RED-Rochester®

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RED-ROCHESTER BOILER CONVERSION PROJECT AT A GLANCE

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OVERVIEW

The boiler conversion project is being implemented to comply with the US EPA's Industrial Boiler Maximum Achievable Control Technology (BMACT) ruling to reduce hazardous air pollutants. RED-Rochester has commenced a ~$90M investment that will fully retire existing coal-fired operations in Eastman Business Park and replace it with new efficient, clean-burning natural gas fired boilers including converting one existing coal fired boiler to natural gas. Construction started in October 2016 and new facility is projected to be operational by January 2018 at which point:

- Eastman Business Park will be completely coal-free for the first time in over 100 years.
- Emissions of sulfur dioxide and heavy metals will be effectively eliminated
- CO2 emissions will fall by 50%.
- NOx and Particulate will be reduced by more than half
- Overall fuel efficiency will improve.
- The RED-Rochester steam plant will be fully modernized, setting the stage for another 100 years of success at Eastman Business Park.
- Efficiently using lower cost fuels will ensure competitively priced, reliable utility services.

PROJECT DESCRIPTION

The four new natural gas fired packaged boiler design will be housed in a new building adjacent to the existing boiler house. In addition to including modern operating controls, the new plant has been sized to meet the current energy needs of the park with room for growth. This design will improve the reliability of utility operations and reduce the energy use per unit of utility generation thereby providing economic and environmental value to Eastman Business Park customers. The new boilers will be installed and commissioned to ensure seamless reliability of utility services during construction and transition between systems.

ECONOMIC IMPACTS

RED-Rochester currently provides approximately 120 highly-skilled, full time jobs in Eastman Business Park. Moreover, RED-Rochester provides 16 mission-critical utility services to approximately 70 different customers within the Park that employ over 6,000 people that have an even broader impact on the greater Rochester economy.

By making this ~$90M investment, RED-Rochester is not only preserving existing jobs, but also providing approximately 70 equivalent full time construction jobs over the next 18 months. This project will be one of the single largest investments in physical infrastructure in the Eastman Business Park in over three decades.

ENVIRONMENTAL IMPACTS

The conversion from burning coal to natural gas will bring RED-Rochester's steam and electric generation assets into compliance with the mandatory EPA Industrial BMACT rules and will provide large reductions in air pollutants and greenhouse gas emissions. The following table illustrates a number of these important reductions.

Air Contaminant	*Reduction in Emission Rate from Coal to Natural Gas*
NOx	**>60%**
SO2	**>99%**
Total Particulate	**>80%**
Greenhouse Gases (CO2 Equivalents)	**>51%**
Ammonia and Acid Gases	**>99%**
Metals	**>62%**

The conversion project will virtually eliminate the fly ash and slag coal waste currently generated by the existing coal fired boilers. There is no solid waste when firing natural gas and only negligible fly ash waste when the ultra-low sulfur diesel oil (back-up fuel) is occasionally burned. Additionally, the truck and train transport of coal and coal waste will be eliminated. The loading of approximately 18 vehicles per day associated with the fly ash and slag management will be eliminated.

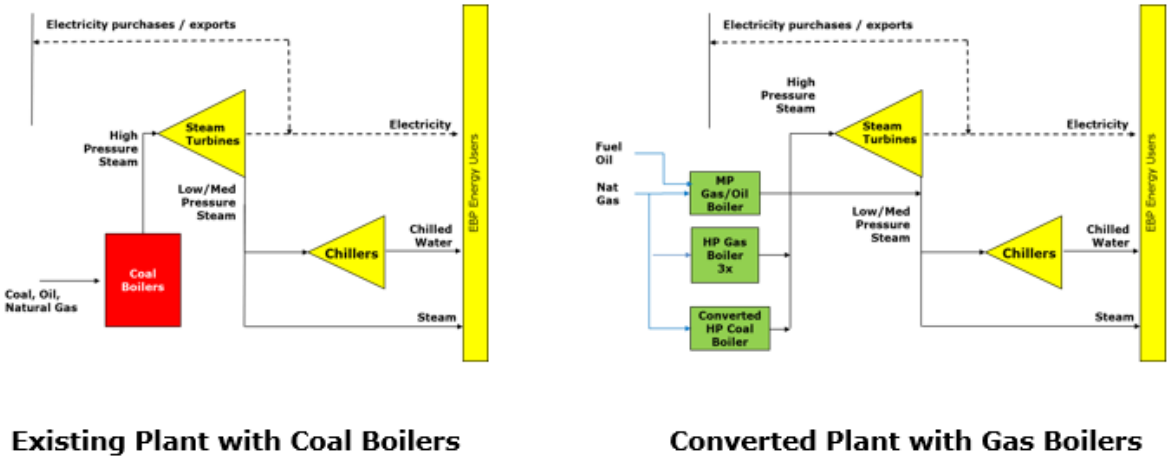
DESIGN BUILD DESCRIPTION

RED Rochester's strategy is to simultaneously meet the EPA regulations while fulfilling plant requirements to ensure seamless reliability and stable utility rates for our customers, which include:

1. Maintaining and enhancing reliability.
2. Maintaining and increasing efficiency.
3. Optimizing capital and operating costs.
4. Enabling future capacity.

These will be met by replacing coal with natural gas using three new high pressure gas fired boilers, one medium pressure natural gas fired boiler and converting one existing coal boiler to gas for back up. The

new medium pressure boiler can burn either of natural gas or oil which provides back-up flexibility. These new and converted assets will be integrated with the existing utility distribution system as shown in the figure below. This approach takes full advantage of the existing highly efficient utility distribution system, where steam supplied to Eastman Business Park is first used to generate electricity before being delivered to customers for space heating and other industrial processes. This "co-generation" of steam and electricity is also used to produce chilled water for Eastman Business Park customers.



Existing Plant with Coal Boilers **Converted Plant with Gas Boilers**

Reliability is enhanced by increasing the number of high pressure boilers (from three to four). Further, three of the high pressure boilers will be new and all will be fired by natural gas, which is inherently more reliable than coal due to the efficiency with which it can be delivered into the boiler, the absence of concerns associated with the moisture content of the coal, and the reduced wear and tear on the boilers. Efficiency and turndown capability is increased with an optimized steam cycle by scaling the size of the boilers to the current steam loads of our customers. Capital and operating costs are optimized by eliminating the high costs of coal delivery and handling and by working collaboratively with a highly experienced engineering and construction partner. Increasing the future capacity of the boiler house has been enabled by space considerations and sizing critical plant components for additional steam and electric generation equipment.

GAS SUPPLY OVERVIEW

RED Rochester's existing gas supply of ~625 Dth from Rochester Gas and Electric (RGE) is not sufficient to meet the needs of the new boilers. A new natural gas pipeline is needed to increase availability to ~1,800 Dth to meet current and future requirements. RED Rochester is contracting with RGE for a new 4.5 mile gas line to meet this need. The design of the new line is complete and detailed permitting plans are well underway. The route is shown in the graphic below. Construction of the new line will take place in the summer of 2017, with an estimated September 30, 2017 operation date. Full operation and testing of the new boiler house is paced by the completion of the new gas pipe line,

however testing and final acceptance of individual boilers can be met with the existing natural gas supply.