

A brief from the Energy Security Studies Program

Gallon of Gas Equivalence: Ohio

Introduction

A GALLON OF GAS EQUIVALENT (GGE) is a standardized measure that expresses the cost of different energy sources in terms of the energy contained in one gallon of gasoline. By converting energy prices to a common basis, GGE enables meaningful comparisons across fuels with different units of measurement, such as natural gas, propane, and electricity. Rather than comparing the physical quantity of a fuel, GGE compares the amount of usable energy each fuel provides. Because most consumers are familiar with gasoline prices expressed in dollars per gallon, GGE also provides an intuitive point of reference for understanding energy costs. Presenting energy prices on a gasoline-equivalent basis helps consumers better evaluate and compare fuel options, making it easier to understand the relative cost of obtaining the same amount of energy from different sources.

Methodology

For this analysis, all fuels are converted to a common basis: the amount of energy contained in one gallon of gasoline. A gallon of gasoline contains approximately 121,300 kilojoules (kJ) of energy, which serves as the benchmark for comparison. By converting natural gas, propane, and electricity prices to a “gasoline-gallon equivalent” (GGE), we can compare fuels on an equal energy basis rather than by their native units of sale.

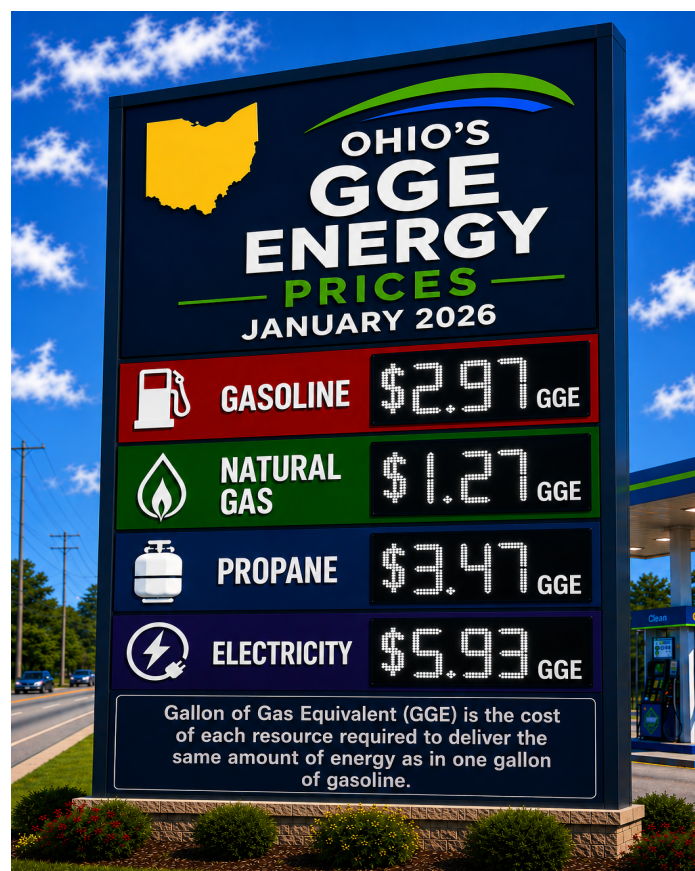


Figure 1: Ohio's GGE Energy Prices^{1,2,3,4}

Summary Point

As policymakers consider electrification strategies and natural gas restrictions, understanding energy price relationships is important for evaluating affordability and consumer choice. GGE comparisons measure fuel cost per unit of energy and

do not account for differences in end-use efficiency among appliances, heating systems, or vehicles.

Acknowledgements

We acknowledge the invaluable contributions of our research assistants: Wells Benjamin, Laura Kirk, Colin Kolb, Rebecca McAdam, Nick Rainwater, Anitesh Sandhu and Madison Skoog

References

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