FELIPE GONZÁLEZ VENEGAS

Ph.D. in Electrical Engineering
CentraleSupélec, Université Paris-Saclay – Stellantis
Phone: +33 6 16 12 54 83
E-mail: felipe.gonzalezvenegas@centralesupelec.fr
fgonzalezvenegas@gmail.com

RESUME

I am a power system engineer. I hold a PhD in Electrical Engineering from Université Paris-Saclay and Masters' degrees in Electrical Engineering, from Universidad de Chile and CentraleSupélec.
I'm interested in tackling the challenges of the energy transition, in particular the modeling and simulation low carbon multi-energy systems (electricity, transport, heating), and related markets and regulation.

EDUCATION

PhD in Electrical Engineering at CentraleSupélec, Université Paris-Saclay, in collaboration with Stellantis within the Armand Peugeot Chair on the Economy of Electromobility. *2018-2021*
Defense: 9 July 2021
Thesis: "Value of flexibility of electric vehicle fleets for the optimal management of distribution networks"
Fields: Electricity power systems, Energy economics, Modeling, Optimization
Advisors: Marc Petit, Yannick Perez
CentraleSupélec is part of Université Paris-Saclay, a cluster of top Universities and *Grandes Ecoles* responsible for 15% of French research.
Stellantis is the third largest car manufacturer in the world and is on the top three patent filers in France.

MSc in Electrical Engineering at Universidad de Chile, Chile *2010-2016*
Subjects: Energy systems optimization and analysis, electricity markets,
MSc Thesis (Distinction): "Optimal Take-or-Pay LNG supply for hydrothermal electricity systems"

Engineering Degree (equivalent to MEng) at CentraleSupélec (Grande Ecole), France *2011-2014*
Subjects: Mathematics, physics, economics, electronics, mechanics.
Double degree program between CentraleSupélec and Universidad de Chile

AWARDS AND FELLOWSHIPS

PhD scholarship from Armand Peugeot Chair "Economy of Electromobility" *2018-2021*
Armand Peugeot Chair is led by CentraleSupélec and ESSEC Business School, and sponsored by Stellantis

Best graduated of Electrical Engineering, Universidad de Chile *2016*

Eiffel Scholarship beneficiary to carry out a Masters degree in France *2011-2014*

PROFESSIONAL EXPERIENCE

SPEC Energy Consulting, Chile *2017*
Consultant on projects on renewable energy integration and operational analysis of power systems.
Developer of optimization models for the power system.

Energy Center, Physical and Mathematical Sciences Faculty. Chile *2016*
Project for the Chilean Independent System Operator on a division of the power system in reserve zones.

RTE, France *Sept. 2013-Jan. 2014*
Intern on a study of the techno-economic impacts of a massive burying of HV power lines.

INVITED TALKS

"EV fleet participation in distribution flexibility tenders, an international comparison", Chaire European Electricity Markets seminar on "Financing Long-Term Investment in Hybrid Electricity Markets". 16th February 2021.
"EV fleet participation in distribution flexibility tenders, an international comparison", French Association of Energy Economists Webinar on "New flexibility actors for the power systems". 10th November 2020.
"Participation of EV fleets in distribution flexibility tenders", IEA - Hybrid & Electric Vehicle Technology Collaboration Programme, Task 39 & Task 43 Joint Workshop on "Electric Vehicle: Grid and Market Integration", Online Webinar, 10th June 2020.
"Electric Vehicle load modeling at a distribution substation", CIRED Electric Vehicle Modeling Working Group, Brussels, February 2020
"Can DERs participate in emerging local flexibility tenders?", Conference on Mobility Challenges, Paris, Dec. 2019
"Challenges for the provision of flexibility to distribution systems by electric vehicles", Presentation at the Chilean Ministry of Energy, January 2019.
"Challenges for the provision of flexibility to distribution systems by electric vehicles", Conference on Mobility Challenges, Paris, December 2018

TEACHING

Lectures for MEng. students at CEA-INSTN *2020 & 2021*
Energy Economics (9 h in 2020, 6h in 2021)

Tutorial classes for Bachelor and MSc. students at Universidad de Chile *2015*
Electricity power systems and equipment
Risk and reliability of electric systems

LANGUAGES AND TECHNICAL SKILLS

Spanish (Native), English (Fluent), French (Fluent), Portuguese (Intermediate)
Programming in Python, MATLAB, including optimization tools and data analysis.

ASSOCIATIVE ACTIVITIES

Member of the student board of the French Association of Energy Economics (FAEE) *2019-Present*
President of the PhD student association of CentraleSupélec

PUBLICATIONS

Journal Papers
[1] F. Gonzalez Venegas, M. Petit, Y. Perez. "Active integration of electric vehicles into distribution grids: barriers and frameworks for flexibility services", Renewable & Sustainable Energy Reviews, Vol. 145, July 2021, 111060. https://doi.org/10.1016/j.rser.2021.111060
[2] F. Gonzalez Venegas, M. Petit, Y. Perez. "Participation of electric vehicle fleets in local flexibility tenders: Analyzing barriers to entry and workable solutions". (*Under review at Energy Policy*)
Available as Working paper of EUI-FSR, February 2021. https://fsr.eui.eu/publications/?handle=1814/69860
[3] F. Gonzalez Venegas, M. Petit, Y. Perez. "Plug-in behavior of electric vehicles users: insights from a large-scale trial and impacts for grid integration studies". (*Under review at eTransportation*)
Peer-reviewed International conference papers – published
[4] F. Gonzalez Venegas, M. Petit, Y. Perez. "Electric Vehicles as flexibility providers for distribution systems. A techno-economic review," *25th International Conference on Electricity Distribution (CIRED)*, Madrid, June 2019.
[5] F. Gonzalez Venegas, M. Petit, Y. Perez. "Can DERs fully participate in emerging local flexibility tenders?," *16th International Conference on the European Energy Market (EEM)*, Ljubljana, September 2019
[6] F. Gonzalez Venegas, M. Petit, Y. Perez. "Impact of non-systematic electric vehicle charging behaviour on a distribution substation," *IEEE PES Innovative Smart Grid Technologies Europe (ISGT-Europe)*, Bucharest, October 2019.

Non peer-reviewed International conferences

[7] F. Gonzalez Venegas, M. Petit, Y. Perez. "Quantifying the participation of EV fleets in local flexibility tenders," *CIRED Workshop How to Implement Flexibility in the Distribution System?*, Berlin, September 2020

[8] F. Gonzalez Venegas, M. Petit, Y. Perez. "Ensuring flexibility delivery: the role of penalties on long-term distribution flexibility tenders", 1st IAEE online conference, June 2021.

Peer-reviewed International conference papers – accepted

[8] F. Gonzalez Venegas, S. Meunier, C. Protopapadaki, M. Petit, D. Salaens, Y. Perez. "Impact of distributed energy resources and electric vehicle smart charging on low voltage grid stability," *26th International Conference on Electricity Distribution (CIRED)*, Geneva, June 2021.

REFERENCES

Marc Petit
Professor, CentraleSupélec
E-mail: marc.petit@centralesupelec.fr

Yannick Perez
Professor, CentraleSupélec
E-mail: yannick.perez@centralesupelec.fr

Rodrigo Moreno
Professor, Universidad de Chile
E-mail: rmorenovieyra@ing.uchile.cl