

# Engineering Consulting



## Power Systems



Powersys owns a staff of engineers expert in simulation software and a network of partners with more than 15 years experience in the field of power system, electromagnetic design and power electronics. By the combination of engineering knowledge and our experience, Powersys is a partner of choice for your advanced studies.

### DOMAIN OF EXPERTISE

- Load Flow
- Short Circuit
- Harmonics
- Voltage Stability
- Transient Stability
- Motor Starting
- Arc Flash Hazard
- Protective Device Coordination
- Substation Grounding
- Cable Ampacity Studies
- Development of Models

“

*In my opinion, one of the biggest strengths is the accuracy of the achieved simulation results and obtained real results. Indeed, this helps us to enhance the design process of the products and test control algorithms.*

”



#### Software expertise

Our simulation software know-how and expert network is a real value added



#### Agile methodology

A proactive and faithful team completely dedicated to your success with a positive attitude



#### Turn-key solutions

Complete custom solutions meeting your project requirements and expectations.

Jérôme CORNAU

Engineering Service Manager

[j.cornau@powersys.fr](mailto:j.cornau@powersys.fr)

# CASE STUDY EXAMPLE



## Power Systems



### PV Plant integration analysis in facilities

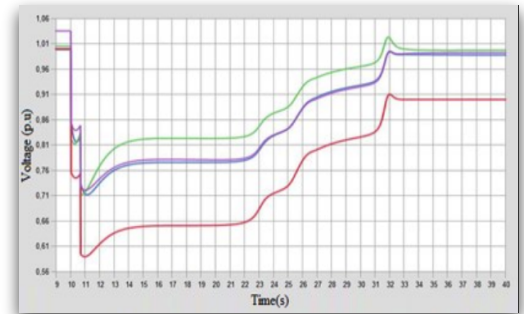
💰 16k€ 📅 4/6 weeks

#### Studies

- Simulation of multiple stressful events to study the **dynamic stability** with the PV plant
- Emulation of PV plant **harmonics generation**

#### Results

- No event endangers the stability of the system
- **No critical issue** identified due to the transients
- Harmonics emissions at PCC in compliance with the standards (IEEE)



💰 10k€ 📅 3 weeks

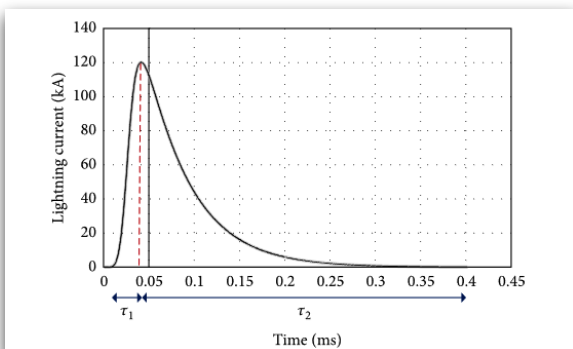
### Size a substation grounding grid

#### Studies

- **Soil modelling** and determination of **step and touch voltage limits** based on IEEE 80-213
- **Grid sizing** based on maximum fault current
- Calculation of step voltage, touch voltage and **ground potential rising**
- Several iterations to reduce step and touch voltage
- Determination of **isopotentials** at 650V and 1500V

#### Results

- A grounding plan, which is **in compliance with requirements**
- **The step and touch voltage map** was calculated in the whole substation location



### Optimize the configuration of cables

💰 15k€ 📅 4 weeks

#### Studies

- We calculated the expected overheating of cable in different conditions, as configuration of the layers, loaf profile over time and type of cables.

#### Results

- A final configuration has been validated that respects the project's requirements
- Recommendations have been given to improve the thermal performance of the cables

