



(19) **United States**

(12) **Patent Application Publication**  
**ALBERT**

(10) **Pub. No.: US 2023/0231379 A1**

(43) **Pub. Date: Jul. 20, 2023**

(54) **METHOD FOR DETERMINING THE  
OPTIMAL MIX OF ENERGY FOR A HYBRID  
RENEWABLE ENERGY PRODUCTION SITE**

(52) **U.S. Cl.**  
CPC ..... **H02J 3/004** (2020.01); **H02J 3/003**  
(2020.01); **H02J 3/381** (2013.01); **H02J**  
**2300/24** (2020.01); **H02J 2300/28** (2020.01);  
**H02J 2203/20** (2020.01); **H02J 2300/40**  
(2020.01)

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(21) Appl. No.: **18/011,355**

(22) PCT Filed: **Jun. 23, 2021**

(86) PCT No.: **PCT/EP2021/067191**

§ 371 (c)(1),

(2) Date: **Dec. 19, 2022**

(30) **Foreign Application Priority Data**

Jun. 29, 2020 (EP) ..... 20183008.0

**Publication Classification**

(51) **Int. Cl.**  
**H02J 3/00** (2006.01)  
**H02J 3/38** (2006.01)

(57) **ABSTRACT**

A method includes collecting energy resource data for the specific geographic location over a predetermined time period, calculating power curves and matrices for at least two energy technologies based on the collected energy resource data, estimating the potential of generated electric power over time of the at least two energy technologies based on the calculated power curves and matrices, the time period, and the characteristic parameters of each of the at least two energy technologies, simulating different base load and power variations based on the estimation of the potential generated electric power and different distribution of the electric power generation of the at least two energy technologies, identifying an optimal distribution of the at least two energy technologies by analyzing the base load and power variations for each simulation, and choosing the distribution of the electric power generation with the highest base load and lowest power variation.

