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Energy Education: The Quantitative Voice

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A serious study of energy use and its consequences has to be quantitative. It makes little sense to push your favorite renewable energy source if it can't provide enough energy to make a dent in humankind's prodigious energy consumption. Conversely, it makes no sense to dismiss alternatives—solar in particular—that supply Earth with energy at some 10,000 times our human energy consumption rate. But being quantitative—especially with nonscience students or the general public—is a delicate business. This talk draws on the speaker's experience presenting energy issues to diverse audiences through single lectures, entire courses, and a textbook. The emphasis is on developing a quick, “back-of-the-envelope” approach to quantitative understanding of energy issues.