MECOWA
“CNG Virtual Pipeline” in Ghana
MIT Global Entrepreneurship Team 2016-2017

**Company**
- MECOWA is a family owned, diversified holding company that specializes in developing opportunities for socioeconomic growth within Ghana and other parts of Africa

**Business Problem**
- Ghana has limited energy accessibility; c.7.3 million people (i.e. 30%) do not have access
- Unreliability of energy supply, and gap between demand and supply at peak hours
- Electricity prices at unsustainable levels (e.g. 59% increase in Feb. ‘16)

**Solution**
- **Build a Compressed Natural Gas (CNG) Virtual Pipeline (VP) to provide gas to customers**
  - **Focus of the project:** secure constant gas, compressed at “mother station”, transport it to customers via truck fleet, decompress it at the client site

**Methodology**
- Help MECOWA assess the financial feasibility of a CNG virtual pipeline (VP) to serve industrial clients
- **Main deliverable:** comprehensive operating and financial model

**Results**
- Three main scenarios analyzed
  - **Scenario 1:** Tema
    - Capacity: 2,500 mscfd
    - NPV: $13.5M
    - Project IRR: 36.9%
    - Other Costs**: Gas Purchase Price: $0.7, Decompression: $1.1, Transportation: $1.5, Income Statement Margin: $10.0
  - **Scenario 2:** Kanshe
    - Capacity: 2,500 mscfd
    - NPV: $9.0M
    - Project IRR: 28.6%
    - Other Costs**: Gas Purchase Price: $0.7, Decompression: $0.2, Transportation: $1.5
  - **Scenario 3:** Kumasi
    - Capacity: 2,500 mscfd
    - NPV: $1.3M
    - Project IRR: 17.8%
    - Other Costs**: Gas Purchase Price: $0.7, Decompression: $0.2, Transportation: $1.5

  - **Incremental cost (IC) of CNG VP ($/mmbtu)**
    - Gas Purchase Price
    - Compr.: $10.0
    - Transp.: $1.1
    - Decomp.: $1.5
    - Other Costs**: $0.2
    - Income Statement Margin
    - Gas Sale Price
    - Margins ranging from 17.8% to 36.9%

- **Screenhots from the model built for MECOWA**

**Recommendations**
- MECOWA should pursue this financially feasible project following these recommendations
  1. Assure a high inlet pressure in the compression station (40-80 bars)
  2. Own transport fleet
  3. Serve clients closer than 130km
  4. Invest in decompression stations to ease adoption

**Team**
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