From: Judy Haggard
To: Planning Clerk
Subject: TerraGen Wind Project
Date: Thursday, November 21, 2019 12:35:28 PM

Sirs/Ms:

I sent an email to the Planning Clerk on 14 November 2019 commenting on the TerraGen Wind Project. I would like to restate my comments with corrections:

14 November 2019

Planning Commissioners:

I am in the camp of those who say that the climate crisis is real and mostly human-generated and am a proponent of alternative energy solutions to this problem. That said, however, I have real concerns about the TerraGen wind project. Other commenters have addressed many of these concerns, so I will not bring them up here. I do, however, have two points that I would like the Planning Commission to consider:

First, wind turbine technology has been rapidly improving over the years. If wind turbines were devised in the future **to prevent mortalities or reduce** the mortality rates of birds, bats, and other wildlife, would TerraGen retrofit the wind turbines proposed in this project with these new technologies (designs) as they become available?

Secondly, one group of wildlife that will be impacted and that has not been addressed in the DEIR and FEIR is insect species. Studies have shown the impact that insect strikes have on wind turbines, but I could find only one study online that has been conducted on the potential impact wind turbines have on insect populations. That study done by the German Aerospace Center (DLR) (26 March 2019) was a model calculation of the interactions of flying insects and wind farms in Germany. The study stated that approximately 1200 billion flying insects (an underestimate) are struck each year as they fly through the rotors of German wind farms. However, they could not say exactly how much of an impact this is on insect populations because they don't know how big the total population is or the amount of insect reduction in hard numbers, and cannot compare their numbers to other impacts such as climate change.

Although the impacts on insect populations are essentially unquantified **and at this point cannot be mitigated for**, there has been no acknowledgment by TerraGen that this problem to local and migrating insect populations potentially exists. Insect populations worldwide are collapsing, so I think that this is an important subject to at least mention in the EIR.

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Thank you.

Judy Haggard