|  |  |
| --- | --- |
| TRAINING ASSETS | * Project-focused training allowing to go through the feasibility study of each trainer’s own micro-grid project
* Concrete solutions to reduce fossil fuel consumption of one territory

Presentation of up-to-date technologies available on market, adapted to off-grid & insular areas.  |
| OBJECTIVES | * Increase income and business-generating solarization opportunities
* Gain knowledge on solarized resilience solutions in a pandemic context (productive use of PV, new energy economic sector)
* Review basic grid and photovoltaic systems concepts
* Learn to size the various system components according to specific needs
* Understand sizing, monitoring and managing of micro-grids
* Detail stability issues with centralised or decentralised micro-grids depending on renewables integration level et the control over selective power cuts and load management
* Acquire knowledge on various insular PV applications such as solar mobility
 |
| AUDIENCE | * Energy offices : Policy and Decision-makers, energy department, planning services
* Utility companies, local grid managers, production unit operators
* Electrical contractors, design offices, project developers, renewable energy project managers
* Technical training institute trainers
 |
| PREREQUISITES | * Strong basic knowledge on electricity and photovoltaic systems
* Good knowledge of applicant own territory’s electricity production and distribution grid
 |
| TRAINERS | * Olivier VERDEIL - Solar Photovoltaic Expert – INES
* Bruno GAIDDON – Solar Photovoltaic Expert - Hespul
 |
| TEACHING METHODS | * Lectures, feedback, study cases
* Software practical sessions
* Solar Installation presentation
 |
| VALIDATION | * Training certificate
* Knowledge validation test
 |
| LENGTH | * 4 days - 28 hours
 |
| SCHEDULE | * 9h00 – 12h30 / 14h00 – 17h30 ()
 |
| LOCATION | * TBC
 |

PROGRAMME

|  |  |
| --- | --- |
| INTRODUCTION TO PV & MICRO-GRIDS IN SMALL ISLANDS* Non-interconnected Zones systems
* Grid fundamentals : various typologies of grids
* Voltage ranges
* Voltage and frequency tuning
* Grid-code

SOLAR RESOURCE AND TECHNOLOGY COMPONENTS* Solar resource
* Basic knowledge on solar photovoltaic energy: daily production, yearly production
* System architecture
* Micro-grid components
* Typologies of PV modules
* Typologies of PV inverters
* electrical energy storage solutions
* Economic and environmental analysis - Costs of components and systems

SIZING & GRID MANAGEMENT* Sizing equations
* Comparison of software sizing tools – case-study demonstration
* Integrated management of micro-grids
* Energy management strategy (objectives cost / CO2 / etc.)
* Uncertainties
* Decentralization
* Grid change

  | **SITE VISIT & CASE-STUDY**  |