

**TABLE FOR COMMENTS**

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0	1	2	3	4	5	6
#	Para No./ Annex / Figure / Table	Line Number	Type of comment ge = general te = technical ed = editorial	Comment (including justification for change)	Proposed change (including proposed text)	Assessment of comment (to be completed by UNFCCC secretariat)
1			ge	For evaluating the upstream CO2 emission, it is important to confirm the evaluating condition. Each fossil fuel emission factor should be carefully considered on the same condition.		

Template for comments

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2	Table 1 (page 4)		te	<p>The number, shown in Table1 as Default emission factor of LNG (47.7), seems to be the sum of all Default upstream emission factors of each stage of LNG supply chain in Table 3.</p> <p>But there are some fatal mistakes in calculating these Default emission factors in Table 3.</p> <p>Stages of default emission factors in Table 3 do not properly reflect industry practices and some mistakes can be found in handling the referenced data.</p> <p>The referenced paper, CLNG2009, shows the Default Emission Factor of "Processing / Liquefaction", which is the added up numbers of "Processing" and "Liquefaction".</p> <p>But "Potential key activities undertaken" of "NG Processing" in Table3 doesn't include "Liquefaction" but using the number which includes that of "Liquefaction" process.</p> <p>Emission number of "Liquefaction" is double counted.</p> <p>Usually, LNG pump pressure and expansion pressure by LNG Vaporization are strong enough to transport NG without any extra pressure.</p> <p>"NG Transmission", like pipeline grid in the U.S., after "LNG Vaporization &amp; Compression" is unusual, especially in developing countries. "NG Transmission" stage in the LNG consuming country should be deleted.</p> <p>Regarding the figure of "NG Transmission", it seems that referenced number is the divided number of total GHG emissions from U.S. gas pipelines ONLY by the amount of LNG used for power generation.</p> <p>Finally, Default Emission Factor (1.9) of "NG Exploration &amp; Production" seems to be calculated by using wrongly referenced data from CLNG2009. CO2e/MMBtu (1.889) should be used. For, the number (15.13) is CO2e Emissions per electricity output of LNG fuelled modern NGCC power plant.</p>	Based on the comment, the figure of 47.7 for LNG in Table 1 shall be replaced to 15.3 or lower, in line with revised Default upstream emission factors in Table 3.	

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3	Table 3 (Page 14-15)		te	<p>Default Emission Factor (1.9) of "NG Exploration &amp; Production" should be revised, using CO2e/MMBtu (1.889) number from the referenced CLNG2009.</p> <p>Default Emission Factor (16.1) of "NG Processing" should be revised, using CO2e/MMBtu (16.167) number from the referenced CLNG 2009.</p> <p>In addition, Default Emission Factor (4.8 to 13.3) of "NG Liquefaction &amp; LNG Storage" should be deleted to avoid counting twice.</p> <p>Default Emission Factor (6.4) of "NG Transmission" should be revised.</p> <p>Default Emission Factor (5.9) of "LNG Transportation" should be revised, using CO2e/MMBTu (6.409) number from the referenced CLNG2009.</p> <p>Default Emission Factor (0.8) of "LNG Vaporization &amp; Compression" should be revised, using CO2e/MMBTu (0.155) and CO2e/MMBTu (0.850) numbers from the referenced CLNG2009.</p> <p>The "NG Transmission" stage after "LNG Vaporization &amp; Compression" should be deleted.</p>	<p>Based on the comment, these figures in Table 3 shall be replaced as follows;</p> <ul style="list-style-type: none"> <li>· replace present figure of 1.9 for "NG Exploration &amp; Production" to 0.8 ;</li> <li>· replace present figure of 16.1 for "NG Processing " to 6.9 ;</li> <li>· replace present figure of 6.4 for "NG Transmission", which counts for the emission in the LNG supplying country, to the appropriate one ;</li> <li>· delete the figure for "NG Liquefaction &amp; LNG Storage" to avoid counting twice ;</li> <li>· replace present figure of 5.9 for "LNG Transportation " to 2.8 ;</li> <li>· replace present figure of 0.8 for "LNG Vaporization &amp; Compression" to 0.4 ;</li> <li>· delete the figure for "NG Transmission" , which count for the emission in the LNG consuming country.</li> </ul>	
4	Footnote 1 (Page 4)		ge	<p>More explanation is needed for how these discount factors of oil-based fuels and coal-based fuels are calculated.</p> <p>Also, it should be explained why such kind of adjustments are applicable only for oil-based fuels and coal-based fuels.</p>	Without appropriate clarification, these adjustments should not be adopted.	