



Technical Update

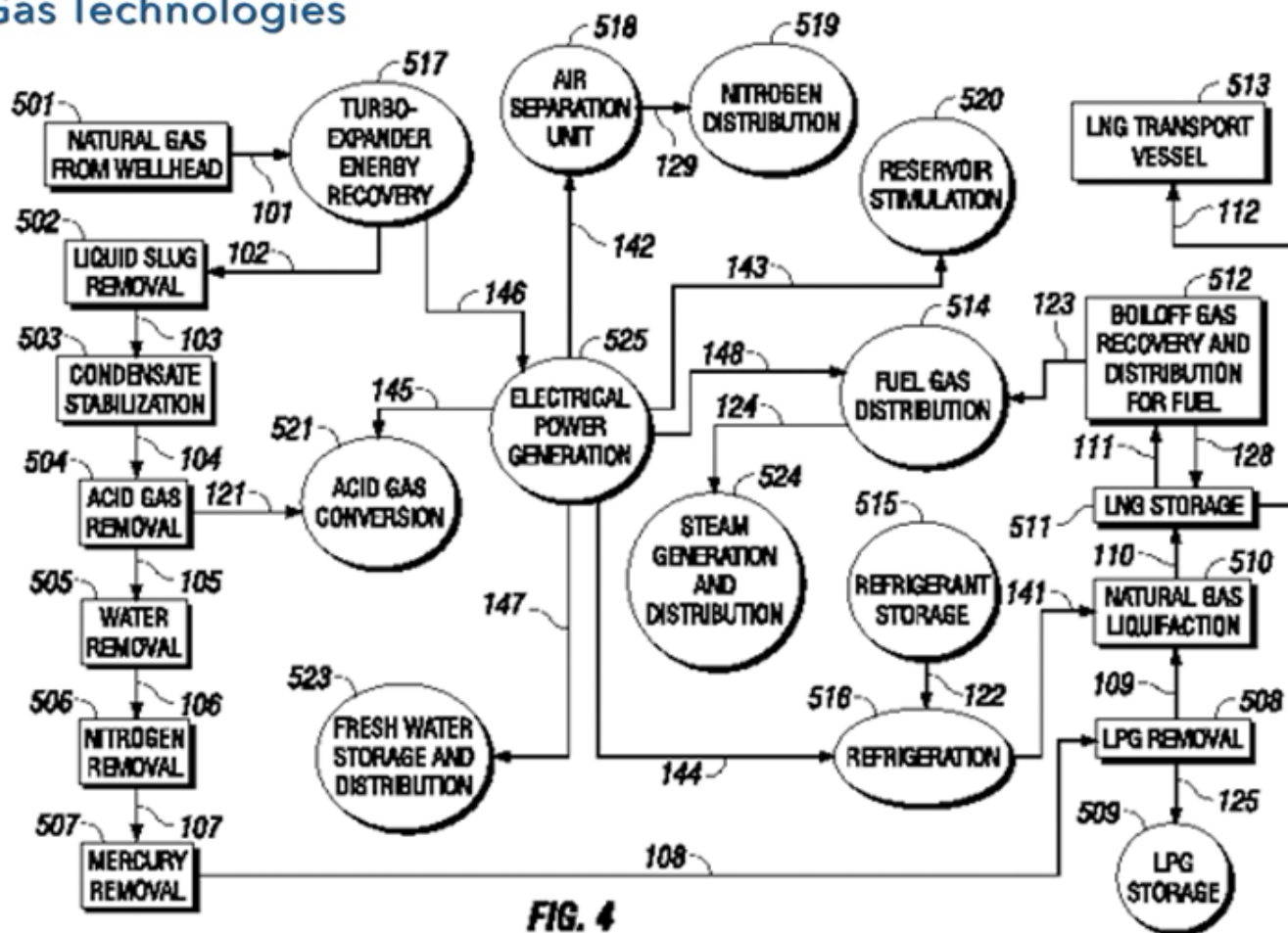
October 6, 2011



Gas Transport

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- Details Provided for Transportation and Separation of Mixtures
- Illustrates Several Concepts for Separate Transfer on the same Marine Vessel
- Identifies Economic Value of Separation of Existing Cryogenic Liquid Mixtures
- Great Synergy Between LNG and GTE



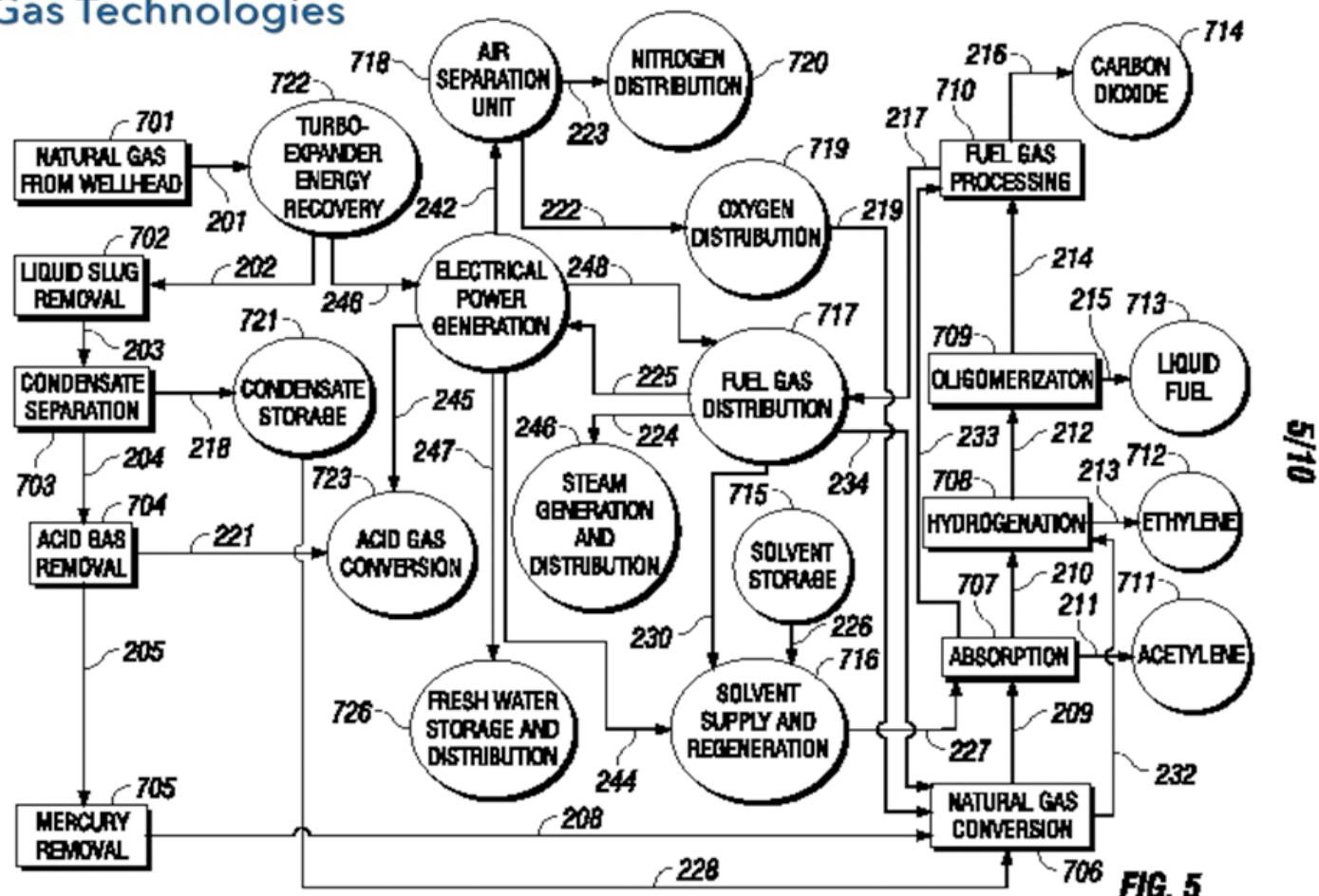
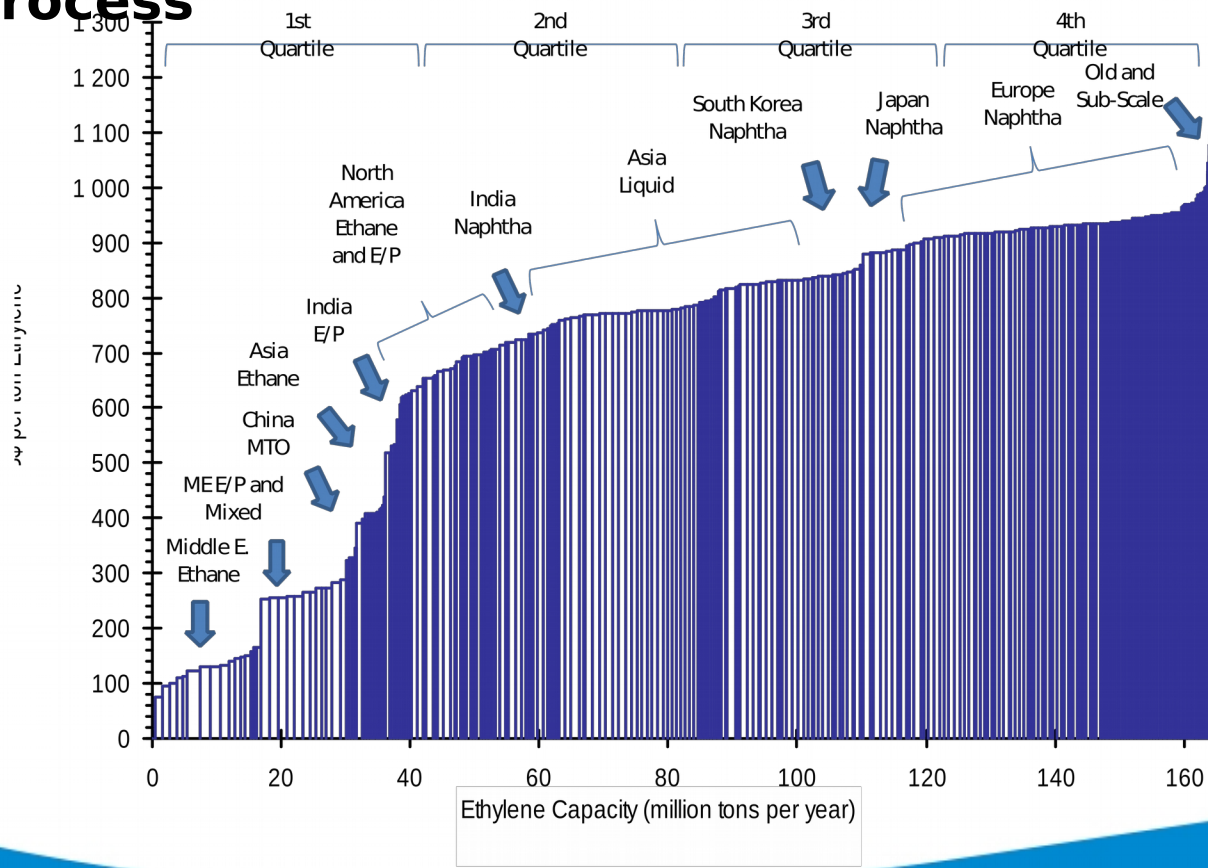


FIG. 5

Gas Transport of Ethylene Factors

- North America Gas Prices are Low
- US Cost to Manufacture Ethylene very low due to historically low ethane prices
- Many LNG plants are operating at capacity
- Older, Smaller LNG Ships available
- Ethylene Prices are Increasing outside of USA
- Naphtha Ethylene Plants are old and naphtha cost remains high – shutting down in US and Europe
- Ethane for ethane crackers not available in Europe and Asia keeping ethylene prices high. Europe and Asia account for 53% of global ethylene production.

Ethylene Cost to Produce vs Source and Process



Opportunities

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- Several locations in Africa and Middle East where ethylene production and LNG production are nearby
- Several locations in Asia, Western Europe and USA where LNG is received and ethylene is made and converted
- The cheapest ethylene is made in the Middle East and Most expensive is made in Europe