

# Conference Proceedings

- [HOME](#)

[BROWSE](#)  
[INFO](#)

- [FOR AUTHORS](#)

[FOR ORGANIZERS](#)

- [Home >](#)
- [AIP Conference Proceedings >](#)
- [Volume 2123, Issue 1 >](#)
- [10.1063/1.5116998](#)

[\\_PREVNEXT\\_](#)

No Access Published Online: 17 July 2019

## • **Organizational challenges in the adoption of wind energy in Africa**

- 

AIP Conference Proceedings **2123**, 020071 (2019); <https://doi.org/10.1063/1.5116998>

[O. S. I. Fayomi<sup>1,3,a\)</sup>](#), [I. G. Akande<sup>2\)</sup>](#), [O. S. Ohunakin<sup>1\)</sup>](#), [O. O. Ajayi<sup>1\)</sup>](#), and [S. O. Oyedepo<sup>1\)</sup>](#)  
[more...View AffiliationsView Contributors](#)

- [ABSTRACT](#)
- [TOOLS](#)

[SHARE](#)  
[METRICS](#)

-

## ○ TOPICS

- [Fossil fuels](#)
- [Biomass energy sources](#)
- [Renewable energy](#)
- [Energy analysis](#)
- [Wind energy](#)

## ABSTRACT

Although fossil fuels uncomplicated are easy to use energy sources, the issues associated with their use are numerous; it affects political, economic, health and environment. The current energy problems result from the way fossil fuels are consumed at an exponential rate, and the world demand of these fuels is expected to go up each year for several decades to come.

Renewable energy deployment is steadily growing in Africa, a continent with abundance of resources- wind, water, sun, and biomass. Investing in the long term solutions that these renewable energy sources have to offer would be advantageous and beneficial to all African countries by helping to avoid economic and sustainability problems. These truths show us that the wind can provide a lot of our present and future world energy requirements.

## REFERENCES

1. I.S. Karekezi and W. Kithyoma, “Renewable energy strategies for rural Africa: is a PV-led renewable energy strategy the right approach for providing modern energy to the rural poor of sub-Saharan Africa?,” *Energy Policy*, vol. **30**, no. 11–12, pp. 1071–1086,

2002. [https://doi.org/10.1016/S0301-4215\(02\)00059-9](https://doi.org/10.1016/S0301-4215(02)00059-9), [Google](#)

[ScholarCrossref](#)

2. 2.C. L. Azimoh, P. Klintonberg, C. Mbohwa, and F. Wallin, “Replicability and scalability of mini-grid solution to rural electrification programs in sub-Saharan Africa,” *Renewable Energy*, vol. **106**, pp. 222–231, 2017. <https://doi.org/10.1016/j.renene.2017.01.017>, [Google ScholarCrossref](#)
3. 3.U. Deichmann, C. Meisner, S. Murray, and D. Wheeler, “The economics of renewable energy expansion in rural Sub-Saharan Africa,” *Energy Policy*, vol. **39**, no. 1, pp. 215–227, 2011. <https://doi.org/10.1016/j.enpol.2010.09.034>, [Google ScholarCrossref](#)
4. 4.M. Cloutier and P. Rowley, “The feasibility of renewable energy sources for pumping clean water in sub-Saharan Africa: A case study for Central Nigeria,” *Renewable Energy*, vol. **36**, no. 8, pp. 2220–2226, 2011. <https://doi.org/10.1016/j.renene.2010.12.019>, [Google ScholarCrossref](#)
5. 5.O. Ellabban, H. Abu-Rub, and F. Blaabjerg, “Renewable energy resources: Current status, future prospects and their enabling technology,” *Renewable Sustainable Energy Rev.*, vol. **39**, pp. 748–764, 2014. <https://doi.org/10.1016/j.rser.2014.07.113>, [Google ScholarCrossref](#)
6. 6.J. P. Dorian, H. T. Franssen, and D. R. Simbeck, “Global challenges in energy,” *Energy Policy*, vol. **34**, no. 15, pp. 1984–1991, 2006. <https://doi.org/10.1016/j.enpol.2005.03.010>, [Google ScholarCrossref](#)
7. 7.J. Li and S. Jiang, “Global Energy Interconnection: an effective solution to climate challenges,” *Global Energy Interconnection*, vol. **1**, no. 4, pp. 406–

408, 2018. [https://doi.org/10.1016/S2096-5117\(18\)30075-6](https://doi.org/10.1016/S2096-5117(18)30075-6), [Google ScholarCrossref](#)

8. 8.Z. Liu, “Global Energy Development: The Reality and Challenges,” in *Global Energy Interconnection*, 2015, pp. 1–64. [Google Scholar](#)
9. 9.G. M. Joselin Herbert, S. Iniyan, E. Sreevalsan, and S. Rajapandian, “A review of wind energy technologies,” *Renewable Sustainable Energy Rev.*, vol. **11**, no. 6, pp. 1117–1145, 2007. <https://doi.org/10.1016/j.rser.2005.08.004>, [Google ScholarCrossref](#)
10. 10.M. Hafner, S. Tagliapietra, and L. de Strasser, *Energy in Africa: Challenges and Opportunities*. Springer, 2018. [Google ScholarCrossref](#)
11. 11.A. D. Mukasa, E. Mutambatsere, Y. Arvanitis, and T. Triki, “Wind energy in sub-Saharan Africa: Financial and political causes for the sector’s under-development,” *Energy Research & Social Science*, vol. **5**, pp. 90–104, 2015. <https://doi.org/10.1016/j.erss.2014.12.019>, [Google ScholarCrossref](#)
12. 12.A. Allouhi *et al.*, “Evaluation of wind energy potential in Morocco’s coastal regions,” *Renewable Sustainable Energy Rev.*, vol. **72**, pp. 311–324, 2017. <https://doi.org/10.1016/j.rser.2017.01.047>, [Google ScholarCrossref](#)
13. 13.A. Ahmed, “An Evaluation of Wind Energy Potential in the Northern and Southern Regions of Nigeria on the Basis of Weibull and Rayleigh Models,” *American Journal of Energy Engineering*, vol. **1**, no. 3, p. 37, 2013. <https://doi.org/10.11648/j.ajee.20130103.11>, [Google ScholarCrossref](#)
14. 14.F. Folifac and S. Gaskin, “Joint water supply projects in rural Cameroon: partnership or profiteering? Lessons from the Mautu–Cameroon

- Development Corporation (CDC) project,” *Water Sci. Technol. Water Supply*, vol. **11**, no. 4, pp. 409–417,  
2011. <https://doi.org/10.2166/ws.2011.061>, [Google ScholarCrossref](#)
15. 15.A. J. Njoh, S. Etta, I. B. Ngyah-Etchutambe, L. E. D. Enomah, H. T. Tabrey, and U. Essia, “Opportunities and challenges to rural renewable energy projects in Africa: Lessons from the Esaghem Village, Cameroon solar electrification project,” *Renewable Energy*, vol. **131**, pp. 1013–1021,  
2019. <https://doi.org/10.1016/j.renene.2018.07.092>, [Google ScholarCrossref](#)
16. 16.J. Lukuyu, “Wind-diesel microgrid system for remote villages in Kenya,” in *2012 North American Power Symposium (NAPS)*, 2012. [Google ScholarCrossref](#)
17. 17.Y. S. Mohammed, M. W. Mustafa, and N. Bashir, “Status of renewable energy consumption and developmental challenges in Sub-Saharan Africa,” *Renewable Sustainable Energy Rev.*, vol. **27**, pp. 453–463,  
2013. <https://doi.org/10.1016/j.rser.2013.06.044>, [Google ScholarCrossref](#)
18. 18.A. K. Aliyu, B. Modu, and C. W. Tan, “A review of renewable energy development in Africa: A focus in South Africa, Egypt and Nigeria,” *Renewable Sustainable Energy Rev.*, vol. **81**, pp. 2502–2518,  
2018. <https://doi.org/10.1016/j.rser.2017.06.055>, [Google ScholarCrossref](#)
19. 19.D. Surroop and P. Raghoo, “Renewable energy to improve energy situation in African island states,” *Renewable Sustainable Energy Rev.*, vol. **88**, pp. 176–183,  
2018. <https://doi.org/10.1016/j.rser.2018.02.024>, [Google ScholarCrossref](#)
-

20. 20.M. Dornan, “Access to electricity in Small Island Developing States of the Pacific: Issues and challenges,” *Renewable Sustainable Energy Rev.*, vol. **31**, pp. 726–735, 2014. <https://doi.org/10.1016/j.rser.2013.12.037>, [Google ScholarCrossref](#)
  21. 21.A. Pegels, “Renewable energy in South Africa: Potentials, barriers and options for support,” *Energy Policy*, vol. **38**, no. 9, pp. 4945–4954, 2010. <https://doi.org/10.1016/j.enpol.2010.03.077>, [Google ScholarCrossref](#)
  22. 22.H. Winkler, “Energy policies for sustainable development in South Africa,” *Energy for Sustainable Development*, vol. **11**, no. 1, pp. 26–34, 2007. [https://doi.org/10.1016/S0973-0826\(08\)60561-X](https://doi.org/10.1016/S0973-0826(08)60561-X), [Google ScholarCrossref](#)
  23. 23.B. Msimanga and A. B. Sebitosi, “South Africa’s non-policy driven options for renewable energy development,” *Renewable Energy*, vol. **69**, pp. 420–427, 2014. <https://doi.org/10.1016/j.renene.2014.03.041>, [Google ScholarCrossref](#)
  24. 24.T. Murombo, “Legal and policy barriers to renewable and sustainable energy sources in South Africa,” *The Journal of World Energy Law & Business*, vol. **9**, no. 2, pp. 142–165, 2016. <https://doi.org/10.1093/jwelb/jww001>, [Google ScholarCrossref](#)
  25. 25.T. W. Gezahegn, G. Gebregiorgis, T. Gebrehiwet, and K. Tesfamariam, “Adoption of renewable energy technologies in rural Tigray, Ethiopia: An analysis of the impact of cooperatives,” *Energy Policy*, vol. **114**, pp. 108–113, 2018. <https://doi.org/10.1016/j.enpol.2017.11.056>, [Google ScholarCrossref](#)
-

26. 26.R. Best and P. J. Burke, “Adoption of solar and wind energy: The roles of carbon pricing and aggregate policy support,” *Energy Policy*, vol. **118**, pp. 404–417, 2018. <https://doi.org/10.1016/j.enpol.2018.03.050>, [Google ScholarCrossref](#)
27. 27.P. P. da Silva, P. A. Cerqueira, and W. Ogbe, “Determinants of renewable energy growth in Sub-Saharan Africa: Evidence from panel ARDL,” *Energy*, vol. **156**, pp. 45–54, 2018. <https://doi.org/10.1016/j.energy.2018.05.068>, [Google ScholarCrossref](#)
- 

1. © 2019 Author(s). Published by AIP Publishing.