

Curriculum Vitae Sergio Ugarte

Name : **Ugarte, Sergio**
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Date of Birth : August, 4, 1969
Nationality : Spanish

KEY QUALIFICATIONS

- Ability to manage large scale, complex and multi-discipline projects
- Sound judgment and solid strategic planning abilities in the energy sector.
- Bold management of regulatory policies and legislations
- Solid organization skills and strong cross-cultural experience

Dr. Sergio Ugarte is Managing Director and co-founder of SQ Consult B.V. and works in international consulting on energy and sustainability since 1990. He holds a PhD in Mechanical Engineering with minors in Economics and Mathematics from Northeastern University in the United States. His long-term career in the energy sector among others includes being Vice-Minister of energy in Peru where he established and supervised the national renewable energy strategy. Later in Europe, he joined the European consultancy firm Ecofys as Bioenergy Manager for Spain, Portugal and Latin America and later as international Director for the Energy Generation Strategies Division, a position from where he led the bioenergy sustainability policy work and investigation on different voluntary sustainability systems; among others he was the Project Director for the EC project on the implementation guidelines for the sustainability regulation. Sergio has advised on bioenergy business strategies and bioenergy sustainability policies to large international private clients such as Abengoa Bioenergy, Endesa, Shell, Electricité de France, IATA, Marquard & Bahls, CEMEX, ED&F MAN group, etc, and to governments and multilateral institutions such as NL Agency (Netherlands), GIZ (Germany), CNE (Spain), IADB, AfDB and UNDP. Sergio is a regular presenter and chairman of several specialised international conferences and events.

EDUCATION

1987 -1992 Mechanical Engineering, National University of Engineering, Lima, Peru
1998-2000 Master of Science in Mechanical Engineering, Major in Thermofluids, Northeastern University, Boston, USA
2000 – 2004 PhD in Mechanical Engineering, Minors in Mathematics and Economics, Northeastern University, Boston, USA

LANGUAGES

Spanish	Mother tongue
English	Fluent
French	Good
German	Good
Catalan	Fluent
Chinese (Mandarin)	Basic knowledge

WORK EXPERIENCE

2009- to present SQconsult BV, Netherlands and Spain

Managing Director and co-Founder

Responsible for the international business development, profits and losses of consultancy for energy generation and sustainability.

Selected projects:

- Senior Expert: Assessment of direct and indirect effects regarding US waste wood chains – Inbio Project. Client: NL Agency, 2012 - 2013
- Project Director: Study Incentives for deployment of biojet fuels. Benchmark of policy instruments. Client: IATA, 2012-2013
- Project Director: Design of biofuels legislation for Spain. Client: Comisión Nacional de Energía, 2011-2012
- Project Director: Benchmark of biofuels policies affecting biofuels trade. Client: ED&F MAN, 2011-2012
- External reviewer for country bioenergy policy papers. Client GNESD- UNEP RISOE, 2012
- Project Director: Study on level of assurance of voluntary sustainability certification schemes for biofuels and their inter-relation with country risk. Client: GIZ, 2012
- Project Director: Study of the effectiveness and efficiency of co-regulation (public regulation and private initiatives) on sustainability criteria implementation for bioenergy in the EU. Client: GIZ, 2012
- Project Director: Benchmark of voluntary certification schemes for biofuels sustainability in Europe. Client: NL Agency, 2011-2012
- Senior expert: Framework contract for the evaluation of biofuels sustainability certification schemes for the Dutch government. Client: NL Agency, 2010-2012
- Senior Expert: Development of bioenergy chains factsheets on selected developing countries. Client: NL Agency, 2011-2012.
- Senior Expert: GBEP Indicators pilot study in the Netherlands. Client: NL Agency, 2011-2012.
- Expert: Technical assistance for the sustainability assessment of bioenergy projects in developing countries. Client: NL Agency, 2011-2012
- Project Director: Development of the Energy and Climate Change Strategy for the African Development Bank. Client; AfDB, 2011
- Project Director: National Bioenergy Strategy for Lebanon. Project contemplates resource assessments, competition between energy and food crops, and the design of different sustainability levels based on criteria established in worldwide voluntary sustainability systems. Client: UNDP Lebanon – CEDRO, 2010-2011
- Project Director: Biomass sustainability certification strategy for Electricité de France. Client: EDF Group, 2010
- Project Director: CDM feasibility of international power interconnections projects. Client: IADB and UPME Colombia, 2010 -2011
- Project Director: Sustainable Action Plan review (energy efficiency and renewable energy supply) for the Province of Gipuzkoa, Basque Country, Spain. Client: Diputación de Gipuzkoa, 2010
- Project Director: Capacity assessment and formulation of EU funded technical assistance for capacity building to the regional African Power Pools and to the continental African Forum of Utility Regulators (AFUR) to improve sustainable energy access in the African Continent, EuropeAid, 2010
- Project Evaluator: Second Energy Facility EU for ACP Countries. Evaluating sustainable bioenergy and energy efficiency projects to alleviate extreme poverty and improve conditions for energy access without risking food security. Client: EuropeAid, 2010

- Project Director: Techno-economic feasibility study for the construction of sustainable farms and medium sized jatropha biodiesel plants in the Dominican Republic. Project meets American and European sustainability criteria obligations. Client: Inter-American Development Bank, 2009-2011
- Project Technical Director: Renewable energy development for the Basque Country. Client: Economic and Social Council of the Basque Country. 2010-2011
- Project Director: Procedure for renewable energy tariff calculations for the Government of Peru. Client: COSANAC – OSINERGMIN Peru, 2009
- Project Director: Techno-economic analysis and sustainability traceability of the Spanish biofuel chain. Client: Factor CO2 Ennova, 2009
- Project Director: Sustainable energy supply for the rural town of Beizama in the Basque Country. Client: Diputación de Gipuzkoa, 2010-2011
- Project Director: Support for the validation and registration of CDM-ERH biogas recovery project, heat and electricity generation from effluents ponds in Honduras (2010). Client: UNDP Honduras, 2010

2008- 2009

Ecofys International BV/Ecofys Spain SL, Barcelona, Spain

Division Director, Energy Generation Strategies

Overall responsible of the International Division: Profits and losses with a target value of 3,5MM€ per year in consultancy work, correct project execution, quality of deliverables, new services lines and customer satisfaction. I managed directly 6 managing consultants (either principal experts or market managers) and indirectly through regular projects a pool of 300 consultants around the world. Typical clients: Large European utilities (power generation, transmission and distribution), large biofuel producers, oil companies (producers and traders), energy intensive industries (cement, steel producers among others), national and supranational governments and bodies.

Sergio led the work in Ecofys for:

- Sustainability of biofuels
- Benchmarking of biofuels technologies
- Biomass trade & markets
- Renewable energy and climate change strategies and policies

Major projects:

- Project Director of the European Commission DG-TREN for the implementation of sustainability criteria for the production and trade of biofuels in Europe.
- Project Director: Development of a biofuel business strategy for Ecopetrol, Colombia

2007 - 2008

Ecofys Spain SL, Barcelona, Spain

Sustainable Power & Fuels Manager Spain, Portugal and Latin America

Head of the business unit of BioEnergy (Sustainable Power and Fuels) for Spain, Portugal and Latinamerica. Consultancy addressed to the industry and government needs. Areas of work: Regulation, government relations, feasibility studies, market potential, technology innovation, etc.

Major projects:

- Project Director: International market study of sustainable lignocellulosic biomass for the production of second-generation biofuels production. Project included the resource assessment and the analysis of sustainability level of different regions in the World. Regions studied: EU27, North America, South America and Russia. Client: Abengoa Bioenergy.
- Senior consultant: Worldwide biomass legal and market study of sustainable resource assessment of solid biomass for energy purposes. Client: Large German Oil Trader company (confidential).
- Senior consultant: Global biomass resource assessment study for sustainable biomass for the production of second-generation biofuels. Focus

on Africa and South America Client: Large European oil producer, refining and trading (confidential)

- Project Director: Strategy for biofuel business development and strategy for voluntary sustainability schemes for Colombia. Client: Ecopetrol
- Project Director: Potential for project and business development for the production of biogas, heat and power in different EU countries. Client: Evelop International B.V.
- Project Director. Organic secondary fuels and RDF market study in 10 European countries for the purpose of CO2 emissions reduction. Client: Large worldwide cement producer.
- Project Director: Sustainable biomass and pellets production and trade in Spain and Portugal. Client: BioResource B.V.
- Project Director: Feasibility study for biomass torrefaction for co-firing in coal power plants. Client: Large Utility, confidential.
- Project Director: Small-scale biomass CHP installations feasibility studies > 500 kW. Various clients
- Advisor of the Econcern holding for its activities in Latin America and the Caribbean. Clients: Econcern B.V. OneCarbon B.V.
- Chairman of the regional workshop for the sustainable production, certification and use of biodiesel as energy source in Latin America and the Caribbean. Client: GTZ (Germany)

2005 - 2007

AMBIENSYS SL, Barcelona, Spain

Engineering and R&D Director

Responsible for the development of a pilot plant in Catalonia for the study of several municipal waste sterilization processes and for the study of gasification of different kinds of organic fiber (biomass). Responsible for all Ambiensys technology optimization projects for the treatment of solid waste, their transformation in synthesis gas and its energy conversion in cogeneration processes.

2001 – 2005

NORTHEASTERN UNIVERSITY, Boston, Massachusetts, USA

**Associate Research Scientist in Combustion and Thermodynamics
Graduate and Undergraduate Lecturer for Thermofluids Courses**

Research in engineering in the fields of energy, exhaust gases emission and combustion modeling. Research published in relevant energy journals and proceedings in reputed combustion conferences. Responsible for the School thermodynamics and fluid mechanics laboratories. Instructor for the courses of thermodynamics, fluid mechanics and heat transfer

2000 – 2001

MINISTRY OF ENERGY AND MINING – Peru

Vice Minister of Energy

Supervisor of the Power and oil industry activities in the Country.

- Proposed to the Congress new legislation to establish the national strategy for renewable energy development, with special emphasis on distributed systems of biogas, biomass, biofuels mini hydro power plants, wind and solar plants.
- Established energy independence as main national policy under criteria of sustainability and reduction of environment impact of its activities.
- Conducted an aggressive national electrification plan that increases the national coverage from 69% to 75% in 10 months.
- Promoted a nationwide Energy Efficiency program for the industrial and commercial sectors in Peru.
- Reshaped the gas industry regulatory framework and deregulated the Peruvian energy sector (power and oil) transferring risk management to operators.
- Conducted the privatization of the transmission system and opened the market for hydropower investments through private concessions.

- Supervised compulsory waste management of oil exploitation companies at the end of their operations.
- Coordinated multi-consortiums projects like the Camisea natural gas project, second largest natural gas project in South America.

- 1998 – 1998 COES–SUR, Organization that supervises wholesale trading of Energy, Peru (in cooperation with Alfa Plus consulting)
Head of the Studies Office
 Assessment of the electricity national tariffs for its approval in the Peruvian regulatory entity; developed demand forecasts and proposed procedures for inter-companies transactions of power and energy in the spot market. Supervised power systems studies and studies related to the reliability of the electrical system
- 1992 – 1997 ALFA PLUS CONSULTING, Peru
Energy Sector Manager, 1996-1997
 Developed and managed projects on revenues forecasts for the due diligence processes during the privatization of Peruvian power companies for different international private parties and financial institutions; projects included energy modelling and forecasting (hydropower and gas flow modelling), spot market analysis and pricing and tariff studies. Major clients: ENRON (USA), COASTAL (USA), PSEG (USA), ENDESA (Chile) and ENDESA (Spain). Other projects developed involved issues in post merger integration, evaluation of energy efficiency and renewable energy projects and asset valuations
Project Engineer, 1992-1995
 Performed fifteen large thermal power plants (steam, gas, combined cycles and diesel plants) Tests for effective power and general performance. Developed engineering for thermal and hydro power plants for better efficiency and emissions standards. Elaborated energy conversion projects in the heat industry
- 1995 – 1997 PRONAMACHCS (Government agency for rural development), Peru
Projects National Supervisor - Rural Electrification Department
 Managed a 15MMUS\$ budget and constructed 16 small hydropower plants (bids, acquisition, contracts and construction supervision) serving 40,000 people. Under my led, the department set up a national record in power cost ratios, construction times and community involvement in the projects.
 - Professional stage on hydro power at Electricité de France in cooperation with Hydro Québec, Ontario Hydro and Enel (Italy),
- 1990 – 1993 ENERGY INSTITUTE, Universidad Nacional de Ingeniería, Peru
Research Assistant in energy and power planning
 Research Assistant in energy and power planning. Developed energy and power dispatch models for power planning, and water reservoirs dispatch models for long term operation of hydropower plants

ENERGY CONFERENCES

- “Global Biomass Market Developments” at the European Biomass to Power 2013, Krakow, Poland, 2013
- “Assurance level of certification schemes applied to countries with different sustainability risks” at the final conference of the Global Bio-Pact project - Socio-economic impacts of biofuels and bio-products, Brussels, Belgium, 2013
- Chairman at the Biomass trading for Energy 2012, Amsterdam, Netherlands, 2012
- Chairman at the Global Bioenergy Congress Bio2ME 2012, Amsterdam, Netherlands, 2012
- “EU sustainability policies for the use of biomass in the production of electricity and heat” at the Forestry and Sustainability 2012, London, United Kingdom, 2012
- “Lignofuels European Market Outlook and Policy” at Lignofuels 2011, Copenhagen, Denmark 2011

- Chairman at the Lignofuels 2010, Madrid, Spain, 2010
- Chairman at the European Biodiesel 2010, Barcelona, Spain, 2010
- “Biofuels opportunities in Peru” at the BioTop 2010 – EU-Latin America cooperation for the development of the biofuel business and technology transfer . Brussels, 2010
- “World Biofuels Markets – Trends and opportunities”. At the ECOPETROL International Forum of Biofuels, Bucaramanga, Colombia, 2009
- “Biofuels sustainability monitoring systems in Europe” at the IEA Workshop: The role of renewables in global energy modeling, Barcelona, Spain 2009
- “Pellets in large power plants - Risks and opportunities” at the 16th European Biomass Conference and Exhibition. Valencia, Spain, 2008
- “European sustainability policies and certification schemes for biofuels” at the Biofuel Summit and Expo. Madrid, Spain, 2008
- “Certification schemes for Biofuels” at the European Energy Forum. Barcelona, Spain, 2008
- “Perspectiva Internacional de la producción y del uso del aceite vegetal/biodiesel como fuente de energía. Fuerzas de cambio, tecnologías, costos y riesgos” at the Taller Regional de Biodiesel como fuente de energía en América Latina y el Caribe, European Union Energy Initiative and GTZ, Santo Domingo – República Dominicana, 2007
- “Políticas Europeas en Energías Renovables y sus Implicancias - Conceptos y Perspectivas: Status y el Futuro” at Universidad ESAN y Organismo Supervisor de la Inversión en Energía y Minería del Perú, Lima – Perú, 2007
- “Presentación del Plan de Gobierno del Frente de Centro” for the Peruvian community in Spain. Peruvian Presidential Elections. Casa Cataluña de las Americas. Barcelona, Spain, 2006
- “Lineamientos de la política energética peruana para la década 2005-2015”. Programa de Gobierno del Perú, Acción Popular. Lima – Perú, 2004
- “Barriers for energy integration in South America” at George Washington University - Organization of American States – Washington DC – USA, 2001
- “Oportunidades de inversión en el sector energía peruano” at IEEA – Lima, Perú, 2001
- “Peru’s energy sector overview and regional integration” at the 10th Annual Latin American Energy Conference San Diego - California, USA, 2001
- “Avances en el sector rural peruano y las oportunidades para el sector privado internacional” at the International Conference for private investors. Lima – Perú, 1996.

ACADEMIC CONFERENCES

- “The rate-controlled constrained-equilibrium method applied to the oxidation of C₁ hydrocarbons” The Center for 21st Century Energy, Massachusetts Institute of Technology (MIT), Cambridge, USA, 2005
- “El método de equilibrio restringido aplicado a la combustión de hidrocarburos C₁” Centro de Transferencia de Calor, Universidad Politécnica de Cataluña, Barcelona, Spain, 2004
- “Modeling of combustion for mono-carbon fuels using the rate-controlled constrained-equilibrium method”, Dept. of Mechanical Eng., California Institute of Technology (CALTECH), Pasadena, USA, 2004
- “Modelamiento de la combustión utilizando métodos de equilibrio restringido”. Segundo Encuentro Científico Internacional. Lima, Perú, 2003
- “Modelos computacionales para el despacho de reservorios de agua y potencia”. Colegio de Ingenieros del Perú. Lima, Perú, 1994.

SELECTED PUBLICATIONS AND REFERRED SCIENTIFIC ARTICLES

- M. Janbozorgi, S. Ugarte, M. Metghalchi and J.C. Keck (2009) “Combustion Modelling of Mono-Carbon Fuels Using the Rate-Controlled Constrained-Equilibrium Method”. Combustion and Flame, Vol 156, Issue 10, pp 1871-1885
- S. Ugarte and M. Metghalchi, (2005). “Evolution of Adiabatic Availability and its Depletion through Irreversible Processes”. International J. of Exergy, Vol. 2, No 2, pp. 109-119
- S. Ugarte and M. Metghalchi, (2005). “Application of the maximum entropy principle in the analysis of non-equilibrium chemical reacting mixtures” International Journal of Thermodynamics, Vol. 8, No 1, pp. 43-53

- S. Ugarte, M. Metghalchi and J.C. Keck (2005). "The rate-controlled constrained-equilibrium method applied to the oxidation of C1 hydrocarbons", Proceedings of US Sections Meeting, The Combustion Institute, Pennsylvania – USA
- S. Ugarte and M.W. Taslim, (2004). "Discharge coefficient measurements for flow through compound-angle conical holes with cross flow". International J. of Rotating Machinery, Vol. 10, No. 2, pp. 145-153
- S. Ugarte, M. Metghalchi and J.C. Keck, (2004). "Modeling of combustion for mono-carbon fuels using the rate-controlled constrained-equilibrium method", Proceedings of IMECE'04 ASME. Anaheim, California, USA
- S. Ugarte, M. Metghalchi and J.C. Keck, (2003). "Methanol oxidation induction times using the rate-controlled constrained-equilibrium method", Proceedings of IMECE'03 ASME. Washington, D.C - USA
- S. Ugarte, M. Metghalchi and J.C. Keck, (2003) "Methane oxidation modeling using the rate-controlled constrained-equilibrium method", Proceedings of Eastern States Section Meeting: The Combustion Institute, Pennsylvania – USA.

SELECTED MEMBERSHIPS

- External Advisory Board for the Energy Center for Future Needs, Northeastern University, Boston, Massachusetts
- Associate member of the American Society of Mechanical Engineers (ASME)
- SINDES Peru, Engineering and Development Society

HONORS AND AWARDS

- Honor Society PHI-BETA-DELTA, excellence as international scholar and cross-cultural achievements, 2004
- Yamamura Fellow Award. Excellence in engineering research, Northeastern University, 2003
- Twice awarded for outstanding teaching. College of Engineering, Northeastern University, 2002, 2003
- Recognition of merit by SINDES, Engineers Society, Peru, 2003
- Invited as member of the ABET accreditation board for Peruvian universities, 2001
- Recognition of merit by PETROPERU: Petroleos del Peru S.A. 2001
- Recognition of merit by IPEN: Instituto Peruano de Energia Nuclear. 2001
- Recognition of merit by the Ministry of Energy and Mines – Peru, 2001
- Recognition of merit by SNMPE: Mining, Oil and Energy National Society, 2001
- Honor Society PHI-KAPPA-PHI for outstanding performance in graduate work, 1999.