**Review Responses #1: Characterizing Fusion Market Entry via an Agent-based Power Plant Fleet Model**

Lucas Spangher1

Scott Vitter1

Ryan Umstattd

*1: co-first authors*

**Reviewer #1: The authors should be commended on a very interesting and well presented paper.  
  
I have some recommendations for improvement.  
  
Regarding the limitations, I would prefer the model to include costs which I think can be done relatively easily (although I agree endogenous power plant economics (competition) would be a different model not using predefined diffusion curves).**

Thank you for the suggestion and thank you for your comments and review.

The point you make here is an important point for us to clarify so as not to confuse readers. Although you correctly noted that our model does not explicitly include price as an exogenous input or endogenous dynamic, we claim that our model *does indeed* include price, albeit implicitly. Our model is tied to projections of power plant fleet make-up detailed in the US Energy Administration’s (EIA) Annual Energy Outlook (AEO). In writing this response, we have confirmed that the AEO contains a price model. To make our own additional cost considerations would duplicate the effort and introduce uncertainty – and to produce a more accurate price model is well beyond the scope of this work, Therefore, our model’s growth in the power plant fleet and the makeup of the fleet is dependent on a price model to the extent that we are able.

We have added the following to the text:

*“Although price does not explicitly drive choices in the model, it is implied through the relationship to the AEO. As the AEO is built on a price model, the same price assumptions that the EIA makes about the future energy supply are expressed in our model. Indeed, one might see the 10%, 50%, and 99% maximum penetrations as a proxy for how cost competitive fusion technology will be.”*

**Also, validation is limited and some other means of validation would have been helpful, e.g. expert opinion, which could consider the effect of other limitations such as the yearly tick.**

Ryan/Scott to answer.   
  
**There is some presentational issue at the end of the paper with Figure 4 appearing after the end of the paper, and the references after the appendix and not beneath the references heading. Some of the references to figures appear to be wrong and should be re-checked.**

Thank you for catching these mistakes. We have rectified them in the final text.   
  
**Model scenarios for market are described as 10, 50, 90 earlier in the text, and then as 10, 50, 99.  Please rectify to consistent rates.**

Thank you for catching this error. 90% was never a parameter that we ran the model with; it was a typo. We have fixed the error in the text.  **The paragraph in the introduction starting :  Recently, the U.S. Department of Energy's Advanced    
should be removed and a short, appropriate acknowledgement should be added.**

Thank you for catching this conflict of interest. We have removed the paragraph and added a section in the acknowledgements.