**Introduction and Background**

- The objective to advance the design, construction and commissioning of an integrated coal/biomass-to-liquids (CBTL) facility at a capacity of 1 bbl/day at UK-CAER.
- Purposely designed as modular, skid-mounted, anticipating frequent change-outs; “plug and play;” and future re-purposing.

**Process Overview**

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Gasification  Water-Gas Shift  Acid Gas Removal  Fischer-Tropsch
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**Gasification and Feed Preparation**

- **Opposed Multi-Burner Gasification**
  - Includes biomass/coal feed preparation tower
  - Entrained flow gasifier
    - Coal/water slurry
    - Oxygen blown
    - Molten slag
  - Dry coal consumption: 1 ton/day
  - Syngas production: 179 lbs/hr
  - H₂/CO molar ratio: ~0.75/1

**Acid Gas Removal**

- **WGS and F-T Module**
  - Gasification System installed and tested
  - Initial experimental data matched design specifications
  - Acid Gas plant installed and ready for testing
  - WGS and F-T module arrived at UK-CAER in December
  - Installation nearing completion
  - F-T Catalyst, coal and biomass have been sourced
  - Full system operation expected to occur in Summer/Fall 2017

**Project Status**

- Gasification System installed and tested
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**Acknowledgements:**
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**Small-scale Pilot Plant for the Gasification of Coal and Coal/Biomass Blends and Conversion of Derived Syngas to Liquid Fuels via Fischer-Tropsch Synthesis**

U.S. Department of Energy (DOE) - National Energy Technology Laboratory (NETL)

PI: Rodney Andrews