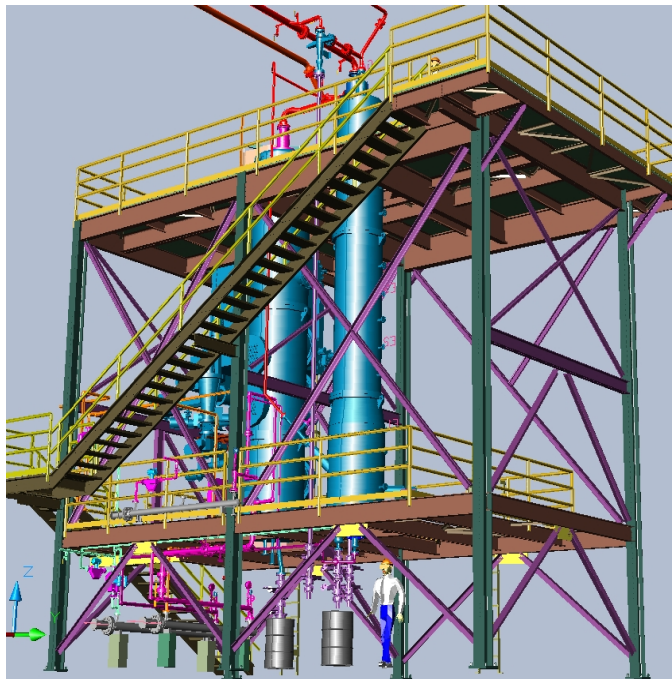


4 Ton/Day Process Demonstration Unit (PDU) for Biomass Gasification

IDEA provided project management, process engineering and procurement support services for a facility designed to demonstrate commercial viability for a novel biomass gasification technology coupled with syngas clean-up and Fischer-Tropsch gas-to-liquids conversion processes.

IDEA worked closely with the client to generate PFD's and P&IDs with appropriately sized equipment and piping systems along with the process control components needed to operate this high temperature process. Preliminary engineering deliverables including facility layouts, completed P&IDs, motor and instrument lists, data sheets for key equipment, project cost estimate(s), and project scheduling. 3D modeling of the entire system including reactors, cyclones, big sack lifters, biomass feeders, ancillary process equipment, steel support structure, and high temperature piping systems was also performed.

Value engineering work was also performed to align the facility's design and scope with the developer's budget. All of this work provided sufficient confidence for the client to secure funding.



After funding was obtained, **IDEA** assisted the client with the further specification, procurement and field construction of following:

- Unique, high temperature instrumentation
- Specialized fluid media electric heaters complete with medium voltage control systems
- The PDU's instrumentation and automation are integrated into a host-provided DCS that performs complete system control, data acquisition and collection
- A Fischer Tropsch reactor system complete with FT wax separation systems
- Process equipment and piping system that required special high temperature steels, and refractory lined carbon steel reactor vessels.

IDEA provided close coordination between the client's engineering team, equipment vendors, control panel fabricators and construction contractors. **IDEA** also provided construction phase services to monitor construction progress, answer questions on-site and assist in construction management with identification of contractors' deficiencies and compliance with design and construction documents.