A U.S. company develops energy technologies that are environmentally sustainable and provides their customers with the ability to use their energy sources in a more practical and cost-effective manner.

**Challenge**
The customer uses a low-temperature, low-pressure pyrolysis process that makes coal conversion more economically viable than other typical processes. The customer uses this process to convert coal and biomass into products that can be refined into more environmentally friendly products.

The system consists of two major components: a pyrolysis unit and a dryer unit. (Pyrolysis is a form of incineration that chemically decomposes organic materials by heat in the absence of oxygen.) They were looking for a variety of instrumentation to monitor the various steps in the process to ensure the system performs according to design.

**Solution**
On the pyrolysis unit, the customer is using the SITRANS LR560 radar level transmitter to monitor the level of coal sent through the process, a SITRANS DSIII pressure transmitter to monitor the pressure in the process, a SITRANS DSIII DP pressure transmitter to monitor the flow, a SITRANS LVS200 vibrator level switch to monitor the level of the coal in the hopper, and a SITRANS RD500 remote data manager to monitor 40+ thermocouple readings and the instruments listed above.

On the dryer unit, the customer is using a SITRANS DSIII pressure transmitter for monitoring pressure, and a SITRANS DSIII DP pressure transmitter unit to monitor the flow. A SITRANS RD200 remote display is being used to monitor the output signals from the above equipment.

The customer is also using a Siemens Industrial PC (SIMATIC IPC 627C) with WinCC software to visually monitor the operating processes, production flows and machines.

The initial system is considered the DEMO and/or R&D unit. The monitoring of the pressures, temperatures and flows are critical in the final determination of the system settings to produce the desired results in the final product.
Benefits

- **Cost Savings**: Siemens and the local Siemens representative worked closely with the customer to help them stay within their budget projections.

- **Time savings**: Once the method was proven, it was imperative that the customer build the demo unit expeditiously. The installation of the Siemens equipment saved time because the instruments are simple to install and quick to start up. No special training is required.

- **Improved process reliability**: By implementing the Siemens RD500 remote data manager, the customer is able to constantly monitor the readings and make necessary adjustments.

- **Easier to use**: Using the Siemens IPC 627C industrial PC with WinCC software, the customer is able to continuously monitor all readings from a central location.

- **Customer service provided**: Customer support and service provided by Siemens and Siemens local representative exceeded all expectations. In addition to product recommendations, technical support was provided both by phone and on site. This resulted in helping the customer achieve an accurate and efficient measurement and monitoring of the system and assist them in getting their system up and running in the required time frame.

**About the SITRANS LR560 Radar Level Transmitter**

The SITRANS LR560 transmitter includes an optional, graphical local display interface (LDI) that improves setup and operation using an intuitive Quick Start Wizard and echo profile display for diagnostic support. Startup is easy using the Quick Start wizard, with a few parameters required for basic operation. SITRANS LR560 measures virtually any solids material to a range of 100 m (328 ft).

**About the SITRANS DSIII Pressure Transmitters**

The SITRANS P DSIII series includes digital pressure transmitters for measuring gauge pressure, absolute pressure, differential pressure, flow and level.

Even the standard devices offer comprehensive diagnostics and simulation functions with high reliability. The suitability for use in SIL2 circuits has been certified by external test institutes.

With PROFIBUS transmitters, the new PROFISAFE technology guarantees uniform safety from the control system down to the transmitter.

**About the SITRANS LVS200 Level Switch**

The SITRANS LVS200 vibrating point level switch for high or low levels of bulk solids detects high, low or demand levels of dry bulk solids in bins, silos or hoppers.

The liquid/solid interface version can also detect settled solids within liquids or solids within confined spaces such as feed pipes. It is designed to ignore liquids in order to detect the interface between a solid and a liquid.

The LVS200 level switch has a compact design and can be top, side or angle mounted. The vibrating fork design ensures the tines are kept clean. The unique design of the fork and crystal assembly eliminates false high level readings even if tines become damaged.
About the SITRANS RD500 Remote Data Manager
The SITRANS RD500 remote data manager provides integrated web access, alarm event handling and data capture for instrumentation. It is an easy-to-use remote data manager, using a web-based application and hardware modules. The unique modular approach allows a variety of process signals to be monitored, while the serial ports allow data to be collected from any Modbus RTU device.

The RD500 unit's built-in web server, FTP and email client allows the process to be monitored remotely. Alarm notifications are communicated through email and SMS text messages to one or more recipients to ensure that appropriate actions are taken by personnel.

About the SITRANS RD200 Remote Digital Display
The RD200 remote display is used with level, flow, pressure, temperature, weighing, and other process instruments. Data can be remotely collected, logged and presented from as many as 100 displays on your local computer using the free downloadable RD Software.

The display accepts a single input of current, voltage, thermocouple, and RTD. This makes the RD200 unit an ideal fit for use with most field instruments. It can be set up as a standard panel mount, or combined with optional enclosures to allow it to house up to 6 displays.
The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.