

# Baltazar Solano Rodríguez, Senior Energy Systems and Transition Risk Modeller

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Nationalities: Mexican & British. Languages: Spanish | English | Russian, French (Basic)

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**PROFILE** Expert in energy systems and transition risk modelling with two decades of experience across the energy sector. I specialize in the use and development of energy models at global, national, and sectoral scales to support decarbonization strategies and transition risks assessments. My background spans industry, academia, and consultancy roles. To date, I've contributed to over 30 publications, encompassing book chapters, peer-reviewed articles, and consultancy reports.

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## EMPLOYMENT HISTORY

Nov 2023 — Present	Director (Transition Modelling Lab)	Remote
	I lead a small advisory firm specialized in energy systems modelling and analysis focused on Mexico's transition.	
Oct 2023 — Present	Head of Transition Risks Modelling (Carbon Risk)	Remote
	I lead the technical development of energy systems modelling activities to assess transition risks at company and asset levels.	
May 2022 — Dec 2023	Energy Systems Modelling Lead (Danish Energy Agency   Mexico's Secretariat of the Environment and Natural Resources)	Remote
	I led the energy systems modelling activities that underpin Mexico's climate strategy update, using a TIMES model that I developed for Mexico's Secretariat of Energy. This work is done in collaboration with researchers at UNAM and Mexican government officials.	
Sep 2022 — Jun 2023	Energy Systems Modelling Expert (Baringa   BlackRock)	Remote
	I worked at Baringa on the development of BlackRock's global transition model to enhance its capabilities. This model is central to BlackRock's world-leading methodology to assess climate-related risks at asset level.	
Jan 2022 — Aug 2022	Transition Risk Modelling Lead (Cervest)	Remote
	I led the technical development of Cervest's methodology to quantify transition risks, including regulatory, market and technology risks at company and asset levels.	
Jun 2012 — Dec 2021	Senior Research Fellow in Energy Systems Modelling (University College London)	UK
	At UCL Energy Institute I developed TIMES MXR, a multi-regional energy systems model for Mexico's Ministry of Energy (SENER) and ETM-UCL, an energy systems model of the EU. I used both models to study the implications of different long-term decarbonisation strategies. I also carried out energy systems research involving the use of UK TIMES and TIAM-UCL (a global integrated assessment model) to explore decarbonisation pathways for the power sector, transport, industry and buildings. I also used this global model together with O&G market models to quantify transition risks for oil and gas producers in Latin America.	
May 2010 — May 2012	Modelling Consultant (Ricardo AEA; formerly AEA Technology)	UK
	Delivered modelling support on UK Government and EU energy and climate change programmes. I led the modelling activities for the UK Market Transformation Programme, supporting UK government policy on sustainable energy using products.	
May 2008 — Apr 2010	Operations Research Consultant (UK National Nuclear Laboratory)	UK
	I developed simulation models to assess the performance of various nuclear waste management facilities in the UK.	
Sep 2001 — May 2005	Senior Field Engineer (Schlumberger)	Mexico, US, Chad, Argentina
	I worked in operations management in several marine and land seismic acquisition projects ranging from 1 to 10 million USD, from small-sized crews to over 1,000 workers.	

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## EDUCATION

Aug 2006 — Jul 2007	MSc in Operations Research, University of Edinburgh	UK
Aug 2005 — Jul 2006	MPhil in Industrial Systems, Manufacture and Management, University of Cambridge	UK
Aug 1996 — Jun 2001	BSc in Industrial Physics Engineering, ITESM	Mexico

Other qualifications: Climate-related Financial Risk (University of Oxford), System Dynamics Modelling (University of Delft), TIMES modelling (IEA-ETSAP), Simulation Software (Witness)+SQL, Python, GitHub and other energy modelling software.

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## SELECTED PUBLICATIONS

Giannakidis G., K. Karlsson, M. Labriet, B. Ó Gallachóir (eds.). Limiting Global Warming to Well Below 2°C: Energy System Modelling and Policy Development. Springer, Lecture Notes in Energy, in press. 2018. Book chapter: Solano-Rodríguez, B., Pizarro A., Martin-del-Campo, C., Vaillancourt, K. Mexico's transition to a net-zero emissions energy system – near term implications of long term stringent climate targets.

Welsby, D., Solano-Rodríguez, B., Pye, S., Vogt-Schilb, A. "High and Dry: Stranded Natural Gas Reserves and Fiscal Revenues in Latin America and the Caribbean". Inter-American Development Bank (2022). <https://publications.iadb.org/en/high-and-dry-stranded-natural-gas-reserves-and-fiscal-revenues-latin-america-and-caribbean>

Romanello, M. et al. The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)01787-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01787-6/fulltext)

Solano-Rodríguez, B., Pye, S., Li, P., Ekins, P., Manzano, O., Vogt-Schilb, A. "Implications of Climate Targets on Oil Production and Fiscal Revenues in Latin America and the Caribbean." *Energy and Climate Change*, 2021.

Sarmiento, L., Molar-Cruz, A., Avraam, C., Brown, M., Rosellon, J., Siddiqui, S., Solano-Rodríguez, B. Mexico and US power systems under variations in natural gas prices. EMF-34. *Energy Policy*, 2021

Scamman, D., Solano-Rodríguez, B., Pye, S., Chiu, L., Smith, A., Cassarino-Gallo, T., Barret, M. Lowe, R. Heat Decarbonisation Modelling Approaches in the UK: An Energy System Architecture Perspective. *Energies*, 2020.

Butnar I., Broad O., Solano Rodríguez B., Dodds P. The role of bioenergy for global deep decarbonization: CO2 removal or low carbon energy? *GCB Bioenergy*. 2020;12:198–212. <https://doi.org/10.1111/gcbb.12666>

Chris Bataille, Max Åhman, Karsten Neuhoff, Lars Nilsson, Manfred Fishedick, Stefan Lechtenböhmer, Baltazar Solano-Rodríguez, Amandine Denis-Ryan, Henri Waisman, Oliver Sartor, Shahrzad Rahbar. Technology and policy options for making heavy industry products consistent with 1.5-2°C compatible deep decarbonization pathways. *Journal of Cleaner Production*, 2018.

McCollum, D.L., C. Wilson, M. Bevione, S. Carrara, O.Y. Edelenbosch, J. Emmerling, C. Guivarch, P. Karkatsoulis, I. Keppo, V. Krey, Z. Lin, E. Ó Broin, L. Paroussos, H. Pettifor, K. Ramea, K. Riahi, F. Sano, B.S. Rodríguez, and D.P. van Vuuren. The role of consumer preferences and climate policies in shaping the global private vehicle market. *Nature Energy*, 2018.

Solano-Rodríguez, B., Drummond, P., Ekins, P. Decarbonising the EU Energy System: An important role for BECCS. *Climate Policy*, 2016.

Hawkes, A., Narkeviciute, R., Morris, S., Solano Rodríguez, B. DECC Pathways to 2050 – Detailed Analyses: UK MARKAL Model Review and Scenarios for DECC's 4th Carbon Budget Evidence Base. 2011.

## SELECTED CONFERENCES AND SPEAKING ENGAGEMENTS

Solano-Rodríguez, B., Pye, S., Li, Pei-Hao, Vogt-Schilb, A. The macro-economic implications of reduced revenues from gas in Latin America and the Caribbean countries under emerging climate policy. Latin American Energy Economics Conference, Buenos Aires, 2019.

Solano-Rodríguez, B., Pye, S. Assessing the prospects for public revenues from oil in Latin American and Caribbean countries under emerging climate policy. International Fossil Fuels and Climate Policy, University of Oxford, 2018.

Solano-Rodríguez, B., Pizarro, A., Martin-del-Campo, C. Potential for gas-based stranded assets in Mexico's transition to a low carbon power sector. International Energy Workshop, Gothenburg, 2018.

Solano-Rodríguez, B. Introduction to TIMES MX-Regional. Stanford Energy Modelling Forum – study on North America (EMF-34), Washington DC, 2017.

Mexico's President high-level roundtable on building a sustainable energy economy in the UK and Mexico. Aberdeen, 2015.

Prince Charles high-level roundtable on Mexico's energy future within the context of climate change. Campeche, 2014.

Solano-Rodríguez, B. Cost-effectively meeting EU's 2030 climate and energy targets. London Energy Systems Conference, 2014.

Solano-Rodríguez, B., McGlade, C. Long-term European strategies to enhance gas supply security. IAEE, Rome, 2014.

Solano-Rodríguez, B. Development of a European TIMES model. International Energy Agency - ETSAP, Seoul, 2013.

Solano-Rodríguez, B., Anandarajah, G., Strachan, N. Long-term dynamics of EU decarbonisation without nuclear. IAEE, Dusseldorf, 2013.

IEA-ETSAP annual reunion, attending as representative of the UK government. Athens, 2011.