

Optimization of Landed Cost for Liquefied Natural Gas Delivered to Cove Point, MD

Alfred W. D'Ambrosio, P.E., (freddambrosio@earthlink.net)

Engineering Management

The University of North Carolina at Charlotte

Prepared with Support and Input Provided by:

EMGT 6090 O02 Engineering Systems Optimization

Instructor: Prof. Ertunga Ozelkan (ecozelka@uncc.edu)

Abstract:

Liquefied Natural Gas (LNG) is currently being imported into the United States at four locations; Everett, MA; Cove Point, MA; Elba Island, GA and Lake Charles, LA. The infrastructure required to bring LNG into the market ranges from \$1 to \$1.5 billion. LNG deliveries require either long term purchase agreements or two to six month lead time to schedule shipping vessels for spot market purchases. In order to insure financial viability of these projects, LNG must clear market pricing. Two key elements required to insure financial viability in these capital intensive products are: 1) minimizing the cost of delivered (landed) LNG to the facility and 2) maximizing throughput of LNG into the market by maintaining an uninterrupted supply. The objective of this study is to determine minimum supply costs at maximum delivery rate based on supply point location. For purposes of simplifying the optimization model variables Cove Point, MD was selected as the landing point for LNG deliveries. Cove Point, MD was selected because it is strategically located on the Mid-Atlantic Coast and feeds into the natural gas distribution system serving the largest energy consuming area in the United States.

Keywords: Natural Gas, Liquefied Natural Gas, Cove Point, LNG Tankers