

Predictions of Coal, CO2 Production Flawed, Says Latest Research

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(PhysOrg.com) -- The CO2 emission estimates used for government policy decisions assume unlimited coal and fossil fuel production for the next 100 years, an unrealistic premise which skews climate change models and proposed solutions, according to new research published by Tad Patzek, chair of the Petroleum and Geosystems Engineering Department at The University of Texas at Austin.

Based on widely accepted studies predicting coal production will peak and decline after 2011, Patzek warns climate change predictions should be revised to account for this inevitable peak and decline. His research appears in the internationally peer-reviewed journal, [Energy, The International Journal](#).

"Governments worldwide are basing their [policy decisions](#) on the uninterrupted increase of coal and oil production worldwide," says Patzek. "These policy decisions will be inherently in error, and will lead to expensive and false technological solutions."

Under the 40 different U.S. Intergovernmental Panel on [Climate Change](#) (IPCC) scenarios, Patzek found 36 of the 40 scenarios predicted future carbon production and CO2 emissions at today's rate of coal production. Credible forecasts of coal production, by contrast, predict a 50 percent reduction over the next 50 years.

"Most of the IPCC scenario writers accepted the common myth of 200-400 years of coal supply, and now their 'eternal' (100 years plus)

growth of carbon dioxide emissions in turn is a part of the commonly accepted social myth," says Patzek. "It seems, therefore, that the present attempt to inject some geophysics into the debate will be an uphill battle."

Patzek evaluated the accuracy of each of the 40 IPCC scenarios based on diminishing coal and fossil fuel resources. His full report was published in the August issue of *Energy*, The International Journal with co-author, Dr. Gregory Croft, who was Patzek's last Ph.D. student at the Department of Civil and Environmental Engineering at the University of California, Berkeley.

"The IPCC carbon estimates, which are used by all major decision makers, are based on economic and policy considerations that appear to be unconstrained by geophysics," says Patzek. "The value of our approach is that it provides a reality check on the magnitude of carbon emissions."

The paper provides a physical model of historical and future production of coal worldwide. The model demonstrates that despite enormous coal deposits globally, coal production rates will decline because the deposits show increasing inaccessibility and decreasing coal seam thickness, according to the research.

"The current global hysteria around carbon capture and sequestration is leading to desperately poor government policies," says Patzek. "For instance, large-scale subsurface sequestration of CO₂ will decrease power plant efficiency by up to 50 percent. The same resources could be spent more wisely on increasing U.S. coal-fired power plant efficiency by 50 percent from the current 32 percent."

Provided by University of Texas at Austin

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