinery)	
		Vegetable Oils	
	Beverage*	Beer & Malt	
		Coffee	
		Dairy Products	

		Vegetables, Fruits & juices	
		Wine & Vinegar	
7	Textile	Polyester	Baseline development
		Other textile industries	Baseline development
8	Steel	Steel	Baseline development
		Iron	Baseline development
		Aluminum	Baseline development

*Currently in discussion with Ministry of Industry

Note: The table only represents minimum (and considered mandatory) number of industry types in each of sub sectors to be covered in the GHG emission profiling.