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Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2014_BJAST_14253
Title of the Manuscript:	Mitigating the Effects of Climate Change with Wind Energy and GIS
Type of the Article	Review Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline>)



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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	The manuscript is very interesting, the language used is understandable, the narration is straightforward and up to point of the issue, and the topic is examined in a systematically holistic manner. Nevertheless, the existing spectrum of references used is narrow, thus the authors are highly encouraged to make an extra literature search in order to enhance their references' section with up-to-date studies (within the last decade of publication). In particular, a review paper of such a topic should include at least 40 references. Therefore, the authors are suggested to reinforce the existing satisfactorily-structured paper with extra references, especially in the parts of the text where there is (are) only one (or two) reference(s) cited. In the text context you stated that..... <i>Numerous papers and other works have been published in which GIS is applied to clean energy research.....</i> thus the reader of this review paper anticipate to read some of them and the authors are encouraged to denote them, accordingly. I agree with the authors' statement that wind energy utilization is proven argumentative to local but beneficial to the global level of analysis. Nevertheless, the common (global) good should be prioritized over the locals' opposition and disputes. In parallel –at the end of the section entitled: “3. Geographic Information Systems”– the authors should present and succinctly discuss upon a Table that will contain a collective list of the dominant features for optimum selection and installation of wind turbines, using the GIS specifications. In case that there exists numerical/quantitative information upon the aforementioned information, it is suggested to be also included, accordingly.	We sincerely appreciate the comments of this reviewer regarding the interest, language, and approach of our paper. We have taken the advice of the reviewer and substantially increased the number of references to GIS and clean energy research including a citation from G. Kyriakopoulos, who is an expert in the field. Additionally, we have presented and discussed tables relevant to the case studies based on the GIS specifications as suggested.
<u>Minor</u> REVISION comments	In case that the authors insist on presenting their study as review paper, the most appropriate categorization of their work is a “literature review” or “overview” (no critical review).	



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Optional/General comments	The text range for this review paper should be doubled, comparing to its current content. Indicative studies that are addressing the issues of wind farms and the NREL initiatives, as well as the manipulation of open source databases in environment-based schemes, are presented in the following papers: 1. Kyriakopoulos G. (2011). "Power as resource – Power as discourse: An overview evaluation of the key-factors of "wind farms" and "riparian rights" as sources of power". Engineering, Vol.3, No.1, pp. 63–72. doi:10.4236/eng.2011.31008. 2. Kolovos K., Kyriakopoulos G., Chalikias M. (2011). "Co-evaluation of basic woodfuel types used as alternative heating sources to existing energy network". Journal of Environmental Protection and Ecology-JEPE, Vol.12, No.2, pp. 733–742. 3. Kyriakopoulos G. (2010). "European and international policy interventions of implementing the use of woodfuels in bioenergy sector. A trend analysis and a specific woodfuels' energy application". International Journal of Knowledge and Learning, Vol.6, No.1, pp. 43–54. doi: 10.1504/IJKL.2010.034482. 4. Chalikias M., Kyriakopoulos G., Kolovos K. (2010). "Environmental sustainability and financial feasibility evaluation of woodfuel biomass used for a potential replacement of conventional space heating sources. Part I: A Greek Case Study". Operational Research: An International Journal, Vol.10, No.1, pp. 43–56. doi: 10.1007/s12351-009-0033-y. 5. Kyriakopoulos G., Kolovos K., Chalikias M.(2010). "Environmental sustainability and financial feasibility evaluation of woodfuel biomass used for a potential replacement of conventional space heating sources. Part II: A Combined Greek and the nearby Balkan Countries Case Study". Operational Research: An International Journal, Vol.10, No.1, pp. 57–69. doi: 10.1007/s12351-009-0034-x. 6. Kyriakopoulos G. (2009). "Biomass utilization for energy infrastructure and applications". International Journal of Social and Humanistic Computing, Vol.1, No.2, pp. 163–174. Inderscience publishers. doi: 10.1504/IJSHC.2009.031005. Besides, a personal research in the Scopus database –using the words: {"GIS", "wind", "energy"}– obtained the following results/references (most of them have been published within the last decade): Scopus EXPORT DATE:09 Oct 2014	
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	Grassi, S., Junghans, S., Raubal, M. Assessment of the wake effect on the energy production of onshore wind farms using GIS (2014) Applied Energy, . Article in Press. http://www.scopus.com/inward/record.url?eid=2-s2.0-84902938130&partnerID=40&md5=4676fc6bbd33f95defe8e06129f5f37f DOCUMENT TYPE: Article in Press SOURCE: Scopus Janjai, S., Masiri, I., Promsen, W., Pattarapanitchai, S., Pankaew, P., Laksanaboonsong, J., Bischoff-Gauss, I., Kalthoff, N. Evaluation of wind energy potential over Thailand by using an atmospheric mesoscale model and a GIS approach (2014) Journal of Wind Engineering and Industrial Aerodynamics, 129, pp. 1-10. Cited 1 time. http://www.scopus.com/inward/record.url?eid=2-s2.0-84897938158&partnerID=40&md5=cd2238e68d3d6e4878cee8bf967eed8 DOCUMENT TYPE: Article SOURCE: Scopus Richert, C.N., Matzarakis, A. GIS-analysis of the climatic wind energy potential in the region of Freiburg im Breisgau, based on observed data and Regional Climate Models [Analyse des windenergiepotenzials der region Freiburg im Breisgau auf der grundlage von messungen und klimasimulationen] (2012) Gefahrstoffe Reinhaltung der Luft, 72 (7-8), pp. 321-328. http://www.scopus.com/inward/record.url?eid=2-s2.0-84865488862&partnerID=40&md5=a321c70cd8f3741f34d244b4a2946388 DOCUMENT TYPE: Article SOURCE: Scopus Grassi, S., Chokani, N., Abhari, R.S. Large scale technical and economical assessment of wind energy potential with a GIS tool: Case study Iowa (2012) Energy Policy, 45, pp. 73-85. Cited 15 times. http://www.scopus.com/inward/record.url?eid=2-s2.0-84859748273&partnerID=40&md5=4f042f0ce54f2e4e41f2fb6ea3937a59 DOCUMENT TYPE: Article SOURCE: Scopus	
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	Meimorec, D., Knežević, S., Vorkapić, V., Škrlec, D. Wind energy and environmental protection: Using GIS to evaluate the compatibility of Croatian strategies (2011) 2011 8th International Conference on the European Energy Market, EEM 11, art. no. 5953113, pp. 764-772. http://www.scopus.com/inward/record.url?eid=2-s2.0-80052114234&partnerID=40&md5=589348ccf76d4986cbc122c549ee523b DOCUMENT TYPE: Conference Paper SOURCE: Scopus Sliz-Szkliniarz, B., Vogt, J. GIS-based approach for the evaluation of wind energy potential: A case study for the Kujawsko-Pomorskie Voivodeship (2011) Renewable and Sustainable Energy Reviews, 15 (3), pp. 1696-1707. Cited 22 times. http://www.scopus.com/inward/record.url?eid=2-s2.0-78651376396&partnerID=40&md5=5f26b85e39f26ae80d3e736f2595a556 DOCUMENT TYPE: Article SOURCE: Scopus Yagoub, M.M. GIS for wind energy: A case of UAE (2010) International Journal of Geoinformatics, 6 (3), pp. 13-21. Cited 1 time. http://www.scopus.com/inward/record.url?eid=2-s2.0-84857719872&partnerID=40&md5=d59d614c3a154485acd1ecbdce41d995 DOCUMENT TYPE: Article SOURCE: Scopus Aydin, N.Y., Kentel, E., Duzgun, S. GIS-based environmental assessment of wind energy systems for spatial planning: A case study from Western Turkey (2010) Renewable and Sustainable Energy Reviews, 14 (1), pp. 364-373. Cited 40 times. http://www.scopus.com/inward/record.url?eid=2-s2.0-70349489980&partnerID=40&md5=b74dcb82c82986923f91a838998feed6 DOCUMENT TYPE: Review SOURCE: Scopus	
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	Peters, J., Torkler, F., Hempp, S., Hauswirth, M. Is it possible to "calculate" the visual landscape? - GIS-based analysis of the visual landscape for the region "Uckermark - Barnim" as a base for the designation of areas suitable for wind generated energy [Ist das Landschaftsbild "berechenbar"? - Entwicklung einer GIS-gestützten Landschaftsbildanalyse für die region Uckermark-Barnim als Grundlage für die Ausweisung von Windeignungsgebieten] (2009) Naturschutz und Landschaftsplanung, 41 (1), pp. 15-20. Cited 2 times. http://www.scopus.com/inward/record.url?eid=2-s2.0-79954597849&partnerID=40&md5=797af66a4b6545c037e923cb2fc23c66 DOCUMENT TYPE: Article SOURCE: Scopus Xin, H., Liu, Y., Xin, J. Decision support system of site selection of utilization of the offshore wind energy based on GIS (2009) Proceedings - International Conference on Management and Service Science, MASS 2009, art. no. 5303954, . http://www.scopus.com/inward/record.url?eid=2-s2.0-73849114237&partnerID=40&md5=014da0039c9290247905b729f2799c08 DOCUMENT TYPE: Conference Paper SOURCE: Scopus Gao, Y., Wang, Y., Qiu, X., Chen, Z., Chen, Y., Ma, L., Miao, Q., Wang, Z. Simulation study on wind energy resource over the rugged terrains based on GIS (2008) Taiyangneng Xuebao/Acta Energiæ Solaris Sinica, 29 (2), pp. 163-169. Cited 5 times. http://www.scopus.com/inward/record.url?eid=2-s2.0-41349105709&partnerID=40&md5=10a45d8cc107dd000af83b776686ee45 DOCUMENT TYPE: Article SOURCE: Scopus Yue, C.-D., Chao, T.-Y. A GIS-based decision support system for facilitating the investment on exploiting local wind energy sources (2007) WIT Transactions on Ecology and the Environment, 105, pp. 407-416. http://www.scopus.com/inward/record.url?eid=2-s2.0-38849159092&partnerID=40&md5=76c70161778368f9c2316ad60b35ed34	
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	DOCUMENT TYPE: Conference Paper SOURCE: Scopus Kuzevičová, Ž., Kozáková, L., Kuzevič, Š. Choice of locations for wind energy utilization with GIS tools [Výber lokalít pre veterné zariadenia nástrojmi GIS] (2007) Acta Montanistica Slovaca, 12 (3), pp. 431-436. Cited 2 times. http://www.scopus.com/inward/record.url?eid=2-s2.0-34547271842&partnerID=40&md5=6b1cc458640c0ffa5cfd13763dfea199 DOCUMENT TYPE: Review SOURCE: Scopus Ramachandra, T.V., Shruthi, B.V. Wind energy potential mapping in Karnataka, India, using GIS (2005) Energy Conversion and Management, 46 (9-10), pp. 1561-1578. Cited 28 times. http://www.scopus.com/inward/record.url?eid=2-s2.0-15744380765&partnerID=40&md5=e31c0a52b4a8c1804e326f0cf2515a78 DOCUMENT TYPE: Article SOURCE: Scopus Middelmann, W., Weise, K. Exploration of wind energy potential in Thuringia with GIS and remote sensing [Erschliessung des Windenergie-potentials Thuringens mit GIS und Fernerkundung] (1999) Geo-Information-Systeme, 12 (5), pp. 23-27. http://www.scopus.com/inward/record.url?eid=2-s2.0-0033394107&partnerID=40&md5=88ec5deeebe9c199375845d6bea21967 DOCUMENT TYPE: Article SOURCE: Scopus Simmons, D., Hill, J. Farming the winds: mapping renewable energy resources with GIS (1995) GIS Europe, 4 (10), pp. 30-32. http://www.scopus.com/inward/record.url?eid=2-s2.0-0029412579&partnerID=40&md5=3b756d4d97d1bdbfb69ca1ade7a2beb0 SOURCE: Scopus	
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