

BayWa r.e. Operation Services S.r.l. Opportunities and challenges for utility scale Photovoltaics

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Investment in innovation for enhanced O&M service

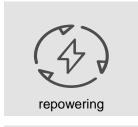
- O&M is labor intensive → Innovation should work on automation and performance improvement
- **Digitalization:** support to improve processes, customer interaction and performance management.
- Applied research: dedicated R&D team (4 researchers) in Rome. Main research activities:
 - Development of Performance Analysis Tools, based on machine learning algorithms, to be operated in parallel to the monitoring systems
 - Improvement of the effectiveness and reliability of drone inspections, including the use of innovative hardware (IR cameras and mini-drones) to be made available to our technicians on site in order to update the data on modules state of health platform
 - Initial evaluation of virtual reality to improve on site technical activities. A first pilot test has not been very successful, but we will investigate this field more in the future
- BayWa r.e. is part of a Horizon 2020 project named TRUST-PV with other 19 Europewide institutions

TRUST-PV will demonstrate increase in performance and reliability of PV components (e.g. module O&M friendly design, inverter enabled O&M solutions, aftermarket coatings, extended testing beyond standard) and PV systems (e.g. more accurate yield models and assessment, data-driven mitigation measures from monitoring and advanced field inspection, reliability of novel system concepts such as floating PV) in large portfolios of distributed and/or utility scale PV.

- BayWa r.e.'s role in TRUST-PV:
 - Coordinate one Working Package on advanced field inspections
 - Support **on site demonstration** of all the innovation developed by the partners
 - development of a path of circular economy which enhances disposed components/material recovery for further use in the
 industry, to support progressive steps of plant repowering, aimed at increasing their production and lifetime without
 requiring additional land











Stefano Carpigiani

Head of Sales and Procurement +39 392 91 38 363 stefano.carpigiani@baywa-re.it

BayWa r.e. Operation Services

Largo Augusto, 3 20122, Milano, Italia Tel: +39 02 32 111 91 info@baywa-re.it

Amministratori

Alessandra Toschi Lorenzo Palombi Paolo Vincenzo Chiantore

REA No.: MI - 2004725