----------------------- REVIEW 1 ---------------------  
- The optimization formulation is not very clearly described. It would be nice to see min f subject to g

Action: fix this as pass through the paper if it will improve the readability. We already say in two different places (beginning of section and caption of Figure 3) that we are minimizing totalCost, so addressing this is not necessary at all.

- It is unclear what is the complexity of the optimization problem.

No action. It’s a non-linear programming problem, and we have stated this in Section III-B.

- Some grammar errors like <the follow equation>

Done.

Action: make careful pass through the paper before submission.  
  
----------------------- REVIEW 2 ---------------------  
  
My biggest issue with the paper is in terms of its fit for the conference; it is more of an operations research paper and barely has any computing aspects except for the mention of the word data center.

No action.

The paper also has many grammatical typos e.g. section II A 4th paragraph where "quiet" should be replaced by"quite" (there are many more that need to be fixed).

Done.

Action: make careful pass through the paper before submission.  
  
----------------------- REVIEW 3 ---------------------

- The case study in Section II to motivate the impact of data center and wind farm placement on the grid was an excellent idea. However, there are many details that are unclear in this section. **It seemed like the authors chose to do a very small set of case studies (one particular placement choice of co-located datacenter and WF and one particular choice of separately located DC and WF) and tried to generalize the findings**. Even more problematic is that Section II lacks many important details and does not offer the reader any understanding of why the observed behavior was seen. Here are some examples: (i) why the difference between cases 2 and 3 in Tables III and IV?

Action: Thu – I don’t think the detailed information about what happens in the simulation is needed here. It doesn’t give any real information anyways. Probably, we need to make it clearer that how the system behaves depend on the power flow in the entire system, and this flow is affected by the placement of all generation and consumption within the network.

(ii) Was the installed WF not equipped with some energy storage to help absorb energy during periods of high winds - might that be the reason for the WF contributing to instability?

Here we are focusing on the impact of the instability of wind generation to the grid, and thus we didn’t consider energy storage equipped for the WF. We have cleared that in Section II-B now.

Action: Thu – say that there is no energy storage, and make the point Divya gives in her comment.

(iii) Were the WF located with the datacenter and away from it assumed to have the same characteristics?

Action: clarify that we are considering the same wind farm in all cases in Section II.

(iv) What was the temporal!  
 nature of the power demand of the datacenter - many datacenters are well-known to exhibit significant time variations in their demands.

No action. We already state in Section III-C that the datacenter is assumed to be at max consumption all the time.

(v) why exactly are transmission losses higher for the case of co-located DC and WF - it seems quite non-intuitive especially if there is energy storage facility and must be explained,

We assumed that there is no energy storage facility equipped for the datacenter and wind farms in this scenario. The transmission losses is determined by the power flow process of the whole grid system. Co-location might results in higher losses than non-co-location placement choices, which has been illustrated by case studies in Section II.

(vi) does Fig. 2 only report averages? is it reasonable to draw conclusions without looking at statistical variations as well? E.g., if you were to plot CIs, would there still be a difference in the system losses across your cases?

No action. The reviewer is not understanding this data correctly.  
  
- The optimization framework in Section III could be made more clear by: (i) stating explicity the objective and the constraints (currently the constraints are just lised in text as item (4) and the objective is not spelled out - I am guessing it s the quantity called totalCost) and (ii) describing more clearly what aspects have been simplified.

No action. There is no space to add all the constraints as equations.

- Some other concerns with the optimization framework: (i) Why were four different placement approaches chosen? In fact, you state that the problem size is small enough that you can find the optimal via exhaustive search. Why then even consider these sub-optimal heuristics?

Action: clarify (if necessary) that we are trying to show that it is important to consider things together.

(ii) how exactly are transmission losses corresponding to a particular placement choice modeled/derived - from your simulation described in Section II?

Action: clarify (if necessary) that we use the simulation in Section II to compute transmission loss for each scenario.

(iii) how significant is the impact of your more sophisticated transmission loss modeling over fixed loss assumed in some prior work (since this is claimed as a key novel contribution in Section I)?

Action: add discussion on what might happen if assumed fixed cost.

(iii) might your placement decisions themselves not affect the utility prices that make up dcOPEX? Is it reasonable to assume there is no such effect (as you appear to do)?

No action. Discussion of this is beyond the scope of the paper.

(iv) again, are the differences in costs in Table VIII statistically significant? How reasonable is it to draw general inferences based on what appears to be one specific set of sample paths?!  
Action: the differences are indeed small. Be careful on how strongly we state the conclusions.

  (v) it appears that you assume the datacenter to be a fixed load. It would help to explain your datacenter workload model more clearly and what real-world data (if any) you use in your evaluation for this aspect.

No action. Valid comment but there is no way to address.

Minor typos:  
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- p.2: powder -> power  
- p.2: quiet -> quite  
- p.2: damaged -> damage  
Done.

Action: make careful pass through the paper before submission.  
  
  
----------------------- REVIEW 4 ---------------------  
The problem is motivated well, and the presentation of the paper is acceptable. Relevant studies have been cited. The authors do make their point. However, the applicability of   
the proposed approach to scenarios considerably different from the case study is questionable and largely left to future work. The practical utility of the work is similarly debatable.

Action: make it clear that we are simply making the point that grid behavior should be considered.

We have proposed a general framework for placement of datacenters and wind farms in an area of grid system. Our framework can be easily extended to account for other placement scenarios involving multiple datacenters and multiple wind farms, but the more challenging problem solution is left for future work. The practical utility of this work is that by incorporating the consideration of grid system cost, strategic placement can help save tens of million dollars per year for building new datacenters together with renewable sources, which provides important instructions in the capacity planning stage.

We have made explanations accordingly in Section V.