

An all-Africa dataset of energy model “supply regions” for solar photovoltaic and wind power

S. Sterl; B. Hussain; A. Miketa; Y. Li; B. Merven; M.B. Ben Ticha;
M.A.E. Elabbas; W. Thiery; D. Russo

Abstract-

With solar and wind power generation reaching unprecedented growth rates globally, much research effort has recently gone into a comprehensive mapping of the worldwide potential of these variable renewable electricity (VRE) sources. From a perspective of energy systems analysis, the locations with the strongest resources may not necessarily be the best candidates for investment in new power plants, since the distance from existing grid and road infrastructures and the temporal variability of power generation also matter. To inform energy planning and policymaking, cost-optimisation models for energy systems must be fed with adequate data on potential sites for VRE plants, including costs reflective of resource strength, grid expansion needs and full hourly generation profiles. Such data, tailored to energy system models, has been lacking up to now. In this study, we present a new open-source and open-access all-Africa dataset of “supply regions” for solar photovoltaic and onshore wind power to feed energy models and inform capacity expansion planning.

Index Terms- Energy planning; Cost-optimization models; Supply regions; Variable renewable energy; Africa

Due to copyright restriction we cannot distribute this content on the web. However, clicking on the next link, authors will be able to distribute to you the full version of the paper:

[Request full paper to the authors](#)

If your institution has an electronic subscription to Scientific data, you can download the paper from the journal website:

[Access to the Journal website](#)

Citation:

Sterl, S.; Hussain, B.; Miketa, A.; Li, Y.; Merven, B.; Ben Ticha, M.B.; Elabbas, M.A.E.; Thiery, W.; Russo, D. "An all-Africa dataset of energy model “supply regions” for solar photovoltaic and wind power", Scientific data, vol.9, pp.664-1-664-12, .