

**32 Correct. The answer is true.** A plant with a heat rate of 8,000 requires 8,000 BTU of gas per kilowatt hour or 8,000,000 BTU/megawatt hour = 8 MMBTU/mWh. A Mcf of gas is about 1,000,000 BTU or one MMBTU. So gas prices increased about \$2 per MMBTU. Since you need eight MMBTU for another mWh of electricity, electricity prices should increase  $(\$2/\text{MMBTU}) \times (8 \text{ MMBTU/mWh}) = \$16$  per mWh. In practice, one Mcf of U.S. gas tends to have slightly more energy than assumed above. Let say the utility is buying gas with an energy content of 1,030 BTU/Mcf = 1.030 MMBTU/Mcf. If gas goes up \$2/Mcf then it increases  $(\$2/\text{Mcf}) / (1.03 \text{ MMBTU/Mcf}) = \$1.94$  per MMBTU. Since a mWh requires 8 MMBTU, the increase in cost =  $(\$1.94/\text{MMBTU}) \times (8 \text{ MMBTU/mWh}) = \$15.52/\text{mWh}$ .