



SDI Review Form 1.6

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2013_BJAST_6853
Title of the Manuscript:	Potential and feasibility of solid municipal waste treatment with gasifiers in a developing country: a review for Burkina Faso
Type of the Article	Review

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.

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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)
Compulsory REVISION comments	This is a prospective study that analyzed the factors associated with social requirement of Potential and feasibility of solid municipal waste treatment with gasifiers in a developing country related to Burkina Fasos. The arguments constructed for introduction requires more updated articles to be included. As their for gasifiers facilities cannot simply be transposed in developing countries because of either Gasifier's performances depend of the fuel used. In the case of municipal waste, or, composition is very different, and, capacity, these are not suited for small scale testing, and, Gasifiers available on the international market are highly sophisticated equipments; these are too expensive and not convenient for developed countries contexts. The authors performed insightful conclusions and managed with limited effort to described his or her future research plans. But unfortunately it is not clear in some areas where the research described in this article will lead and what the next step will be. I suggest little effort can progress it positive towards proper output. So use the results to strength the output of the work and use the graphs to support the argument. The Methodology in line 90 requires further clarification of the methodology to select the sampling and method of sampling that has been used. That all is in general. In line 115 for the Table 1. Waste management data of the five largest cities in Burkina Faso, that present the population of the sampling which still the author not shows	But unfortunately ... what next step will be. We agree. <u>We have reported our laboratory experiment on gasification work in progress.</u> Lines change has been made in the conclusion. Methodology Data used come from the results of a census. We didn't make field sampling. In line 114 (old line 112) we wrote: Populations' figures are from the 2006 general census [6].



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	the consistently sampling methodology. For the line 193 Figure 2. Averages components of municipal waste in Burkina Faso is not a good representation of the % of composition so please make it as %. Regarding the line 206 for 3.2 A bit of history on gasifiers: this should be moved either to introduction or literature review as any researcher in the field would be able to find her/his way towards the specification and the history. In line 228 3.3 Energetic bill of Burkina Faso is a good information but writer should ask why this section and what is the benefit. So I guess dilution of the write up is compulsory. As for line 254 3.4. Technical context of waste gasification in Burkina Faso: this is one of the best section in this paper and suggest if is possible to write little more of elaboration on the table (5) Table 5. Combustible feedstock and reachable power by municipal waste gasification in Burkina Faso in line (290) 3.4 Proposal for gasification technology aimed at household waste management This part of the research work is excellent to be considered	There are footnote (a), (b) and (c) with table 1. No change will be made. For line 195 (Old line 193) We agree, changes have been made it now reads: Figure 2. Municipal waste composition in Burkina Faso Regarding the line 208 (old line 206). From the 3 reviewers: KI_MI requested deletion of this section, MA_MI (you) request moving this section to Introduction or Literature review, ZF_SMA says nothing. Because Introduction already span over 1 page (one reviewer complain about that), it seems better to delete section 3.2. <i>Line 73 introducing section 3.2 will consequently be changed to: a review of energy consumption in Burkina Faso.</i> We agree. We have changed line 252 (old line 250) as follow: This is not a sustainable energy... Section 3.3 Technical context... Reviewer KI_MI, requested that this section be shortened. But you (reviewer MA_MI) suggested little more writing. Reviewer ZF_SMA said nothing about. We added the following text at line 298 (old line 296): Electrical output is calculated with 30% conversion efficiency. No other changes will be made to this section. We agree with you. So the following paragraph was added at the end of this section from lines 291 to 297: At our side, laboratory work is already in
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	as the major output of the paper. I reckon this could have more two lines or one more paragraph of discussion with mingle of literature review would make extra bonus of the work.	progress. We are now carrying out laboratory experiments for wood, cardboard and plastic's gasification at temperatures of 700 to 1100°C with a 100°C step. At first, these essential municipal waste components are studied alone and at the second step, we will mix these according to municipal waste proportions. Work in progress aim to simulate municipal waste gasification and serve as a starting point for laboratory scale gasifiers construction, testing and adaptation with firstly model waste and afterward real municipal waste as feedstock. In order to satisfy all reviewers, we only added the following sentence at lines 305-307: Nowadays; gasification is a rapidly spreading technology in USA, Europe, Australia and India [26-32]
<u>Minor</u> REVISION comments	Mathematical calculation of the Figure 4. Electric energy production and importation in Burkina Faso from 2005 to 2009 to find out Total produced and imported is 72 and the same applies to the other part of the graph No comments on conclusion	Mathematical calculation. We didn't want decimal value on figure 4, so values are rounded. Suppose 14.2, 47.2 and 11.2, rounded, these give 14, 47 and 11, but their sum is 72.6 which is rounded to 73. No change will be made.
<u>Optional/General</u> comments	Recommendations for further study is missing and accordingly it is ideal to add small paragraph to combine it with conclusion. Then little information is required with special idea about the sampling.	We agree. Conclusion have been altered and now end with the following sentence: Under this scope, demonstrations plants at small scale should be quickly setup in the five largest cities of Burkina Faso for further study, field testing and adaptation to the country's context.