Case Study. Snam: Converting gas pneumatics to instrument air

Best Practice: Pneumatic equipment

The Issue

• Gas-driven pneumatic systems are used across the natural gas industries for process control, including pressure, temperature, liquid level, and flow rate regulation.
• All vent gas by design (high bleed, low bleed, intermittent, continuous)

The approach

• Instrument air systems substitute compressed air for the pressurized natural gas, eliminating methane emissions and providing additional safety benefits.
• Devices were replaced at many compressor and regulating & reducing stations to instrument air driven
• During 2014-15, Snam replaced ~450 high-bleed old positioners in its R&R stations with a low-emission model
• In new R&R stations, Snam installed boilers with electric control, used fewer regulating lines but of greater diameter, and installed electrically actuated control valves
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The Result

• 200,000 m³ gas saving per compressor station per year

• Across R&R plants, 4,000,000 m³ gas saving per year

• As a result of the pneumatic equipment replacement initiatives, the Snam pneumatic emission reduction from 2013 to 2018 was about 33%, ~6,000,000 m³ of natural gas saved per year.