



**Approved baseline and monitoring methodology /
methodological tool clarification response form
(Version 03.0)**

INFORMATION TO BE COMPLETED BY THE SECRETARIAT OR PANEL / WG

Date and number of Panel / WG meeting:	20-24 Sep 2021 / MP 86
Title/Subject of the request for clarification:	Applicability of Liquefied Natural Gas (LNG) use domestically as alternative to utilization of otherwise gas flared under the AM0009 version 7.0.
Reference number of the request for clarification:	AM_CLA_0293
Exact reference (number, title and version) of the methodology or methodological tool to which the request for clarification applies:	AM0009: Recovery and utilization of gas from oil fields that would otherwise be flared or vented --- Version 7.0
Fast track or Regular track:	<input type="checkbox"/> Fast track <input checked="" type="checkbox"/> Regular track

Summary of the request for clarification

Original text from Stakeholder:

The AM0009 version 07 methodology recognizes export of recovered gas through direct connection to domestic gas pipeline or through the use of compressed natural gas (CNG) as virtual pipeline that will be decompressed and connected back to the pipeline at the point of delivery.

According to the version 7.0, it provides definition of the terms used.

- Recovered gas - the associated gas and/or gas-lift gas recovered from the oil wells
- Gas pipeline - the pipeline with capacity to transport more than 1 million Nm3 of gas per day
- Compressed natural gas (CNG) - the processed gas that has been compressed to high pressure (typically > 200 bar) for the purpose of storage and/or transportation

The use of LNG was however not mentioned or defined. However, LNG is defined as

“Natural gas that has been cooled to –260° F (–162° C), changing it from a gas into a liquid that is 1/600th of its original volume”.

Although the initial concept of LNG was to increase worldwide LNG production and regasification facilities to create a safe, reliable and efficient network to transport liquefied natural gas around the world, this narrative is changing as the use of LNG in Nigeria is domesticated in country than the earlier narrative of exporting abroad.

This is because considering the size of the country and dearth of gas pipeline infrastructure, the use of mini-LNG has been identified as a way of supplying stranded gas to any part of the country within a short period of time to allow for utilization of clean gas for power generation and Industrial purposes.

It should be noted that Nigeria has a peculiar situation considering locations of some of the fields that flares are either swampy or are offshore; mostly they are several miles away from the existing gas infrastructure.

The two key concerns are that:

- This will require substantial investment. Implementing gas pipeline project in swampy or offshore locations are outrageously expensive especially when the flare volumes from such fields are not high enough to attract interest by the project proponent and other project developers.
- There is always an onerous task on approval process with the Nigeria government on request to implement gas pipelines on the high sea for exporting recovered gas to the shore where

they will be used especially when the volumes are insignificant.

It is therefore important to state that alternative to this option will be continuous gas flaring from such fields as putting off those flares are very expensive regardless of the option considered.

Mindful of the critical implications of developing such gas flare reduction project, some of the project owners/developers of such fields in Nigeria are strongly considering the use of Mini LNG to deliver gas from offshore and swamp fields to any location within the country so as to bridge the gas pipeline infrastructural gap, improve the use of gas domestically and further reduce GHG emissions. Also, the option of carbon credit that could improve the economic return on such investment due to the high risk involved in developing LNG for domestic utilization is one that is considered in the investment decision.

The project proponent observed in accordance to the AM0009 methodology versions that supports CNG projects approach to leakage emissions due to the use of fossil fuels and/or electricity due to the compression, decompression and transportation of CNG; hence it has envisaged such requirement for the use of LNG as means of virtual pipeline as leakages associated with liquefaction process of the gas, regasification at the point of use and transportation of LNG will also be considered similar to that of CNG.

Similarly, the proponents of these projects have also identified approach to monitor and track the LNG tanks at the point of use and to keep records of refillings. It is clear to the project proponents that it will be assumed that the volume of recovered gas flared is measured prior liquefaction and determined at the LNG tanks utilized at the point of use. As the use of LNG domestically is being considered for use in the country, the project developers have mapped out monitoring process which would be carried out in line with the AM0009 methodology that considered use of CNG. Some of the already identified considerations for monitoring shall include:

- Codifying and monitoring the LNG tanks
- Codifying and monitoring the trucks for transporting the LNG from the LNG plant to the point of use
- Geo-tracking the LNG tanks to ensure their point of use and metered its usage using a totalizer meter that will be tracked
- During periodic verification process, total number of LNG tanks utilized during the monitoring period shall count and the fuel consumed for trucking shall be logged
- Fuel consumed for onsite use at the point of gas recovery, liquefaction, transportation and regasification shall be logged for each monitoring period. Also, applicable electricity consumed in the process value chain will also be considered.

Although the use of LNG was not mentioned in the AM0009 version 7.0, we hereby request the clarification of the UN if mini-LNG projects in Nigeria that could show transparently how it will monitor its LNG production chain to the point of consumption (delivery to pipeline to end user) can be considered as project activity under the AM0009 methodology.

Our request is premised on the fact that this LNG project will be applied in a similar fashion as that of CNG that is already approved in the methodology. Should this be allowed, it will enable projects to out the gas flares and put it to productive. The registration of such projects would lead to additional benefits to support the need for investment.

Clarification by the secretariat or Panel / WG

The Methodologies Panel (Meth Panel) would like to thank the stakeholder for the submission.

The Meth Panel would like to clarify that under the current version of the methodology (under **section 2.2 Applicability**), there are only two scenarios envisaged for the processed recovered gas: either:

- (i) transported to a gas pipeline directly; or
- (ii) compressed to CNG first, then transported by trailers/trucks/carriers and then decompressed again, before it finally enters the gas pipeline.

The methodology (section 5.3 Baseline emissions) requires the utilization of the recovered gas to displace the use of other fossil fuel sources. For example:

- (i) the use of recovered gas in a plant displaces the use of non-associated gas in that plant; or

- (ii) the injection of the recovered gas into a natural gas pipeline to displace the natural gas.

The methodology has not defined the use of LNG as an outcome of the project activity, nor has it provided the provisions to calculate the potential project or leakage emissions arising from the production or transportation of the LNG. Therefore, the Meth Panel is of the view that the methodology in its current form cannot be directly applied for the project situation described in the request.

Given the above considerations, should the intended project activity meet all of the applicability conditions of the methodology, the stakeholder may wish to submit a request for revision to include the scenario where LNG is an outcome of the recovered associated gas, including all the necessary methodological requirements such as all of the relevant project/leakage emissions and associated monitoring parameters relevant to the proposed project activities, which may include emissions from energy consumption required for production of LNG.

Version(s) of the approved methodology / methodological tool to which the clarification is applicable:

AM0009: Recovery and utilization of gas from oil fields that would otherwise be flared or vented --- Version 7.0

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	13 May 2016	Revised to include the row "Version(s) of the approved methodology / methodological tool to which the clarification is applicable"
02.0	18 July 2013	Revised to remove the row "Date and signature of the chair and vice chair of Panel/WG (in case of clarification by Panel/WG)"
01.0	4 July 2013	Initial publication. This document supersedes and replaces the following documents: <ul style="list-style-type: none"> • Recommendation Form for Small Scale Methodologies (F-CDM-SSCwg) (Version 01.1) • Recommendation Form for Small Scale A/R Methodologies and Procedures (F-CDM-SSC-AR) (Version 01.1)

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