

REVAMPING OF PV PLANTS IN ITALY: THE IMPORTANCE OF A MULTI-DISCIPLINARY APPROACH

Over one year ago, Gestore dei Servizi Elettrici (GSE) published the new framework on maintenance and renovation of photovoltaic plants benefiting from Conto Energia support regime (“New DTR”).

This clear set of rules created a favourable context for revamping and repowering PV plants, increasing the comfort of investors and financiers, taking the opportunities related to the **optimisation of operational assets**. This will help to fix the underperformance related to the poor quality of main component parts and the sub-optimal layout of the solar farm.

The Energy & Strategy Group of Politecnico di Milano, in its 2018 annual renewable energy report, has conducted a survey among the main solar operators in Italy: data confirm that a **new “revamping era” is in progress**. In the PV sector, about 7 out of the 10 interviewed operators (68%) stated that they have implemented or intend to implement revamping interventions. Those executed so far (mainly replacement, removal, new installation of the main components as panels and inverters) have generated in the 61% of the cases an increase of energy production that **in the 70% of interventions is estimated higher than +3% per year**.

In order to identify and successfully implement revamping actions, **technical skills are not enough**: a multidisciplinary approach is required to **integrate technical, financial, legal and regulatory competencies**. This will enable to properly execute what is allowed from a regulatory standpoint and provide the best technical solutions combined with a proper cash flows management in respect to the requirements set by the financiers’ obligations (in case of financed asset).

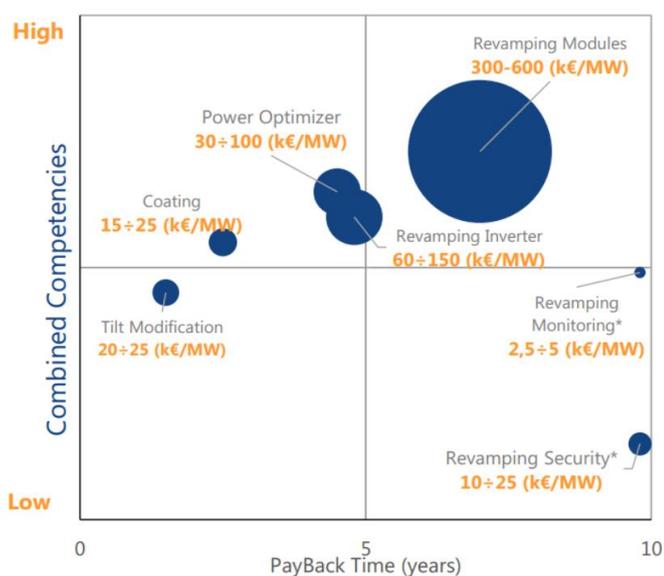
This is made clearer by **our Revamping Matrix below which summarizes the interventions managed by WiseEnergy in the last year**: for most of them, more than 3 competencies are necessary.

Revamping Matrix main assumptions

Interventions assumption:

- Tilt changing: overcoming shadowing from erroneous initial project
- Coating: 2÷4% increase on performing modules (II/III Conto Energia)
- Power optimizer: 3÷7% increase to overcoming shadowing
- Revamping inverter: overcoming ageing of old inverters
- Revamping modules: substitution of 20% of module affected by snail trails

*Revamping interventions that mitigate risks and increase control



WiseEnergy Revamping Matrix

Combined competencies include:

- **Financial competencies** (cost-benefit analysis, management of constraints from financial contracts, sources of funding)
- **Regulatory competencies** (permits rules, authorization of intervention, HSE)
- **Legal competencies** (Warranties, contracts management, claim management)
- **Technical-Technological** competencies (EPC, project management, scouting technologies, scouting suppliers, specific technology knowledge)

In our experience, combined competencies represent the **pivot variable to perform cost-effective interventions**. Therefore, it is advisable to involve an integrated operator like WiseEnergy that, acting both as technical advisor and asset manager, is able to provide end to end multi-disciplinary support.

WiseEnergy (Italy) Limited offers end to end technical, financial and commercial support for this process.