

knowledge regarding this matter drives these respondents into thinking that the utilization of biogas is something that might not benefit them that much since they are not aware of the advantages of biogas [20].

In a study done in Nigeria, 48% of the respondents were aware of biogas. Less than 50% of them were willing to adopt biogas as an alternative cooking fuel in replace of charcoal. This proves that having knowledge about the issue does influence the perception or the acceptance towards this idea. This is the same for habit where the respondents that have better habits in handling food waste at their homes have a more positive perception too. Since they have already practiced separating food waste at home, they would not mind having to do it for the purpose of biogas production in the future.

4. CONCLUSION

Energy security is one of the major concerns during development. The energy demand is predicted to increase by 4.7% annually where the electricity consumption having an annual growth rate of 8.1%. It's indicated that demand for energy especially biogas is increasing.

The study shows that most of the public have a positive perception regarding the idea of converting food waste generated into biogas. There is also no significant difference in the perceptions of the respondents according to their age, income and education level. The correlation tests done shows that there are positive relationships between the perception of the respondents with their habit and knowledge.

Generally, the lack of knowledge is becoming a constraint for the public to accept this renewable energy source if we were to adopt it in the future. The public needs more enlightenment regarding biogas so that they are made aware of the environmentally friendly alternatives that are much more cost effective than fossil fuels at the same time. The school, media, family and friends play a major role in information dissemination and these channels can be used to ensure environmental issues are known to the general public.

The production of biogas from food waste sources could only be done if there are cooperation and participation from all parties including the government, private sectors, and individuals. Since the mandatory waste separation from the source will be implemented in 2015, the government should take this opportunity to direct the separated organic waste collected from households to biogas plants so that it could be processed into biogas. Once everyone is doing their part, it would be easier for us to apply this technology for the benefits of our future. The waste produced that is going to be discarded could be converted into valuable energy for all. We must also be reminded that biogas is a cleaner, safer and a more sustainable source of renewable energy compared to fossil fuels. Even though the cost of building a biogas plant might be expensive, it will still be far more profitable in return in so many aspects and boost Malaysia's economy as well.

REFERENCES

- [1] Hoornweg, D., Bhada-Tata, P. 2012. What a waste: a global review of solid waste management. Urban development and local government unit, World Bank, Washington DC, USA, 2012.
- [2] NSP. 2005. National Strategic Plan for solid waste management in Malaysia: Ministry of Housing and Local Government.
- [3] Ismail, S.N.S., Manaf, L.A. The challenge of the future landfill: A case study of Malaysia, *Journal of Toxicology and Environmental Health Sciences*, 5(6), 86-96.
- [4] Samah, M.A.A., Manaf, L.A.A., Ahsan, A., Sulaiman, W.N.A., Agamuthu, P., D'Silva, J.L. 2013. Household Solid Waste Composition in Balakong City, Malaysia: Trend and Management, *Polish Journal of Environmental Studies*, 22(6), 1807-1816.
- [5] Budhiarta, C.S., Basri, H. 2012. Current status of municipal solid waste generation in Malaysia, *International Journal of Advanced Science Engineering Information Technology*, (2), 16-21.
- [6] JPSPN. National Solid Waste Management Department, Ministry of Human Wellbeing, Housing and Local Government. <http://www.kpkt.gov.my/> (accessed on 15th November 2014)
- [7] The Malaysian Insider. Compulsory for Malaysians to separate rubbish from next year. <http://www.themalaysianinsider.com/> (accessed on 25th November 2014)
- [8] Kiran, E.U., Trzcinski, A.P., Ng, W.J., Liu, Y. 2014. Bioconversion of food waste to energy: A review, *Fuel*, (134), 389-399.
- [9] Moh, Y.C., Manaf, L.A. 2014. Overview of household solid waste recycling policy status and challenges in Malaysia, *Resources, Conservation, and Recycling*, (82), 50-61.
- [10] Gerlach, F., Grieb, B., Zerger, U. 2013. Sustainable biogas production: A handbook for organic farmers.
- [11] AEBIOM. European Biomass Association. A Biogas Roadmap for Europe. <http://www.aebiom.org> (accessed on 2nd October 2014)
- [12] MPOB. Malaysian Palm Oil Board. National Key Economic Areas. Chapter 9: Palm Oil. <http://www.mpob.gov.my> (accessed on 9th November 2014)
- [13] Chin, M.J., Poh, P.E., Tey, B.T., Chan, E.S., Chin, K.L. 2013. Biogas from palm oil mill effluent (POME): Opportunities and challenges from Malaysia's perspective, *Renewable and Sustainable Energy Reviews*, (26), 717-726.
- [14] Kosmo. Najis Jadi Tenaga Elektrik dan Baja by Adlan Jaafar. <http://www.kosmo.com.my/> (accessed on 9th November 2014)
- [15] Ushikubo, A. 2014. Recycling of Food Waste in Japan. <http://www.oecd.org/> (accessed on 4th October 2014).
- [16] Institution of Engineers Malaysia (IEM). 2008. Position paper on energy efficiency. IEM Position Paper on Energy Efficiency (PPEE), 4-45.
- [17] Andres, M.T.J. 2016. Development of Biodegradable Plastic as Mango Fruit Bag, *International Journal on Advanced Science, Engineering and Information Technology*, 6(5), 799-803.
- [18] Sutrisno, I., Wardani, A.K., Ratnawati, L. 2016. Isolation and Identification of A Lipid-Degrading Bacteria from Fish (*Sardinella longiceps*) Canning Wastewater, *International Journal on Advanced Science, Engineering and Information Technology*, 6(4), 441-446.
- [19] Abdulkarim, I.A., Lambu, I.B., Ahmed B.Y., Sheriff, F.M. 2013. People's Awareness and Attitude on Biogas as an Alternative Domestic Energy in Urban Kano, *Academic Research International*, 4(6), 625-635.
- [20] Keong, C.Y. 2005. Energy demand, economic growth and energy efficiency-the Bakun dam-induced sustainable energy policy revisited, *Energy Policy*, 33, 679-689, 2005.

