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PUEL et al.(10) **Pub. No.: US 2024/0178792 A1**(43) **Pub. Date: May 30, 2024**(54) **PROCESS FOR OPTIMISING THE SERVICE LIFE OF A BIFACIAL MULTIJUNCTION PHOTOVOLTAIC MODULE AND PHOTOVOLTAIC MODULE OR PANEL SUITED TO THIS PROCESS**(86) PCT No.: **PCT/EP2022/068801**

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CPC **H02S 50/15** (2014.12); **H02S 40/34** (2014.12)(57) **ABSTRACT**

A lifetime optimization method for a two-sided photovoltaic module, which includes at least one multi-junction stack, where the stack's first junction layer is on the module's first side, which is exposed to the sun at the beginning of the module's life in the module's base position, and the stack's last junction layer is arranged under the module's second side, which receives diffused and reflected light and light passed through the stack. The method includes measuring the full module's output power (P_{FM}); calculating an estimated output power for the last junction layer (P_{LL}) as a function of the first irradiance in the module's turned over position, where the second side becomes its upper side; comparing the estimated P_{LL} with the P_{FM} when the first side is the upper side and recommending turning over the module when the base position's P_{FM} becomes less than the turned over position's estimated P_{LL} .

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