



BUREAU OF ECONOMIC GEOLOGY, OFFICE OF THE DIRECTOR

THE UNIVERSITY OF TEXAS AT AUSTIN

John A. & Katherine G. Jackson School of Geosciences • University Station, Box X • Austin, Texas 78713-8924
10100 Burnet Road, Bldg. 130 • Austin, Texas 78758-4445 • (512) 471-0209 • FAX (512) 471-0140

15 December 2014

Dr. Philip Campbell
Editor-in-Chief, *Nature*

Dear Dr. Campbell,

Nature, as one of the most respected and cited scientific journals in the world, has a responsibility to rise above the politics, avoid conflict-seeking journalism, and report objective, balanced, agenda-free science. We believe that the recent news feature titled “Natural Gas: The Fracking Fallacy” (Dec 3, 2014), which compares research results from the Bureau of Economic Geology (BEG) with the U.S. EIA 2014 Annual Energy Outlook, contains misrepresentative speculation and apparent bias based on the limited data presented. Energy—all energy—is an immensely important global topic and deserves more careful treatment.

We represent the team of BEG-based geoscientists, engineers, and economists who for nearly four years have conducted in-depth studies on the four major shale gas basins in the United States. The BEG is a 105-year-old research institution, 250-people strong, with an international reputation for objective, unbiased science. Our ongoing research on shale resources—which involves rigorous, quantified, integrated, data-rich analysis and modeling, and is published in top peer-reviewed journals and presented to large audiences at major international conferences—should be of high interest to *Nature* readers: <http://www.beg.utexas.edu/shale/>.

We highlight several issues that we find objectionable in the *Nature* feature.

1. The “Battle of the Forecasts: Big Four Sources” figure attributes a graph to UT that we did not create. We provided the author with results from our peer-reviewed, published Barnett and Fayetteville studies. However, the Haynesville manuscripts are still in peer review and the Marcellus work is ongoing. On occasion, we show preliminary results at professional meetings of work from these as yet unpublished basins, but always with the caveat that it is not to be re-created or shared. To attempt to re-create our work without permission is unacceptable.
2. Pitting the BEG against the EIA appears to be an effort to create “drama” instead of providing an objective and thorough scientific view. The numerous responses we have received since the release of the news feature substantiate our belief that *Nature* readers expect more. In our conversations with the author, we emphasized that we work collaboratively with the EIA and that we both consider future scenarios and perform sensitivity analyses to show how variations in input parameters affect production outlooks. The EIA result is, in fact, one possible outcome of our model. The author misleads readers by suggesting faults in the EIA results without providing discussion on the importance of input assumptions and output scenarios.

3. The article pivots on quotes from Dr. Tad Patzek. Tad and his student, whose work focuses on individual well-decline forecasting and represents early-stage input for each studied basin, are valuable members of our team. However, Tad has not participated in the majority of the work in each basin, including Geologic Analysis, Well and Play Recovery Analysis, Well Economics, or the Production Outlook Studies.
4. In summary, the feature includes no original scientific data or work, misrepresents the BEG study results, ignores the treatment of uncertainties and scenarios, and editorializes a very important global issue. These lapses are further compounded by *Nature*'s editorial pointing to the feature and making what we believe are unfounded, and seemingly biased, conclusions about the future of the U.S. natural gas supply.

With due respect, in our opinion, *Nature* is lacking in objective and balanced coverage of broad energy research. Just as in climate, biotech, medical, and physics, there is rigorous research being conducted in energy—all energy. We question why *Nature* would not ask the BEG team, rather than a freelance writer, for a manuscript discussing our work. When our Marcellus work is completed, we offer to provide a scientific report of the kind that *Nature* readers have come to expect. We will use peer-reviewed results and explain assumptions, methodology, uncertainties, range of potential outcomes and scenarios, and risks to the outlook before addressing implications. We already work closely with the EIA and will include a rigorous discussion to explain differences in assumptions and results.

We ask that you run this letter in *Nature* or provide us the opportunity to write a guest editorial clarifying some of the more critical issues.

Regards,

A handwritten signature in black ink, appearing to read "Scott W. Tinker". The signature is fluid and cursive, with a large, stylized initial "S" and "T".

Dr. Scott W. Tinker and Dr. Svetlana Ikonnikova
Co-PI's on behalf of the BEG Reserves and Production Forecasting Group

Tinker is the director of the Bureau of Economic Geology and a professor holding the Allday Endowed Chair of Subsurface Geology in the Jackson School of Geosciences. Ikonnikova is an energy economist at the Bureau of Economic Geology.