
Curriculum Vitae

Stavros A. Papathanassiou

*Electrical Engineer, PhD
Professor NTUA*

Personal & Contact Information

Date of birth: 4-3-1968

Family status: Married, two children

Business address: National Technical University of Athens (NTUA)
School of Electrical and Computer Engineering,
Electric Power Division
9, Iroon Polytechniou str., 157 80 Athens, Greece
Tel. +30 210 7723658, Fax +30 210 7723593

Home address: 13B, Davaki str.
151 21 Pefki, Athens, Greece
Tel. +30 210 8027056
Mobile tel. +30 6944 598557

e-mail: st@power.ece.ntua.gr , stavrospapath@gmail.com

Education

- 1997 **PhD in Electrical Engineering** (wind turbine technology). School of Electrical and Computer Engineering, National Technical University of Athens (NTUA).
- 1991 **Diploma in Electrical and Computer Engineering**, major in Power Engineering, with distinction (grade 9.25/10), National Technical University of Athens (NTUA).

Current Occupation - Professional Experience

- 2002- Faculty member (currently Full Professor) in the Electric Power Division, School of Electrical and Computer Engineering, NTUA. Area of expertise: Renewable energy, distributed generation and electricity storage, distribution networks.
- 1992- Consultant to renewable energy and storage projects (including wind, PV, solar thermal and hybrid stations employing pumped storage or battery energy storage technologies), distribution network, electricity infrastructure and smart grid projects.
- 2012- Consultant to the Hellenic Distribution Network Operator (HEDNO S.A.) on Distribution Network and Non-Interconnected Island regulatory issues, as well as on technical issues related to the integration of RES, DG and storage stations to the network and the isolated island systems.
- 2005- Technical consultant to the International Olympic Committee (IOC), the Olympic Broadcasting Services (OBS) and Olympic Games Organizing Committees on the

power supply infrastructure and energy services for the Olympic Games.

- 2009-2012* Member of the Board of Directors of the Hellenic Transmission System Operator (HTSO) and Market Operator.
- 2002-2009* Technical consultant to the Distribution Division of the Public Power Corporation (PPC S.A., the Greek generation, transmission and distribution utility)
- 2002-2004* Technical consultant to the Athens 2004 Olympics Organizing Committee (ATHOC) on the design and implementation of distribution networks for the electrification of Olympic venues for the Athens 2004 Olympic Games.
- 2000-2002* Electrical engineer for the Network Department of PPC S.A., involved in distribution network design and installation, quality of supply and distributed generation projects.
- 1990-2002* Researcher in the Electric Power Division of NTUA.
- 1997-98* Electrical engineer for the Hellenic Air Force, involved in the design and maintenance of Medium and Low Voltage electrical installations (during military service).
- 1992-94* Technical consultant with the Quality Control Department of distribution transformer manufacturer ELVIM S.A. (Group Schneider).

Technical and Academic Work

- Active involvement in **more than 60 research and consulting projects** since 1990 in the areas of renewable energy (wind, PV, solar thermal), electricity storage, integration of distributed generation to the grid, autonomous island systems, electricity distribution and smart grids.
- **Published work** includes 65 articles in international peer-reviewed scientific journals and more than 130 articles in the proceedings of scientific conferences, mainly in the fields of renewable energy and distributed generation, storage, electricity distribution and smart grids. Published work has received **more than 5000 citations**.
- **Teaching experience** in several courses in the field of electric power engineering (including renewable energy sources, distribution networks, electric machines and power electronics).
- **Supervision** of more than 75 diploma and postgraduate theses, as well as of 8 PhD dissertations (5 completed).

Areas of Involvement and Expertise

He has been involved in consulting and research projects in the following fields (list of recent projects provided at end of document):

- Integration of RES and hybrid stations to **non-interconnected island systems**. Technical and economic studies, operating strategies, station and system management, market integration, energy studies required for licensing/permitting etc. Special focus on **hybrid (RES-storage) and solar thermal power plants**.
- Issues related to the **PPA and Connection Agreements** of RES and hybrid power stations.
- Analysis and design of **autonomous systems with very high RES penetration** (autonomous renewable-fed desalination plants, “green islands”, isolated installations).

- Design, analysis, sizing and techno-economic studies for **RES stations** (wind, PV, solar thermal).
- **Technology and applications of storage.** Feasibility, sizing and technical studies for **hybrid stations in non-interconnected islands**, including storage facilities of different technologies (pumped storage and batteries of different types).
- **Interconnection of RES and DG stations** to the power system. Feasibility studies, technical design, special purpose studies (power quality, short circuits, protection etc.).
- **Dynamic/transient analysis** of RES stations and power systems with high RES penetrations.
- Transmission and distribution **network technical issues:** Equipment selection, sizing and specification, standardization, electric and magnetic fields of equipment and installations (involving measurement campaigns for HV lines and substations), earthing, calculation of losses etc.
- **Power quality studies** in networks and installations, involving extensive measurement and analysis.
- Technology, analysis, sizing and feasibility studies for **AC and DC interconnections** of offshore wind farms and island systems.
- Design and analysis of **special purpose networks** and installations of **very high resilience** levels.
- **Development of Codes** for distribution networks, wind power and non-interconnected island systems.
- **Power electronics and control** for RES and storage installations.
- **Smart grid technologies**, such as active distribution networks, energy control centres, automated metering infrastructure, FACTS-HVDC, microgrids etc.
- Grid integration of **electric vehicles**.

As a member of the Board of Directors of the Hellenic Transmission System Operator and Market Operator, he dealt with issues related to:

- Transmission system planning and operation.
- System and market integration of RES generation.
- Electricity market operation.
- Cross-border interconnections and trading.

Additional Information

- Senior Member of the IEEE (Power Engineering, Industry Applications, Industrial Electronics and Power Electronics Societies), member of CIGRE and the Technical Chamber of Greece.
- National representative to the CIGRE Study Committee SC6 – Distribution Systems and Dispersed Generation.
- Secretary of the CIRED Greek National Liaison Committee.
- Member of the Board of the Greek CIGRE Committee.
- Participation in several CIGRE Task Forces, dealing with distributed generation and storage. Convenor of CIGRE WG C6.24 “Capacity of Distribution Feeders for Hosting DER”.

- Recipient of the CIGRE Technical Committee Award 2013.
- Reviewer for scientific journals in electric power engineering (IEEE Transactions, IET Proceedings, Elsevier Journals etc.), as well as for several conferences in the field. Recipient of Reviewer Certificate of Excellence from the Elsevier Journals *Electric Power Systems Research* and *Renewable Energy*.
- Evaluator of research, development and demonstration proposals and projects for national and international programmes.
- National representative to the Mirror Group of the Technology Platform «Electricity Networks for the Future – SMARTGRIDS» of the European Union.

Recent Research and Consulting Projects

- Energy yield, feasibility and technical studies for hybrid stations (wind/PV and pumped or battery energy storage), solar thermal power plants and other RES stations (wind and PV); applications of storage to non-interconnected island systems. (Several projects awarded by private investors and power producers).
- “Design of the energy supply system and development of a management policy for the Green Island Aghios Efstratios” (awarded by the Centre for Renewable Energy Sources and Energy Efficiency - CRES)
- “Support for the establishment of operational electricity markets on the Greek non-interconnected islands – TADNI” (awarded by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ))
- “Energy metering and deviations algorithms for hybrid RES-storage stations operating in island systems” (awarded by the DNO & Island System Operator - HEDNO S.A.)
- “Development of a new pricing framework and tariffs for hybrid power stations in Island Systems” (awarded by the Regulatory Authority for Energy - RAE)
- “Technical and economic evaluation methodology for island interconnection projects” (awarded by RAE)
- “Methodological and Algorithmic Infrastructure for the Management of Non-Interconnected Island Electrical Systems” (several projects awarded by the DNO & NII Operator - HEDNO S.A.)
- «Update of the Techno-economic Feasibility Study for the Green Island “Aghios Efstratios”» (awarded by CRES)
- “Anticipated benefits, feasibility and deployment paradigms of electricity storage in non-interconnected island systems” (commissioned by TERNA Energy S.A.)
- «Support to the Non-Interconnected Island System Operator and to the Distribution Network Operator on various technical and regulatory issues» (several projects awarded by the DNO & NII Operator - HEDNO S.A.)
- «Determination of optimal management strategies for the Non-Interconnected Islands and development of energy control infrastructure» (awarded by the NII Operator - HEDNO S.A.)
- “RES penetration potential in the non-interconnected islands of the Aegean Sea” (commissioned by Siemens S.A.)

- «Technical consultant to PPC Renewables S.A. for the hybrid wind-pumped storage power station of Ikaria» (awarded by PPC Renewables S.A.)
- «Technical consultant to the Non-Interconnected Island System Operator for the integration of the hybrid wind-pumped storage power station of Ikaria to the island's power system» (awarded by the NII Operator - HEDNO S.A.)
- «Determination of RES penetration margins for all Non-Interconnected Island Systems» (awarded by the NII Operator - HEDNO S.A.)
- «Support to HEDNO S.A. in the development of the new Distribution Network Operating Code» (awarded by the DNO - HEDNO S.A.).
- «Analysis of wind and PV penetration margins in the power system of Cyprus» (Awarded by the Regulatory Authority for Energy of Cyprus).
- «Development of new SiC transistors and application to a PV inverter» (awarded by GSRT).
- “Smart Distribution System Operation for Maximizing the Integration of Renewable Generation (SUSTAINABLE)” (FP7-ENERGY-2012-1-2STAGE Project)
- «Development and evaluation of alternative proposals for the operation and pricing of pumped storage plants in the Hellenic Power System» (awarded by the Regulatory Authority for Energy).
- « Maximizing RES penetration in the electricity generation mix of Rhodes over a midterm horizon» (awarded by The Heinrich Böll Stiftung and The Green Institute).
- «Development of a technical evaluation framework for the interconnection of small wind turbines to the network» (awarded by DNO - HEDNO S.A.).
- «Development of a National Programme for the Exploitation of the Off-Shore Wind Potential in the Aegean» (awarded by GSRT).
- «Parametric Investigation of RES Penetration Potential and Management of RES Stations in the Islands of Crete and Rhodes» (awarded by RAE).
- «Technical Consulting to DAFNI for the Implementation of Smart Grid Infrastructure in Aegean Sea Islands» (European Investment Bank ELENA Project).
- «Evaluation of PV and Wind Penetration Potential to the Non-Interconnected Islands on a 5-year Horizon» (awarded by PPC/Island Department).
- «MERGE: Mobile Energy Resources in Grids of Electricity» (FP7-ENERGY-2009-7.3.3 Project).
- «Investigation of the Applicable Tariffs for Hybrid Power Stations in Non-Interconnected Islands» (awarded by RAE).
- «Techno-economic Feasibility Study for the Green Island “Aghios Efstratios”»: Generation, Storage and Energy Management» (awarded by CRES/GSRT).
- «Techno-economic and Energy Study for the Hybrid Power Station of Ikaria» (awarded by PPC Renewables S.A.).
- «Update of the Strategic Study for the Interconnection of Autonomous Island Networks to the Mainland Power System» (awarded by RAE).
- «Strategic Study for the Interconnection of Autonomous Island Networks to the Mainland Power System –Preliminary Investigation» (awarded by the RAE).
- «Analysis of PV Station Energy Loss Factors» (awarded by PPC Renewables S.A.).

- «PV Penetration Potential to the Non-Interconnected Island Systems» (awarded by the RAE).
- «Grid-Code Technical Requirements for the Wind Power Stations» (awarded by the RAE).