CLARA
Climate forecast enabled knowledge services

CLARA sets to develop fourteen climate services building upon the Copernicus seasonal forecasts, and demonstrate their marketability and value.

Renewable Energy
Solar Energy Assessment and Planning Tool (SEAP)

Planning in solar energy

The use of renewable energy sources is one of the main challenges of humanity in the short term. For our society development, it is mandatory to find enough sources of clean energy. Within the framework of renewable energies, **photovoltaic** is one of the technologies with the greatest **future projection**.

These facilities must overcome the disadvantages associated with the stochastic nature of this type of energy production, linked as it is to the presence of uncontrollable weather events. This is one of the main disadvantages of this type of renewable facility, especially in terms of participating in the **energy market**. This problem could be overcome by using climate services that can provide **weather forecast** with different scale times.

SEAP service
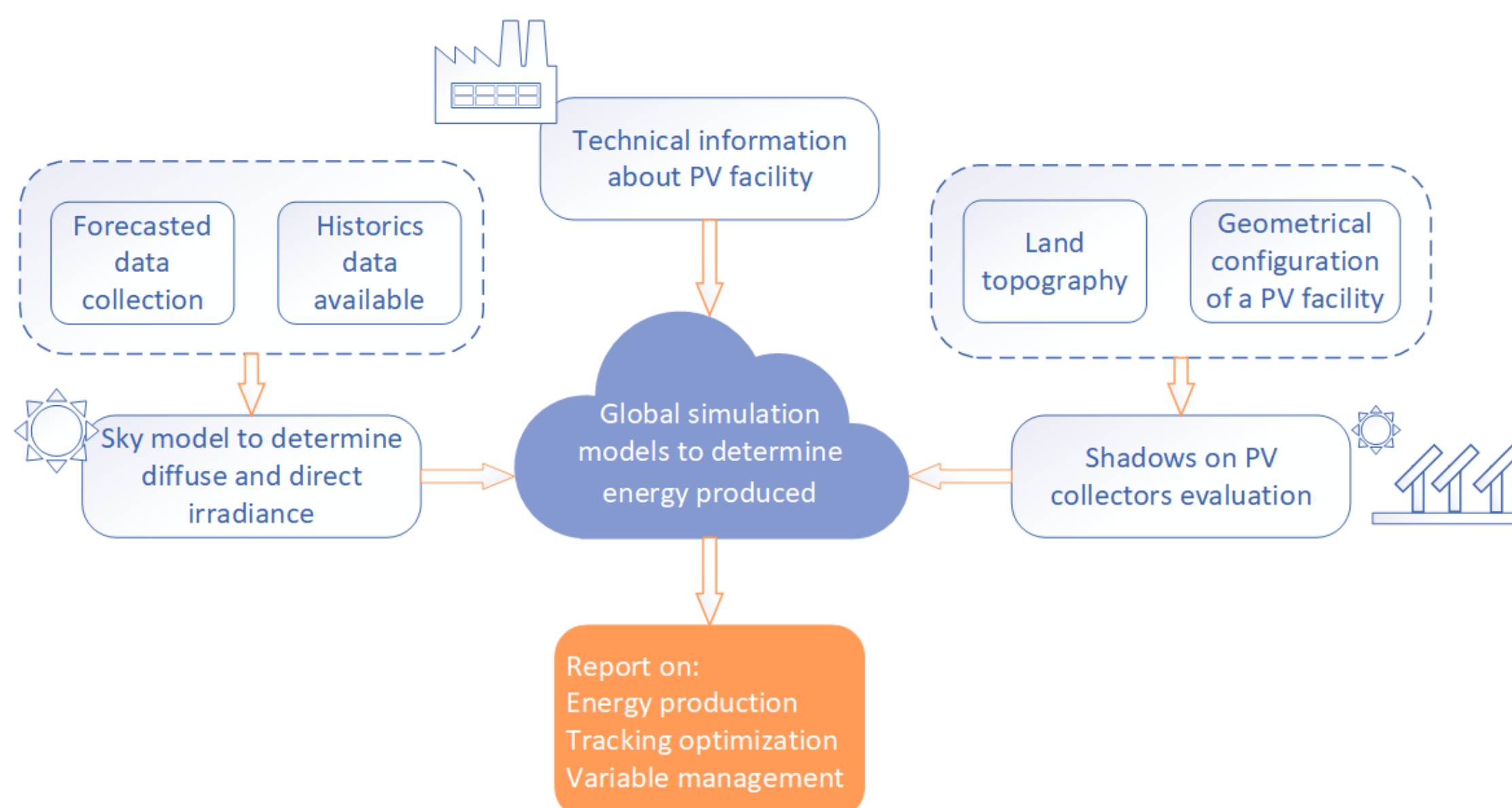
With this service, these predictions will be improved in different types of plants. The service will consider as classification criteria:

- Relationship or coexistence with conventional energy sources
- Access to solar resource and types of solar tracking

This service will offer the best alternatives for those plants the user can act on, either managing the priority of consumption in autonomous installations or determining the most appropriate tracking for each day.

Key innovations

Two different levels for the decision-making processes can be considered:

- Energy and economic management: the PV plants manager will be able to anticipate the purpose of this energy (sale, self-consumption or grid injection)
- Technical management: The SEAP service will provide information about the optimal solar tracking.

Thus, according to previous researches, the manager could improve the harnessing of the solar resource up to **6% per year**.

Business model

Final users will dispose of a set of tools to forecast the PV energy production providing benefits such as:

- *Electrical network managers*: anticipating or ordering the general working model of the electricity network.
- *Plant Technical Managers*: information about the best solar tracking strategy for collectors.

Thanks to SEAP service clients will log in the application an will dispose of specific areas to input and store the technical data of their facilities.

The client will receive information about relevant forecasted variables, and will be able to download and store graphs, tables and files.

The framework for this Assessment and planning tool will focus on the south of Spain (Andalusia).