NETL Life Cycle Inventory Data
Process Documentation File

Process Name: LNG Regasification, Construction

Reference Flow: 1 piece of LNG Regasification, Construction

Brief Description: This process encompasses the construction of a LNG regasification facility.

Section I: Meta Data

Geographical Coverage: US **Region:** N/A

Year Data Best Represents: 2010

Process Type: Installation Process (IP)

Process Scope: Gate-to-Gate Process (GG)

Allocation Applied: No

Completeness: Individual Relevant Flows Captured

Flows Aggregated in Data Set:

☑ Process ☐ Energy Use ☐ Energy P&D ☐ Material P&D

Relevant Output Flows Included in Data Set:

Releases to Air:	☐ Greenhouse Gases	☐ Criteria Air	☐ Other
Releases to Water:	☐ Inorganic	☐ Organic Emissions	☐ Other
Water Usage:	☐ Water Consumption	☐ Water Demand (throughput)	
Releases to Soil:	☐ Inorganic Releases	☐ Organic Releases	☐ Other

Adjustable Process Parameters:

None.

Tracked Input Flows:

Concrete	*[Technosphere] Amount of concrete required for the construction of a LNG regasification facility.*

Structural steel	*[Technosphere] Amount of structural steel required for the construction of a LNG regasification facility.*

Tracked Output Flows:

LNG Regasification, Construction [Insert]	*Reference flow*

Section II: Process Description

Associated Documentation

This unit process is composed of this document and the data sheet (DS) *DS_Stage 1-5_C_LNG_Regasification_ Facility_2013.01.xlsx*, which provides additional details regarding relevant calculations, data quality, and references.

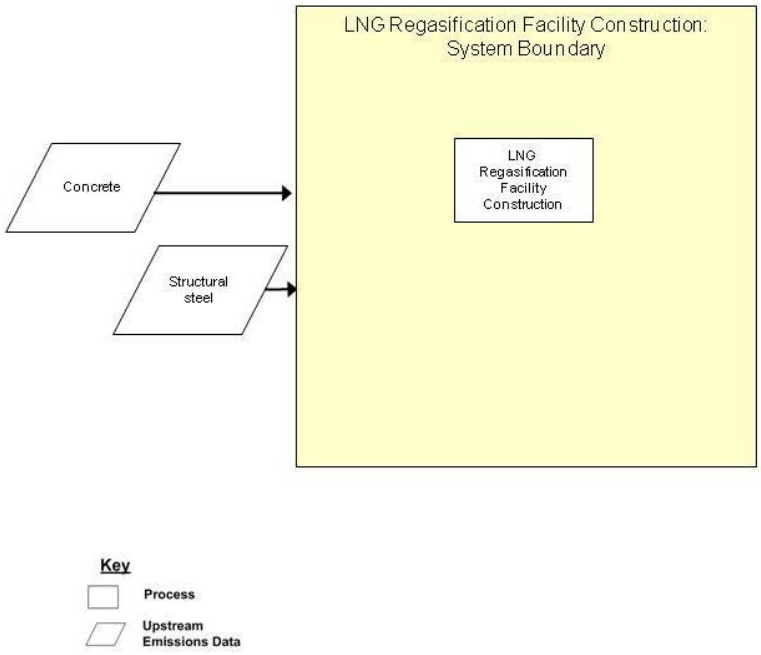
Goal and Scope

This unit process provides a summary of relevant input and output flows associated with the construction of a LNG regasification facility built in Turkey. The facility consists of LNG storage tanks, process piping system, pipeline, shore protection, and jetty construction. Key inputs are concrete and structural steel. The unit process is based on a reference flow of one piece of LNG regasification facility construction. The relevant flows of this unit process are described below and shown in **Figure 1**.

Boundary and Description

Figure 1 provides an overview of the boundary of this unit process. Emissions related to the physical assembly of the LNG regasification facility are not included in this study. Upstream emissions from the production of raw materials used for the construction of the regasification facility (e.g. concrete) are calculated outside the boundary of this unit process.

Figure 1: Unit Process Scope and Boundary



Data for the construction of the regasification facility was based on a LNG regasification facility in Turkey (NACO, 2009). The materials for the construction of the facility were concrete and structural steel. Concrete input was multiplied by its density (Prusinski et al, 2004) to scale the item to the reference flow of 1 piece of LNG regasification facility. The other input, structural steel, was converted to the reference flow. Reinforcement steel was included in the structural steel input.

Table 1: Unit Process Input and Output Flows

Flow Name	Value	Units (Per Reference Flow)
Inputs		
Concrete	1.72E+08	kg
Structural steel	1.88E+07	kg
Outputs		
LNG Regasification, Construction [Insert]	1.00E+00	piece

* **Bold face** clarifies that the value shown *does not* include upstream environmental flows.

Embedded Unit Processes

None.

References

NACO. (2009) *Marmara Ereglisi LNG Import Terminal*. Retrieved June 11, 2013, from http://www.naco-construction.com/ProjectDetail.asp?PID=91.

Prusinski, J.R., Marceau, M.L., et al. (2004). *Life Cycle Inventory of Slag Cement Concrete. Eighth CANMET/ACI International Conference on Fly Ash, Silica Fume, Slag, and Natural Pozzolans in Concrete-Supplemental Papers*. Farmington Hills, MI. Retrieved May 13, 2013, from http://www.slagcement.org/download/123321_U128801__71549/Life%20Cycle%20Inventory%20of%20Slag%20Cement%20Concrete.pdf.

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Section III: Document Control Information

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