

## **Curriculum Vitae Sergio Ugarte**

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Name : **Ugarte, Sergio**  
Email : s.ugarte@sqconsult.com  
Date of Birth : August, 4, 1969  
Place of Birth : Lima, Peru  
Nationality : Spanish

Sergio Ugarte works in: - Renewable energy and climate change strategies and policies, and electricity market regulation

### **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

Sergio is Managing Director and co-Founder of SQconsult BV. He holds a PhD in Mechanical Engineering, with minors in Mathematics and Economics from the Northeastern University in Boston (USA), where he was for several years an associate researcher on energy generation topics and future energy needs. His long-term career in the energy sector among others includes being Vice-Minister of energy in Peru and Energy Sector Manager at Alpha Plus consulting where he supervised several electricity market tariffs and regulation studies and energy efficiency projects in LatinAmerica. In recent years, he joined the European consultancy firm Ecofys initially as Bioenergy Manager for Spain, Portugal and LatinAmerica and later as its International Director for the Energy Generation Strategies Division.

Sergio is working in international consulting on energy and sustainability topics since 1990. Main expertise in energy policies and regulation, electricity markets, bio-energy sustainability, technology benchmarking, short- and long-term profit calculations, renewable energy markets, investment strategies, energy efficiency programs, and implementation of new policies and regulation. Strong skills in project management and team organisation. He has a very thorough understanding of investment decision making within the energy sector as well as extensive hands-on experience on overcoming investment barriers

### **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***

SQconsult BV belongs to the Sustainable Quality holding SQholding BV. SQconsult is an international independent consultancy firm fully dedicated to support its clients in meeting the challenges of climate change, sustainability and energy transition. SQconsult provides expertise in the form of: strategic and regulatory advice, techno-economical analysis, policy evaluation, capacity- building and project management in the following areas (among others):

1. Renewable Energy: such as, but not limited to, wind, solar, bio-energy and hydro
2. Sustainability of bio-fuels and biomass
3. Climate Change: Mitigation and Adaptation
4. Carbon credits: CDM, JI and voluntary credits
5. Emissions trading: EU ETS and other systems
6. Energy efficiency: Industrials and Built environment
7. Rationalization of the use of conventional forms of energy (gas and power)
8. Decentralized generation

### Major projects:

- Project Director: Framework contract for the evaluation of the biofuels sustainability certification schemes for the Dutch government. Client: Agentschap Netherlands, 2010-2011
- Project Director: Roadmap for the design and implementation of a bioenergy sustainability certification scheme for the EdF Group. Client: EdF Group, 2010
- 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 schemes. Client: UNDP Lebanon – CEDRO, 2010-2011
- Project Director: CDM feasibility of international power interconnections projects. Client: IADB and UPME Colombia, 2010 - 2011

- Project Director: Capacity assessment and formulation of EU funded technical assistance to the regional African Power Pools and to the continental African Forum of Utility Regulators (AFUR), EuropeAid, 2010
- Project Evaluator: Second Energy Facility EU for ACP Countries. Evaluating sustainable energy and energy efficiency projects to alleviate extreme poverty and improve conditions for energy. Client: EuropeAid, 2010
- Project Director: Techno-economical 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, 2010-2011
- Project Technical Director: Renewable energy development for the Basque Country. Client: Economic and Social Council of the Basque Country. , 2010
- Project Director: Sustainable Action Plan review for the Province of Gipuzkoa, Basque Country, Spain. Client: Diputación de Gipuzkoa, 2010
- Project Director: Sustainable energy supply for the rural town of Beizama in the Basque Country, Spain. Client: Diputación de Gipuzkoa, 2010
- Project Director: Procedure for renewable energy tariff calculations for the Government of Peru. Client: COSANAC – OSINERGMIN Peru, 2009 -2010
- Project Director: Techno-economical analysis and sustainability traceability of the Spanish biofuel chain. Client: Factor CO2 Ennova, 2010
- 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

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. DG TREN, EC, 2009
- Project Director: Development of a biofuel business strategy for Ecopetrol, Colombia. Client: Ecopetrol, 2009

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:

- 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), 2008-2009
- 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, 2008
- 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), 2008
- 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., 2008
- Project Director. Organic secondary fuels and RDF market study in 10 European countries for the purpose of CO2 emissions reduction. Client: CEMEX International, 2007
- Project Director: Sustainable biomass and pellets production and trade in Spain and Portugal. Client: BioResource B.V., 2007
- Project Director: Feasibility study for biomass torrefaction for co-firing in coal power plants. Client: Large Utility, confidential. 2007
- Project Director: Small scale biomass CHP installations feasibility studies > 500 kW. Various clients, 2007
- Advisor of the Econcern holding for its activities in Latin America and the Caribbean. Clients: Econcern B.V. OneCarbon B.V. 2007-2009
- 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), 2007
- Ecofys Valgesta Advisor for its consultancy activities in bioenergy in Chile. Client: Ecofys Valgesta, 2007 - 2009

- 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.
  - Established energy independence as main national policy under criteria of sustainability and reduction of environment impact of its activities.
  - Proposed to the Congress new legislation to promote renewable energies, with special emphasis on distributed systems of mini hydro power plants, wind and solar plants.
  - Opened the market for the concession of large hydroelectric power projects, including projects with power export potential
  - 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 modeling and forecasting (power and gas flow modeling), 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, price forecasts 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

**SELECTED [RESEARCH AND] FREELANCE CONSULTING ASSIGNMENTS**

- ◊ Advisor for the Energy and Mining chapters of the Government Plan of the alliance “Frente de Centro” during the 2006 Peruvian Presidential Election, Peru, 2006
- ◊ Risk analysis on future revenues for the Camisea project (Peru). Natexis Banques Populaires, 2004
- ◊ Outlining of Latin American regional energy policies. Name of client reserved, 2003–2004
- ◊ Feasibility of the convergence of the energy and telecommunication businesses: Peruvian case. Name of client reserved, 2003
- ◊ Peru’s energy sector overview and regional integration. CLAI, George Washington University, 2001

## ENERGY CONFERENCES

- ◆ Chairman of “Lignofuels 2010”, Madrid, Spain, 2010
- ◆ Chairman of “European biodiesel 2010”, Barcelona, Spain, 2010
- ◆ Biofuels opportunities in Peru. BioTop 2010 – EU-Latin America cooperation for the development of the biofuel business and technology transfer . Brussels, 2010
- ◆ “World Biofuels Markets – Trends and opportunities”. ECOPETROL International Forum of Biofuels, Bucaramanga, Colombia, 2009
- ◆ “Biofuels sustainability monitoring schemes in Europe”. IEA Workshop: The role of renewables in global energy modeling, Barcelona, Spain 2009
- ◆ “Pellets in large power plants - Risks and opportunities”. 16th European Biomass Conference and Exhibition. Valencia, Spain, 2008
- ◆ “European sustainability policies and certification schemes for biofuels”. Biofuel Summit and Expo. Madrid, Spain, 2008
- ◆ “Certification schemes for Biofuels” 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”. 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”. 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”. George Washington University - Organization of American States – Washington DC – USA, 2001
- ◆ “Oportunidades de inversión en el sector energía peruano”. IEEE – Lima, Perú, 2001
- ◆ “Peru’s energy sector overview and regional integration”. 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”. Internacional Conference for private investors. Lima – Perú, 1996.

## ACADEMIC CONFERENCES

- ◆ “The rate-controlled constrained-equilibrium method applied to the oxidation of C<sub>1</sub> 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 C<sub>1</sub>” 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.