Department: Electrical Engineering

Group name: *Planning, Operating and Controlling Electric Power Systems*

Acronym: *PLOCEL*

Group Coordinator: Fernández Jiménez, Luis Alfredo

ANEP Area(s): Electrical, electronic and automatic engineering; Computer science and information technology

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Department Report: 15/12/2004

RESEARCH TEAM **Number of researchers: 9**

Researcher	Department	Professional category
Fernández Jiménez, Luis Alfredo	Electrical Engineering	TP
Falces de Andrés, Alberto	Electrical Engineering	Interim Contract
Garcia Garrido, Eduardo	Electrical Engineering	Collaborator Doctor
Lara Santillán, Pedro María	Electrical Engineering	TP
Mendoza Villena, Montserrat	Electrical Engineering	TP
Muñoz Jiménez, Andrés	Electrical Engineering	Interim Contract
Rodríguez González, Carlos Alberto	Electrical Engineering	TCP
Zorzano Alba, Enrique	Electrical Engineering	TCP
Zorzano Santamaría, Pedro José	Electrical Engineering	TP

COLLABORATORS **Nº of collaborators: 0**

Collaborators	Department	Professional category

Lines of research

Planning of electric power systems.
Operation and control of electric power systems.
Evaluation and forecasting of renewable resources.
Application of Geographical Information Systems in Electric Power Systems.
Electricity demand and consumption management.
Quality of electric power.
Electrical metrology.
Electrical Machines.
Signal Processing.

Scientific and technological offer

Integral planning of electric power systems.
Planning and control of systems for electric power generation, transport, distribution, storage and use.
Energy assessment of renewable resources and other energy sources.
Participation in deregulated electricity markets.
Technical-financial optimisation of electricity supply contracts.
Multi-agent negotiation for consensual geographical location of electrical installations.
Determination of optimal locations for wind farms and solar parks.
Development of energy demand forecasting models.
Development of models for forecasting the generation of electricity from wind, solar or hydraulic sources.
Technical inspection procedures for industrial electrical installations.
Control of electrical machines and electronic power systems.
Audit of electrical installations in LV.
Studies of electrical machines. Classical and advanced studies.
Monitoring and control of distributed processes.
Development of electric vehicles.
Electrical tests.
Electric energy audits.
Specific electrical studies.
Conducted electromagnetic compatibility measurements and auditing.
PC-based test, measurement and/or adjustment systems.
Tests on custom-made electrical machines.
Tailor-made metrology.
Development of microprocessor-based systems.
Design and implementation of demonstrators.
Pre-certification tests.
Specialised Training Seminars.

National and international relations

University of Porto (Portugal). Department of Engeharia Electrotecnica e de Computadores.
Instituto de Engenharia de Sistemas e Computadores (Porto, Portugal). Power Systems Unit.
University of California (Sacramento, USA). Department of Electrical and Electronic Engineering.