

Curriculum Vitae

Dr Emmanuel S. Karapidakis
Electrical and Computer Engineer

Dean - School of Engineering

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1. Studies

1.1 Academic Education

- 9/1997: *Diploma in Electrical and Computer Engineering*
National Technical University of Athens (NTUA)
- 10/2003: *PhD Thesis, entitle «Contribution of Computational Intelligence for on-line Dynamic Security Assessment of Power Systems with high RES Penetration»*
Department of Electrical and Computer Engineering
National Technical University of Athens (NTUA)

2. Professional Experience

2.1 Professional Carrier

- 2020 - Today: *Director*
Institute of Energy, Environment and Climate Change
University Research Centre, HMU
- 2021 - Today: *Professor*
Department of Electrical & Computer Engineering
Head of "Energy Systems" Post Graduate Master Degree Program
Director of Power System Lab
- 2012 - 2021: *Associate Professor*
Department of Electrical & Computer Engineering
- 2005 - 2012: *Assistant Professor*
Technological Educational Institute of Crete
Team Leader of Renewable Energy Sources Section
- 2003 - 2005: *Evaluation & Implementation Manager*
ANK Company for Support & Development of Cretan Enterprises Ltd
- 2001- 2002: *Military Service as Air-Forces T-T Engineer.*
- 1997- 2001: *Research Assistant*
Institute of Communication and Computer Systems
National Technical University of Athens

2.2 EU Projects Experience

1. Participation from 2/1/1997 to 31/5/1999 to the main researching group of the European financed project, entitle «**Advanced Control Advice for Power System with large scale Integration of Renewable Energy Sources**», Project JOR3-CT96-0119.
2. Participation from 1/3/2000 to 17/4/2001 to the main researching group of the European financed project, entitle «**MORE CARE**», Project code - 63/262.
3. Participation from 1/8/1999 to 30/9/1999 to the main researching group of the European financed project, entitle «**Electricity Tariffs and Embedded Renewable Generation**», Project code - 63/215.
4. Participation from 2/6/1999 to 31/7/1999 to the main researching group of the European financed project, entitle «**Lighting Protection of Wind Turbines – Further Work**», Project code - 63/228.
5. Participation from 23/6/2000 to 31/10/2000 to the main researching group of the European financed project, entitle «**Dissemination of the Advance Control Technologies for Isolated Power Systems with Increased RES Penetration**», Project code - 63/252.
6. Supervision Manager from 1/9/2006 to 31/8/2007 to the subcontract of Technological and Educational Institute of Crete in research project «**Encouragement, Growth of Business Spirit and Cultivate Enterprise at TEIC**» K.Π.3.1.2.B of EPEAEK II, MIS99479 - SAE2006SE24530065.
7. Scientific Manager from 1/9/2006 to 31/3/2008 to the subcontract of Technological and Educational Institute of Crete in research project “PABET-NE” project code 05ΠΒΚ09 and title «**Development of advance energy management system, electric energy storage and optimization of total production**».
8. Participation from 01/6/2006 to 31/10/2007 to the main researching group of the European financed project, entitled «**Development of an interactive vocational Web training tool for the take-off of the building energy performance**», Project code EEBD - SAVE Programme, Intelligent Energy Europe EIE/2003-143.
9. Coordinator and Scientific Manager from 1/9/2008 to 31/8/2011 Intensive Summer Courses of the European financed project, entitled «**Small Scale Renewable Energy Sources and Energy Saving**» implemented by five (5) European Countries (UK, Germany, Romania, Czech Republic, Greece) within the Intensive Programmes (ERASMUS) (100k€).
10. Scientific Manager from 1/9/2010 to 31/8/2011 of the European financed project, entitled «**PV-LaSIREs: PV Large Scale integration in Island grids with currently high RES penetration**» within bilateral (Greece-France) project of PV ERA NET (150k€).
11. Scientific Manager from 4/1/2010 to 31/12/2010 of the Regional (Technical Chamber of Crete) financed project, entitled «**Sort-term and Long-term Benefits and Impacts of Large-Scale RES Installations in Crete's Power System**»(50k€).
12. Scientific Manager from 1/5/2010 to 31/4/2013 of Intelligent Energy for Europe IEE - SAVE, entitle «**REE_TROFIT - Training on Renewable Energy solutions and energy Efficiency in reTROFITting**» implemented by six (6) European Countries (200k€).
13. Scientific Manager & Project Coordinator from 1/2/2013 to 31/4/2016 of **National Archimedes Programme**, entitle «**Research and Development of a real time Energy and Power Management for Crete's Power System with High RES Penetration**» implemented by three (3) universities' collaboration (100k€).
14. Scientific Manager & Project Coordinator from 1/11/2016 to 31/10/2020 of **KA2 Sector Skills Alliances**, entitle «**Geothermal & Solar Skills in Continuous Vocational Educational Training**» implemented by four (4) European Countries and (12) twelve partners (1.3M€).

Since August of 2003, he is referee and reviewer of Greek submitted proposals within, Financial Incentives for Implementation of Private Energy Investments for Conservation-Cogeneration-Substitution of Conventional Energy and Renewable Energy Sources. Additionally, he was Investment Implementation Inspector since March of 2003 till end of 2005 for the subsidized programs of Crete region (3rd Community Operational Framework Programme "Competitiveness").

2.3 Construction Engineering Experience

He has participated in several construction projects with significant investment interest and high budgets.

During the cooperation with «Consulting Engineering A.D.K. Ltd» company:

- ✓ Evaluation of Electromechanical Studies for ERRIKOS-DINAN pile, (1998).
- ✓ Electromechanical Study of storehouses at Basiliadis seaport, Piraeus, (1999).
- ✓ Participation to technical consulting project of Aposelemi's penstocks, Heraklion Crete, (1999).
- ✓ Participation to construction study of "FERRON-KASTANEON" National Road, (1999).
- ✓ Preliminary construction study editing for student dormitories of university of Alexandroulopis, Thrace, (2000).
- ✓ Participation to construction study of Karpathos Aerodrome Ancillary Services, (2001).
- ✓ Participation to construction study of Athletic Settlements "ELLINIKOY", (2002).
- ✓ Participation to follow-up construction study of Kalamata's train station, (2003).

During the cooperation with «AKTER Ltd» construction company:

- ✓ Participated to construction study of new Hyper-Market with underground garage, Petrou Ralli Str, Rendi region, (2002).
- ✓ Participated to construction study of Hangars at El. Benizelos Airport, (1999).
- ✓ Participated to the follow-up construction study of Athens Music Palace – Second Phase, (2002).
- ✓ Participated to construction study of Olympic Settlements for modern pentathlon at Goudi region, (2002).

2.4 Consulting Engineering Experience

During the cooperation with «Concept Ltd» company, he has implemented several private consulting projects, which have been financed by the following national programs:

- ✓ National Development Laws (N.2601/98 & N.3299/2004)
- ✓ National Regional Corporate Programs 2000 – 2006, 2007 - 2013
- ✓ Action 2.9.2, «Funding Support of Environment Plans»
- ✓ Action 2.7.1, «Business plan of very small and small sized enterprises»
- ✓ Action 2.1.3, «Financial incentives for the implementation of private energy investments for Conservation-Cogeneration-Substitution of conventional energy and Renewable Energy Sources»
- ✓ Action 7.3.4, «Development and Promotion of new materials, new technologies and new uses of raw mineral resources»

3. Scientific Groups – Chambers

1. *Member of Technical Chamber of Greece (T.E.E.) since February of 1998, (member ID 78722).*
2. *Member of Institute of Electrical and Electronics Engineers (IEEE) since December of 1999 (member ID 41263507).*
3. *Energy Investments Referee, since August of 2003, Ministry of Development, Greece.*
4. *Chairman of «Energy & New Technologies» committee for East Crete region of Technical Chamber.*
5. *Member of North – Eastern Europe Energy Institute IENE.*

4. Software Knowledge

- *PowerWorld, Power Systems Simulator (version 21).*
- *RETScreen .*
- *Matla).*
- *LEAP, Long-range Energy Alternative Planning software*
- *HOMER, Software for microgrid and distributed generation power system design and optimization*
- *Computer Design Systems (CAD), AutoCAD.*
- *Professional experience of Visual Basic.*

5. Published Scientific Work

Affiliation - National Technical University of Athens

- 5.1. J.A. Pecas Lopes, N. Hatziargyriou, M. Vasconcelos, E. Karapidakis and J.Fidalgo, (1999). **On-Line Dynamic Security Assessment of Isolated Networks Integrating Large Wind Power Production**. Wind Engineering, Vol. 23, No. 2, pp. 107-117.
- 5.2. A.Gigantidou, J.Stefanakis, E.Karapidakis and N.Hatziargyriou, (1999). **CARE Control Advice for Renewable Energy Power Grids: Installation and Evaluation**. Wind Engineering, Vol. 23, No. 2, pp. 119-127.
- 5.3. N.D.Hatziargyriou and E.S.Karapidakis, (2002). **Machine Learning Applied to Power System Dynamic Security Assessment**. INTELLIGENT SYSTEMS, Control and Electric Power Systems, Volume VI, Edited by Cornelius T. Leondes, CRC Press, pp 35 - 62, [book chapter].
- 5.4. E.S.Karapidakis and N.D.Hatziargyriou, (2002). **On-Line Preventive Dynamic Security of Isolated Power Systems Using Decision Trees**. IEEE Transactions on Power Systems, Vol. 17, No. 2, pp. 299 - 304.

Affiliation - Technological Educational Institute of Crete

- 5.5. E.S.Karapidakis, (2007). **Machine Learning for on-line Frequency Estimation,** Applied Soft Computing Journal, Vol. 7, pp. 105-114.
- 5.6. A.A.Tsave and E.S.Karapidakis, (2008). **Landfill Gas (LFG) Plants: An application on energy regarding environmental impact**. Journal of Optoelectronics and Advanced Materials, Vol. 10, No. 5, pp. 1277 - 1281.
- 5.7. D.Kolokotsa, A.Psomas, E.S.Karapidakis, (2009). **Urban heat island in southern Europe: The case study of Hania, Crete**. Solar Energy 83 (10), pp. 1871-1883.
- 5.8. E.S.Karapidakis, (2009). **Operation Management on Autonomous Power Systems**. Lecture Notes in Electrical Engineering, Vol. 28, Springer Verlag, pp 815 - 822.
- 5.9. E.S.Karapidakis, (2009). **Wind Power Impact on Power System Dynamic Performance**. Wind Power, Edited by S.M.Muyeen, Kitami Institute of Technology, Kitami, Hokkaido, Japan, ISBN 978-953-7619-81-7, [book chapter].
- 5.10. K.Papadogiannis, E.S.Karapidakis, N.Hatziargyriou, (2009). **Cost Allocation of Losses in Autonomous Power Systems with High Penetration of RES**. WSEAS Transactions on Power Systems, Issue 6, Volume 4, pp 210-220.
- 5.11. Y.Katsigiannis, P.Georgilakis, E.S.Karapidakis, (2010). **Multiobjective Genetic Algorithm Solution to the Optimum Economic and Environmental Performance Problem of Small Autonomous Hybrid Power Systems with Renewables**. IET Renewable Power Generation 4 (5), pp. 404-419.
- 5.12. E.S.Karapidakis, A.A.Tsave, P.M.Soupios, Y.A.Katsigiannis, (2010). **Energy efficiency and environmental impact of biogas utilization in landfills**. Int. J. Environ. Sci. Tech., 7 (3), 599-608.
- 5.13. Y.A.Katsigiannis, P.S.Georgilakis, E.S.Karapidakis, (2010). **Genetic algorithm solution to optimal sizing problem of small autonomous hybrid power systems**. Lecture Notes in Computer Science 6040 LNAI, pp. 327-332.
- 5.14. E.S.Karapidakis, Y.Katsigiannis, N.Zografakis, **"Sustainable Power Generation Expansion of Crete Island,"** Scientific Bulletin of the Electrical Engineering Faculty, 3 (14), pp. 78-85.
- 5.15. E.S.Karapidakis, Y.A.Katsigiannis, P.S.Georgilakis, E.Thalassinakis, (2011). **Generation expansion planning of Crete power system for high penetration of renewable energy**

- sources.** Materials Science Forum, Vol. 670, pp 407-414.
- 5.16. V.Katsioulis, E.S.Karapidakis, M.Hadjinicolaou, A.Tsikalakis, (2011). **Wireless monitoring and remote control of PV systems based on the ZigBee protocol.** Advances in Information and Communication Technology 349 AICT, pp. 297-304.
 - 5.17. A.Annuk, P.Pikk, E.Kokin, E.S.Karapidakis and T.Tamm, (2011). **Performance of Wind-solar integrated grid connected energy system.** Agronomy Research 9 (2), pp. 273-280.
 - 5.18. E.S.Karapidakis, A.Tsikalakis, Y.Katsigiannis, M.Moschakis (2012). **Impact of increased RES generation on power systems dynamic performance.** Materials Science Forum, Volume 721, pp. 185-190.
 - 5.19. Y.A.Katsigiannis, E.S.Karapidakis, A.G.Tsikalakis, E.G.Maravelakis (2012). **Techno-economic and Environmental Evaluation of Large Scale PV Integration in Greece.** Materials Science Forum, Volume 721, pp. 287-292.
 - 5.20. Emmanuel S. Karapidakis and Antonios G. Tsikalakis. (2012). **Network Stability under High Wind Power Penetration Wind.** Handbook of Wind Power Systems, Springer, [Book Chapter].
 - 5.21. E.S.Karapidakis, N.Zografakis, E.Thalassinakis, (2012). **Sustainable Energy Planning for Autonomous Power System of Crete.** Euro-Asian Journal of Sustainable Energy Development Policy.
 - 5.22. P.Georgilakis, Y.Katsigiannis, E.Karapidakis, (2012). **Hybrid Simulated Annealing - Tabu Search Method for Optimal Sizing of Autonomous Power Systems with Renewables.** IEEE Transactions on Sustainable Energy, 3 (3), pp. 330-338.
 - 5.23. M.N. Moschakis, V. Dafopoulos, E.S. Karapidakis, A.G. Tsikalakis (2012). **Analytical Assessment of DC Components Generated by Renewable Energy Resources with Inverter-Based Interconnection System due to Even Harmonics.** ISRN Renewable Energy, Vol. 12, pp. 1-12.
 - 5.24. M. N. Moschakis, V. V. Dafopoulos, I. G. Andritsos, E. S. Karapidakis, J. M. Prousalidis, (2013). **The Effect of Transformer's Vector Group on Retained Voltage Magnitude and Sag Frequency at Industrial Sites Due to Faults.** International Journal of Electrical and Computer Engineering, 7 (7), pp. 835-841.
 - 5.25. Moschakis, M., Prousalidis, J., Tsikalakis, A.G., Karapidakis, E.S. (2014). **Effect of power line conductor resistance-to-reactance ratio on voltage magnitude during two-phase faults at electric energy grids.** Materials Science Forum, 792, pp. 316-321.
 - 5.26. Karapidakis, E., Georgilakis, P., Tsikalakis, A.G., Katsigiannis, Y.A., Moschakis, M. (2014). **Dynamic performance assessment of wind energy pump storage units in Crete's power system.** Materials Science Forum, 792, pp. 305-310.
 - 5.27. Y. A. Katsigiannis, E. S. Karapidakis, A. G. Tsikalakis, A. Katsamaki (2014). **Large-scale energy storage and dynamic performance of the autonomous power system in Crete Island: A review of the literature.** International Journal of Energy, Vol. 8, pp. 60-70.
 - 5.28. Syllignakis J., Panagiotakopoulos P., Karapidakis E. (2016). **Automatic Speed Controller of a DC Motor Using Arduino for Laboratory Applications.** Engineering and Industry Series, Trivent Publishing, Volume Power Systems, Energy Markets and Renewable Energy Sources in South-Eastern Europe, pp. 351-364.
 - 5.29. Lamas G., Syllignakis J., Karapidakis E. (2016). **The Study and Evaluation of the 3phase Induction Motor Controlled by an Inverter to Identify Power Losses and Energy Saving.** Engineering and Industry Series, Trivent Publishing, Volume Power Systems, Energy Markets and Renewable Energy Sources in South-Eastern Europe, pp. 351-364.
 - 5.30. Skounakis E, Moutsoula S, Makris D, Bolanakis N, Kandounakis E, Konstantaras A, Karapidakis E, Maravelakis E (2016). **A Cost-effective Standalone Multisensory System for Energy Consumption and CO₂ Emissions Control in Smart-Homes via Internet and Mobile Devices, Using a Network of Arduino Microcontrollers.** Engineering and Industry Series, Trivent Publishing, Volume Power Systems, Energy Markets and Renewable Energy Sources in South-Eastern Europe, pp. 319-332.
 - 5.31. Syllignakis J., Sergis A., Orfanoudakis G., Karapidakis E., Kanellos F. (2016). **Laboratory Tests, Modeling and the Study of a Small Doubly-Fed Induction Generator (DFIG) in**

- Autonomous and Grid-Connected Scenarios.** Engineering and Industry Series, Trivent Publishing, Volume Power Systems, Energy Markets and Renewable Energy Sources in South-Eastern Europe, pp. 309-318.
- 5.32. Katsigiannis, Y., Annuk, A., Karapidakis, E.S. (2017). **Contribution of pumped hydro energy storage for more RES utilization on autonomous power systems.** Agronomy Research, 15 (4), pp. 1621-1628.
- 5.33. S. Yfanti, E. Karapidakis, M. Apostolaki, N. Sakkas (2019). **Binding EU with national energy policies for sustainability: A trans-boundaries comparative study on public buildings' energy renovation path.** Journal of Multidisciplinary Engineering Science and Technology, 6 (7), pp. 10421-10431.

Affiliation - Hellenic Mediterranean University

- 5.34. P. Spanoudakis, N. Tsourveloudis, L. Doitsidis, E. Karapidakis (2019). **Experimental Research of Transmissions on Electric Vehicles' Energy Consumption.** Energies, 12 (3), pp. 38
- 5.35. N Bouzounierakis, Y Katsigiannis, K Fiorentzis, E Karapidakis (2019). **Effect of Hybrid Power Station Installation in the Operation of Insular Power Systems.** Inventions, 4 (3), pp. 388
- 5.36. K Fiorentzis, A Tsikalakis, E Karapidakis Y Katsigiannis, G Stavrakakis (2020). **Improving Reliability Indices of the Autonomous Power System of Crete Island Utilizing Extended Photovoltaic Installations.** Energies, 13 (1), pp. 64
- 5.37. N Bizon, M Raceanu, E Koudoumas, A Marinoiu, E Karapidakis (2020). **Renewable/Fuel Cell Hybrid Power System Operation Using Two Search Controllers of the Optimal Power Needed on the DC Bus.** Energies 13 (22), 6111
- 5.38. K Fiorentzis, Y Katsigiannis, E Karapidakis (2020). **Full-Scale Implementation of RES and Storage in an Island Energy System.** Inventions 5 (4), 52
- 5.39. S Yfanti, N Sakkas, E Karapidakis (2020). **An Event-Driven Approach for Changing User Behaviour towards an Enhanced Building's Energy Efficiency.** Buildings 10 (10), 183
- 5.40. K Fiorentzis, E Karapidakis, A Tsikalakis (2020). **Cost Analysis of Demand-Side Generating Assets Contribution to Ancillary Services of Island Power Systems.** Inventions 5 (3), 34
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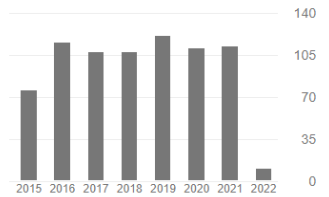
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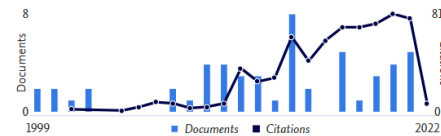
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