

Accepted Manuscript

Energy droughts from variable renewable sources in European climates

D. Raynaud, B. Hingray, B. François, J.D. Creutin

PII: S0960-1481(18)30282-9

DOI: [10.1016/j.renene.2018.02.130](https://doi.org/10.1016/j.renene.2018.02.130)

Reference: RENE 9861

To appear in: *Renewable Energy*

Received Date: 26 April 2017

Revised Date: 31 January 2018

Accepted Date: 28 February 2018

Please cite this article as: Raynaud D, Hingray B, François B, Creutin JD, Energy droughts from variable renewable sources in European climates, *Renewable Energy* (2018), doi: 10.1016/j.renene.2018.02.130.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Energy droughts from variable renewable sources in European climates

Raynaud D.^{1,2}, Hingray B.^{1,3}, François B.⁴, Creutin J.D.^{1,3}

1 : Univ. Grenoble Alpes, LTHE UMR 5564, Grenoble, F-38000, France

2: Grenoble-INP, IGE UMR 5001, Grenoble, F-38000, France

3: CNRS, IGE UMR 5001, Grenoble, F-38000, France

4: Department of Civil and Environmental Engineering, University of Massachusetts, Amherst, Massachusetts, USA

Corresponding author: HINGRAY Benoît, benoit.hingray@univ-grenoble-alpes.fr, IGE Domaine Universitaire 70 rue de la physique 38 400 Saint Martin d'Hères FRANCE

Abstract

The increasing share of variable renewable energy sources in the power supply system raises questions about the reliability and the steadiness of the production. In this study, we assess the main statistical characteristics of “energy droughts” for wind, solar and run-of-the-river hydro power in Europe. We propose two concepts of energy droughts, considering either: Energy Production Droughts (EPD) as sequences of days with low power production or Energy Supply Droughts (ESD) as sequences of days with a high production/demand mismatch.

Download English Version:

<https://daneshyari.com/en/article/6764395>

Download Persian Version:

<https://daneshyari.com/article/6764395>

[Daneshyari.com](https://daneshyari.com)