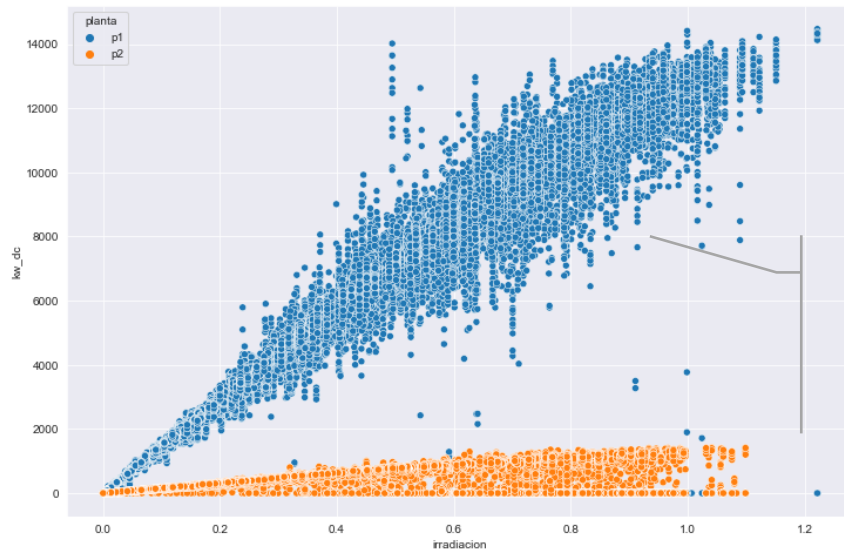# Data quality problems have been detected that suggest treating the conclusions to be presented as temporary.
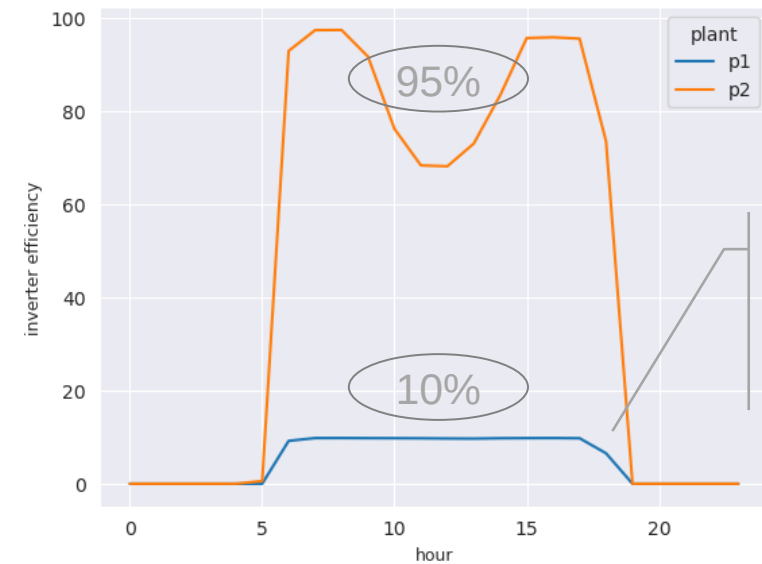
Continuous current generated in each plant (Kw)

Efficiency of each plant (%)

Average efficiency in the period

DC generation is about 10 times higher in plant 1 than in plant 2

95%

10%
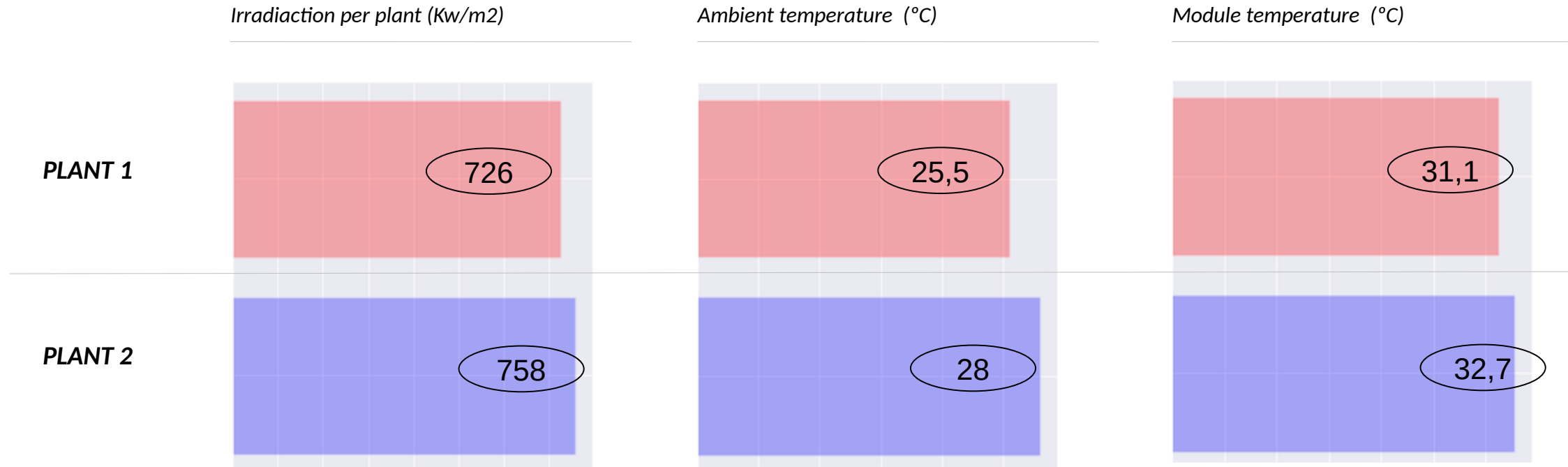
The efficiency of plant 1 is around 10%

A new extraction of data from the meters has been requested to check if there may indeed have been data quality problems.

The two plants receive high and similar amounts of irradiation, with no sign of any problem at this point.

	Irradiaction per plant (Kw/m2)	*Ambient temperature (°C)*	*Module temperature (°C)*
PLANT 1	726	25,5	31,1
PLANT 2	758	28	32,7

The average differences found between the plants do not allow us to think that there are great differences in the capacity to generate direct current.
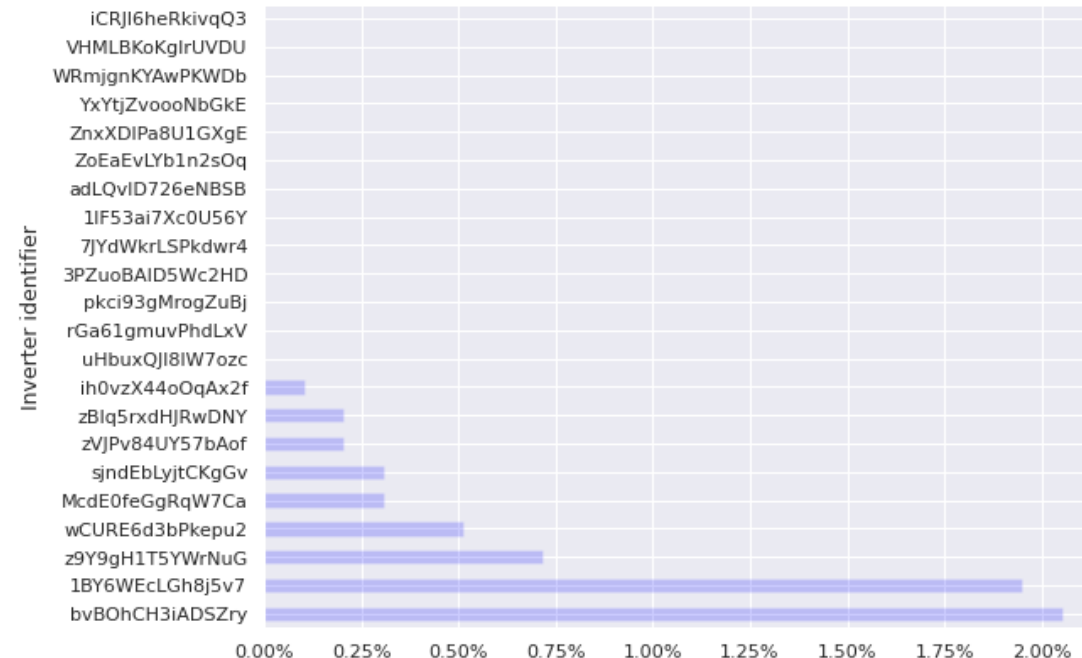
The DC generation of plant 1 is correct, the modules seem to carry DC to the inverters

Continuous current generated in each plant (Kw)
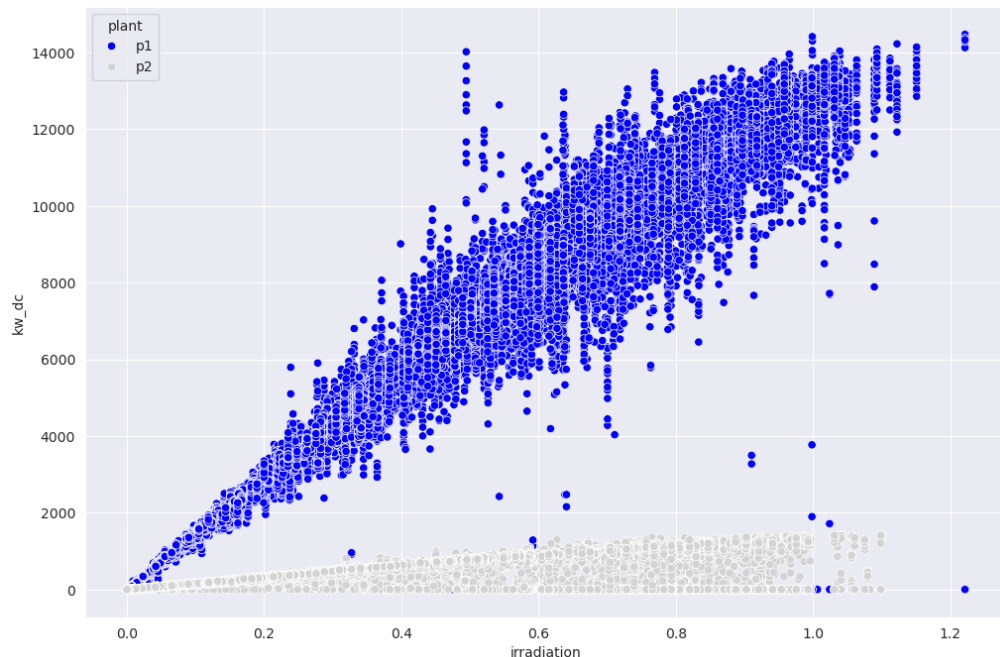
The **direction** of **DC generation is increasing** with greater solar irradiation in both plants.

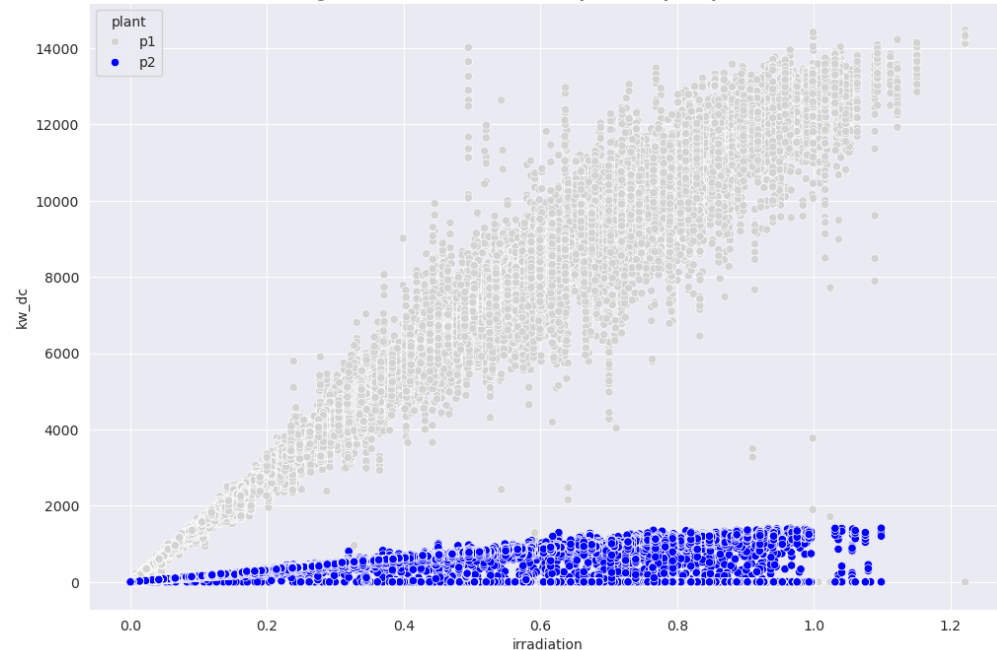Percentage of failure in DC generation in the inverter of plant 1

We see that although there are some inverters that have had **failures in DC generation**, their magnitude is **less than 2%** of the measurements.

**Review plant 1 sensor data to validate DC generation quantities**

The DC generation of plant 2 does NOT work well, the modules bring very little DC to the inverters even in the hours of greatest irradiation

Continuous current generated in each plant (Kw)

Plant number 2 produces ten times less kW at the same irradiation levels than plant number 1.

Percentage of failure in DC generation in the inverter of plant 2
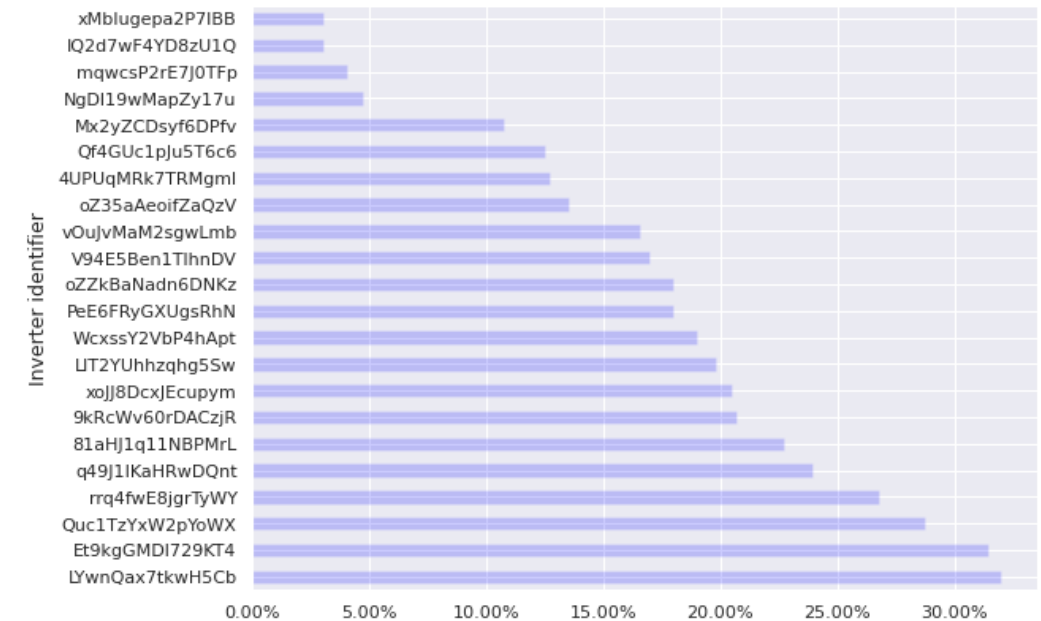
We see that there is **a great difference** in the percentage of **failures in the generation of DC** by inverter, from some that have less than **5%** to those that exceed **30%** of the measurements.
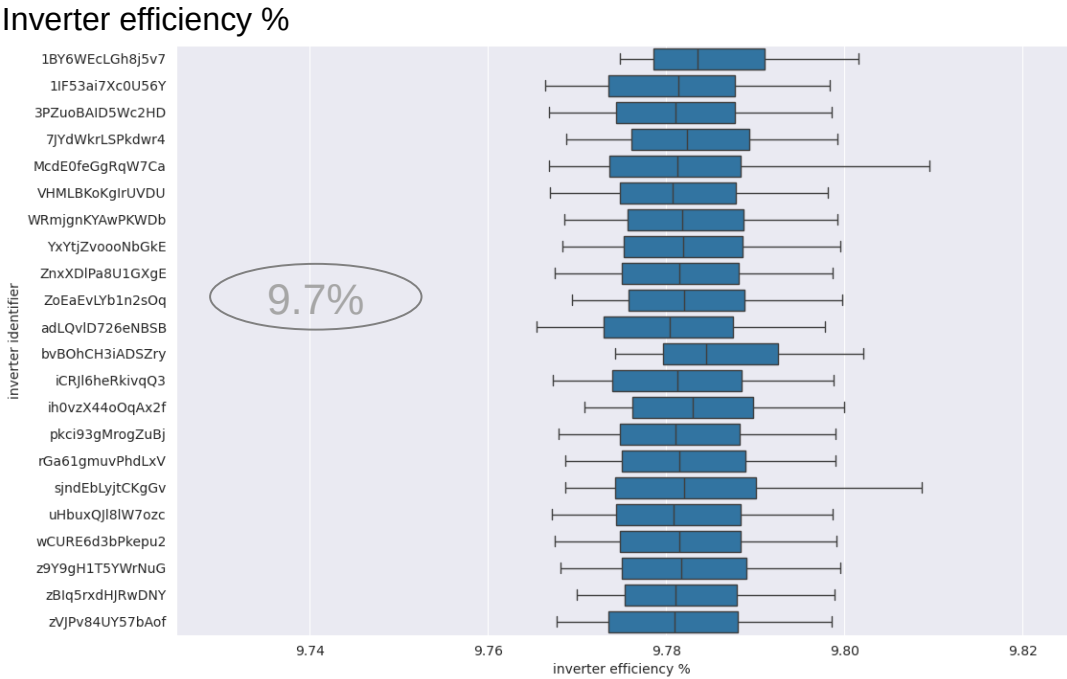
Maintenance check on the inverter modules on plant 2 in which there are many moments of zero DC generation.

A malfunction has been detected in the inverters on plant 1, which only manage to transform around 10% of DC into AC.

Transformation of DC to AC energy in each plant (Kw)
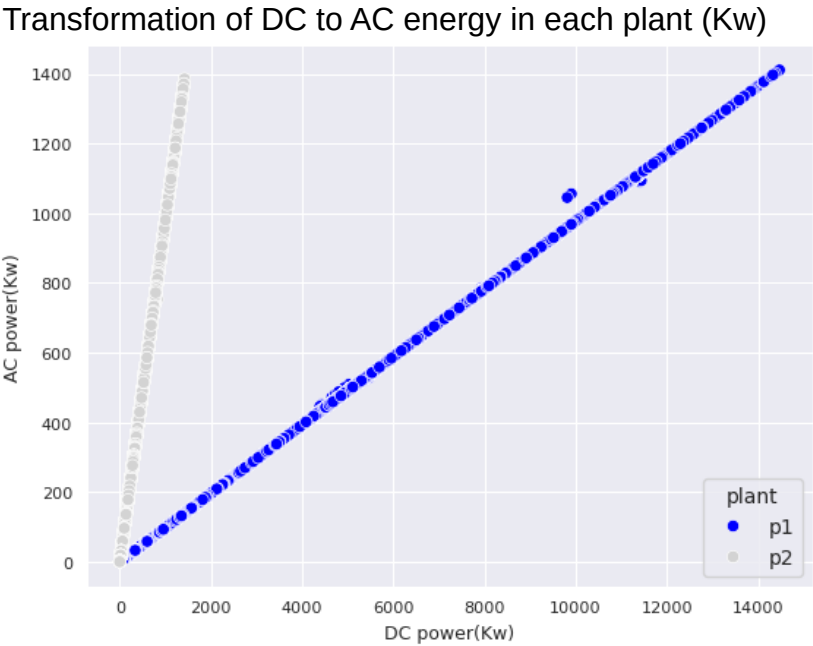
It is notable that the **low efficiency** is not due to moments of non-reception from DC, but rather **seems more structural** (again, keep in mind that it could be due to a **data quality problem** in DC on plant 1).
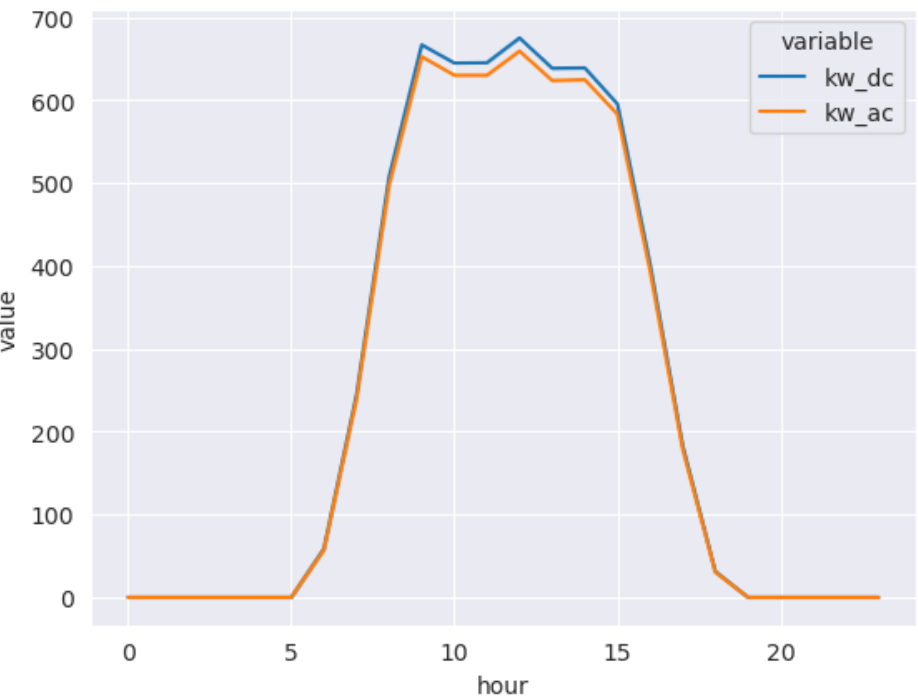
Inverter efficiency %

We see that the inverters on plant 1 maintain a low efficiency of around 10%

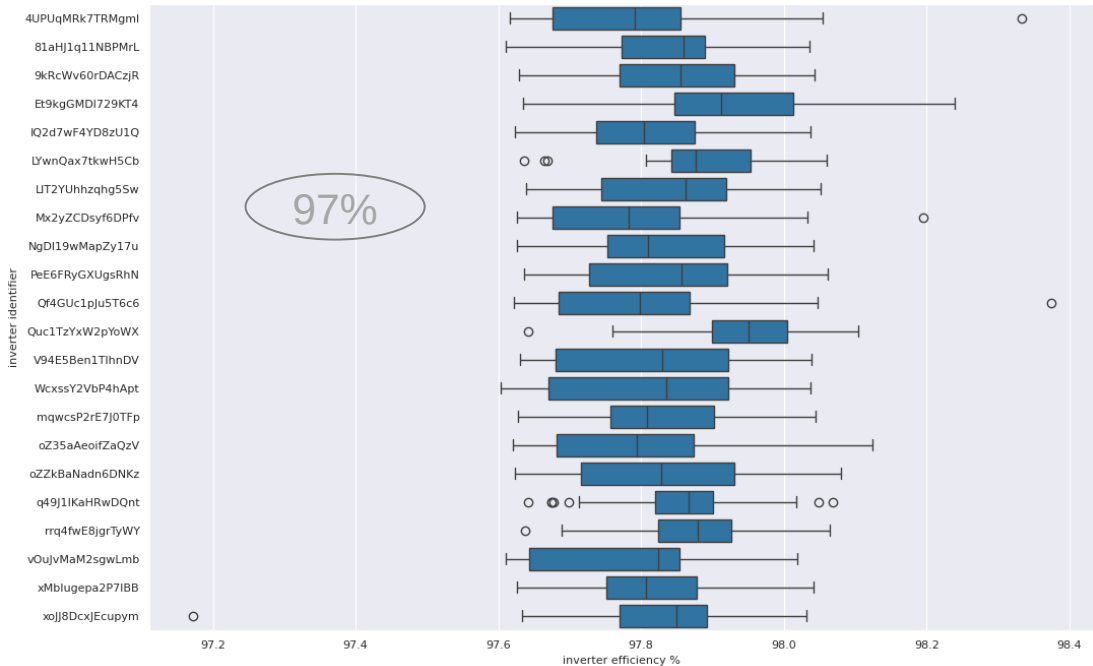**Check the maintenance of the inverters on plant 1**

The transformation from DC to AC of plant 2 is correct, the inverters achieve an efficiency greater than 97%

Transformation from DC to AC on plant 2 (Kw)

Inverter efficiency % en la planta 2

We see that the **transformation** from DC to AC is continuous throughout the hours of the day **with low levels of loss**.

Once the problem of low DC generation is taken into account, the **inverters** on plant 2 do the job of **transforming to AC well**.

The efficiency of the inverters on plant 2 does not allow us to think that there are anomalies in the operation and state of the inverters.

After the analysis carried out, a 3-step action plan is recommended

	Data quality	Irradiation	DC Production	Inverters Efficiency
PLANT 1	❌	✅	✅	❌
PLANT 2	❌	✅	❌	✅

ACTION #1: Comprehensive data quality improvement plan

ACTION #2: Review of the inverter modules indicated on plant 2

ACTION #3: Maintenance of all inverters on plant 1