APPENDIX 4

Terms and Conditions for Peer Customers using Pipeline Deliveries

(Requirement applies primarily for Gas or Liquefied-type Gas product delivery)

A	**Requirements for ALL pipelines.** **The counterparty acknowledges and agrees that:**
1.	Pipeline (including line isolation and product evacuation equipment) and each connection are built as per designed specifications and are free from leaks and in good condition. All equipment used related to the pipeline transport is designed and manufactured according to internationally recognized (pressure vessel) design codes (e.g. ASME, API, PED, or equivalent local regulatory code) and is suitable for the operating conditions. Counterparty to make the design drawings and specifications available upon request by Seller.
2.	Maintenance and inspection intervals are pre-determined and comply with legal requirements and applicable industry standards, in particular for critical equipment.
3.	A positive differential pressure is maintained or differential flow detection exists between supply pipeline and other parties' installations, and there is automatic closure of a block valve to prevent overpressure and backflow in event of a leak.
4.	Pipelines installed outside the boundary fence have a leak detection system/procedure to monitor and control leaks. A process or procedure to shut down safely in case of a suspected leakage is available. Regular physical inspections and checks for leakage are executed. Thermal expansion as result of closed block valves is taken into account (*e.g.*, procedures to blow empty the line, a thermal relief valve with outlet to safe location). As a minimum, one of the following leak systems/procedure or equivalent are in place: • in and outgoing flow comparison/trending; and • a dog sniffer round at least annually, • in case of a double walled pipeline, monitoring media between the walls to detect any product in it.
5.	The design of the facility can accommodate the relieving capacity of the pipeline due to thermal expansion.
6.	Meters and alarms are proved / calibrated at legally required intervals or (if no legal requirement) otherwise at set test intervals, *e.g.*, determined by the Safety Integrity Level (SIL), and calibration certificates are available.
7.	There are dedicated (per product) lines in place to avoid cross product contamination and routing is arranged to be fail-safe (product can only flow to the correct storage tank). NOTE: if lines are not dedicated, provide details of the line cleaning procedures (this HSSE requirement is not applicable for green and yellow banded products).
8.	There is a reverse flow protection mechanism, or the pipeline valves and transfer related equipment are lined-up/designed to prevent backflow of product from reactor/storage tank to Seller's supply pipeline (to prevent contamination). SIL level (or same risk reduction as per SIL) is in line with the relevant product. There is an intermediate storage vessel between supply line and counterparty's reactor, or if there is no storage vessel between reactor and supply pipeline, details of backflow prevention to assure no unintended consequences as demonstrated by risk assessment (e.g. HAZOP) are provided.
9.	An emergency response plan (including line isolation and product evacuation) that includes guidance on how to manage all predicted emergencies that may occur and require coordinated action or communication between the parties is available and agreed
10.	If the supply to storage is discontinuous, measures are implemented to prevent unintended flow to or from such storage.
11.	There is a flow control mechanism to maintain the designed / agreed supply rate / pressure to prevent surge or high flow situations.
12.	Pipelines are electrically bonded and grounded (connected to earth) and the earthing is regularly inspected. Buried steel pipelines are cathodically protected and regularly inspected per regulation or industry standards to ensure corrosion mitigation is in place.
13.	For new pipeline(s), a surge study has been conducted and is available upon request by Seller.

	For existing pipeline(s), it has been verified (for example by a HAZOP study) that the pipeline is operated within its maximum allowable working pressure for both normal and abnormal conditions. The verification has considered potential hydraulic surges such as pump startups/shutdowns, valve closures and power losses.
14.	Standard operating procedures exist to support minimum supply flow or possible line purging during shutdown, pigging etc. by Seller, including emergency response on line isolation and product evacuation.
15.	There is established communication procedures/protocol on flow management between Counterparty and Seller operations (via third parties where applicable).
16.	Any utility lines connected to the process or supply line are fitted with adequate backflow protection.
17.	Any changes to the design, product, operational, inspection & maintenance intervals and/or installation of the pipeline shall undergo a 'Management of Change' process (or equivalent).
18.	Procedure is present in order to manage override of instrument protective functions (safe guarding).
19.	A permit to work system concerning physical work to the pipeline and associated equipment is present and used.
B	**Product specific requirements (in addition to A 1-22) for ethylene oxide. The counterparty acknowledges and agrees that:**
20.	To prevent backflow from customer processes (primarily the reactor) to Seller's EO supply pipeline, the following requirements must be met: 1. In the case where the pipeline is feeding EO straight into the reactor, a SIL 3 safeguarding or equivalent is mandatory, or 2. In the case where EO supply has an intermediate storage vessel, but no SIL 3 safeguarding or equivalent is provided between storage vessel and reaction section, a SIL 2 safeguarding or equivalent is required (i.e. the storage vessel is credited as an independent barrier), or 3. In the case where EO supply has an intermediate storage vessel and SIL 3 safeguarding or equivalent is provided between storage vessel and reaction section, backflow protection provided by at least two different types of non-return valves (or equivalent).
21.	The storage vessels are fitted with a nitrogen padding system to ensure that EO in the vapour space is maintained in the non-explosive region.
22.	Nitrogen supply is available with a purity of 99.8%. All lines from nitrogen supply system towards EO storage and other connected processes are dedicated or fitted with adequate backflow protection.
C	**Product specific requirements (in addition to A 1-22) for ethylene. The counterparty acknowledges and agrees that:**
	Start-up procedure takes fully into account the conditions for ethylene decomposition, as well as the presence of air/oxygen/ nitrogen in the line, before re-pressurizing to operational conditions.

Each of Seller and Buyer is highly committed to health, safety and environment (HSSE), seeks to promote safe handling of its products throughout the value chain and has HSSE policies and standards in place to appropriately manage the risks associated with handling the Product. The above table contains Seller's minimum requirements for safe receipt and storage in connection with pipeline deliveries of Product. If Seller reasonably concludes that any receipt and/or storage facilities in connection with pipeline deliveries at Buyer's receipt location presents a significantly unsafe situation, Seller may notify Buyer of its concerns and recommendations in writing and both Parties shall work together and in good faith to remedy such concerns by reasonable means within a reasonable time not to exceed sixty (60) days after Seller's written notification.

Additionally, if any major incident occurs at Buyer's facilities in connection with the receipt or storage of the Product at Buyer's facilities, including the release of any hazardous substance, the death or lost time injury of any person or loss of primary containment of any product exceeding one hundred kilograms, Buyer shall promptly notify Seller of such event and allow Seller or a third party designated by Seller the option to provide input to the investigation of such incident. Buyer shall notify Seller of the results of its incident investigation and its plan to remediate the cause of the incident within four (4) weeks from the date of the incident. Seller shall notify Buyer of any concerns or recommendations it has regarding

Buyer's remediation plan within two (2) weeks of receiving notification of the remediation plan (the "Seller's Notification"). The Parties shall attempt to resolve any differences they may have regarding the remediation plan. If any such differences are not resolved to Seller's satisfaction within four (4) weeks of the date of Seller's Notification, Seller shall have the right to terminate this Contract with 30 days notice by giving written notice of termination to Buyer if Buyer fails to mitigate the cause of the incident in a manner acceptable to Seller, or an independent expert appointed in accordance with the provisions below has not determined that receipt or storage activities can be safely carried out at Buyer's facilities, within 120 days of the date of the incident.

Either Buyer or Seller shall have the right, by notification to the other, to have an independent person (the "Expert") examine Buyer's facilities to determine whether the receipt and/or storage of the Product can be safely carried out at Buyer's receipt location. The Expert shall be appointed jointly by the Parties, and shall be a member of or associated with one of the following organizations: Responsible Care Auditors, Chemical Distribution Institute, Safety and Quality Assessment System or National Association of Chemical Distributors, or as otherwise agreed by the Parties. The focus of the Expert's review shall be Buyer's plan to mitigate the cause of an above-described incident. Buyer shall provide the Expert with reasonable and timely access to Buyer's facilities. The Expert shall provide his or her written determination and reasons for that determination to both Buyer and Seller. The Expert's determination shall be binding on Buyer and Seller. The costs of the Expert shall be shared equally by Buyer and Seller.

By conducting an appraisal, requesting Buyer to perform a self-assessment of Buyer's facilities, or specifying recommendations to be implemented by Buyer, neither Seller nor any of its designated agents assumes any obligation or liability regarding the HSSE obligations of Buyer or any obligation or liability for personal injury or property damage resulting from Buyer's operations.