**Context**

Dust has direct (solar irradiance) and indirect (cloud interaction) radiative effects that impact the renewable resources. Dust deposition on solar panel can lead to significant power production losses. The use of water to wash off dust deposited on panels adds new pressure on an already scarce resource, threatening system sustainability. This is particularly critical for West Africa, poised for a fast development of renewable energy production.

**Main objectives**

To improve our understanding of the West-African dust cycle and its direct/indirect effects on solar resource and production.

To account for dust effects in a power forecasting chain and build reliable and efficient decision-making tools to optimize power grid management and solar production.

To address the issue of the water footprint of solar farms. To propose optimal maintenance plans based on dust dynamics.

**Work organisation**

Two pilot sites

Ten Merina (Senegal)  
92 000 panels, 46 ha  
30 MW  
(4% of Senegal today’s consumption)

Zagtouli (Burkina Faso)  
130 000 panels, 60 ha  
34 MW  
(4% of BF today’s consumption)

**Funds and Support**

ANR-22-CE03-0011

**References**
