

Dear, Mr. Daniel Kirk-Davidoff

Recently your research from 2007, On the Climate Impact of Surface Roughness Anomalies, was sighted by opponents to a 87 turbine wind farm located in Stark County, North Dakota. In your professional opinion would changes in the local climate caused by surface roughness anomalies created by this wind farm have negative effects on the crops grown around the proposed wind farm. Also would this proposed wind farm bring more large scale thunderstorms and hail into the area. There has caused much controversy in our community and your honest and professional opinion on the matter would be much appreciated. As farmers and ranchers ourselves this subject hits close to home.

Sincerely,

Chet and Ruth Steier

Dear Chet & Ruth,

Oh goodness, I'm sorry to hear that. No, that's a misinterpretation of my paper. If you look at it, you'll see that in order to get the effects I was looking at, I had to assume a really huge wind farm- completely covering the central plains. And the effects still weren't very big- patterns of warming and cooling of about a degree. (Just to be clear- warming the whole planet by a degree is a big deal, because of the way the climate system works- a one degree average warming means a little warming over the vast tropical oceans, but a larger warming over the higher latitude land areas where we live - also a global average warming goes along with sea level rise, changes in rainfall, etc. On the other hand a pattern of a few spots of warming and cooling of about a degree strikes me as unlikely to cause anyone much trouble). We saw no significant response in precipitation of any form.

The literature on the climate impacts of real wind farms is pretty clear - you can expect about 1 deg F of nighttime warming in the region among the wind turbines themselves, with the effect dropping off rapidly (I mean within a half mile or so) as you leave the turbines. I'm attaching a couple of recent papers, one based on satellite measurement of surface temperature and one based on a detailed weather forecasting model that show this.

If you think the folks citing my paper are willing to listen, you're welcome to forward this to them.

Best regards,
Dan Kirk-Davidoff

Daniel Kirk-Davidoff
Adjunct Associate Professor of Atmospheric and Oceanic Science
University of Maryland
College Park, MD 20742
<http://www.atmos.umd.edu/~dankd>

65 PU-16-42 Filed: 6/7/2016 Pages: 1
Exhibit P1 - Letter from Dr. Davidoff to Chet Steier

Chet Steier

