

Lara Aleluia da Silva Reis

RFF-CMCC

European Institute on Economics and the Environment

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ITALY

Environmental modeller

Born in Portugal in 1984

Personal webpage:

<https://laleluia.github.io/page/>

ORCID: 0000-0002-6676-7007
SCOPUS ID: 57204865946
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Researcher ID: AFV-8907-2022

EDUCATION

PhD in Engineering Sciences,

Faculty of Science, Technology and Communication, of the
University of Luxembourg

Thesis: "Development and application of an AsYmptotic Level Transport Pollution
Model for Luxembourg Energy and Air Quality Project"

Oct.2008-Oct.2012

Visiting PhD Student,

Aristotle University of Thessaloniki, Greece
Laboratory of atmospheric physics

Sep.2010 - Feb.2011

Summer School, Alpbach

New space missions for understanding climate change

Aeronautics and Space Agency of the Austrian Research Promotion Agency (FFG),
co-sponsored by ESA

2 weeks - 2010

Master in Environmental Engineering, management and environmental systems

Faculty of Science and Technology of the
New University of Lisbon, Portugal

Thesis: "Statistical models for ozone prediction in Lisbon and Tagus valley region"

Sep.2006 - Jun.2008

Erasmus Program,

University of Dresden, Germany Practical work on analysis of the behaviour of chlorine in combustion processes
Extra ECTS for the accomplishment of Climate change course

Feb.2006 - Aug.2006

Degree in Environmental Engineering

Faculty of Science and Technology of the
New University of Lisbon, Portugal

Hydraulics II, as extra-curricular course

Sep.2002 - Jun.2006

CURRENT POSITION

RFF-CMCC - European Institute on Economics and the Environment

CMCC Foundation - Euro-Mediterranean Centre on Climate Change

Milan, Italy

Sep.2018 – Currently

- *Scientist*
- Contributing author of the 6th IPCC Assessment Report (AR6) (WGIII)

- Contributing to Scenario MIP
- Energy-Environment-Economic Modeller
- WITCH and FASST(R) developer
- Supervision of the air pollution related activities:
 - Reduced models and emulators
- Climate policy modelling and Machine learning emulators
- Currently working on: Modelling international climate finance transfers, air pollution distributional effects, multi-criteria of national and global net-zero policies, non-CO2 removal technologies, and energy autarky scenarios.

SCIENTIFIC MERIT

Research metrics

H-index: 21 (Google Scholar) | 27 (i10-index Google Scholar) | 16 (Scopus)

Citations: 8254 (Google Scholar) | 5421 (Scopus)

30 scientific articles in Q1 journals (Total 32)

Chapter in Book

- **L. Aleluia**, V. Bosetti, M. Bunn, M. Catenacci, L.A. Diaz, G. Fiorese, A. Lee, and E. Verdolini, Innovation under uncertainty — The future of carbon-free energy technologies, Edward Elgar Publishing, 2013, ISBN 978-1-78254-646-7

Publications

1. Renna, S., Granella, F., **Aleluia Reis, L.**, Schulz-Antipa, P., “CLAQC v1.0 – Country Level Air Quality Calculator: an empirical modeling approach”, *Geoscientific Model Development* Vol. 18, No. 8, p. 2373-2408 (2025). <https://doi.org/10.5194/gmd-18-2373-2025> | (Q1 in Scimago, Citations: 0 (Google scholar), 0 (Scopus))
2. Calcaterra, M., **Aleluia Reis, L.**, Fragkos, P. et al. “Reducing the cost of capital to finance the energy transition in developing countries.”, *Nat Energy* 9, 1241–1251 (2024). <https://doi.org/10.1038/s41560-024-01606-7> | (Q1 in Scimago, Citations: 0 (Google scholar), 0 (Scopus))
3. Bertram, C., Brutschin, E., Drouet, L., Luderer, G., van Ruijven, B., **Aleluia Reis, L.**, Baptista, L. B., de Boer, H.-S., Cui, R., Daioglou, V., Fosse, F., Fragkiadakis, D., Fujimori, S., Hultman, N., Iyer, G., Keramidas, K., Kriegler, E., Lamboll, R. D., Mandaroux, R., Rochedo, P., Rogelj, J., Schaeffer, R., Silva, D., Tagomori, I., Vrontisi, Z., & Riahi K. 2024. “Feasibility of peak temperature targets in light of institutional constraints”. *Nature Climate Change* (Aug). <https://doi.org/10.1038/s41558-024-02073-4> | (Q1 in Scimago, Citations: 1 (Google scholar), 1 (Scopus))
4. Czernański, Ernest, Aneta Oniszczyk-Jastrzębek, Tomasz Laskowicz, Artur Badyda, **Aleluia Reis, Lara** and Chris G. Tzanis. 2024. “Editorial: Air Pollution as a Risk Factor Affecting Human Health and Economic Costs.” *Frontiers in Environmental Science* 12 (May). <https://doi.org/10.3389/fenvs.2024.1421547> | (Q1 in Scimago, Citations: 0 (Google scholar), 0 (Scopus))
5. Granella, Francesco, Stefania Renna, and **Lara Aleluia Reis**. 2024. “The Formation of Secondary Inorganic Aerosols: A Data-Driven Investigation of Lombardy’s Secondary Inorganic Aerosol Problem.”

- Atmospheric Environment* 327 (June): 120480. <https://doi.org/10.1016/j.atmosenv.2024.120480> | (Q1 in Scimago, Citations: 1 (Google scholar), 1 (Scopus))
6. Lunghi, Jacopo, Maurizio Malpede, and **Lara Aleluia Reis**. 2024. “Exploring the Impact of Livestock on Air Quality: A Deep Dive into Ammonia and Particulate Matter in Lombardy.” *Environmental Impact Assessment Review* 105 (March): 107456. <https://doi.org/10.1016/j.eiar.2024.107456> | (Q1 in Scimago, Citations: 2 (Google scholar), 2 (Scopus))
 7. **Aleluia Reis, Lara**, Zoi Vrontisi, Elena Verdolini, Kostas Fragkiadakis, and Massimo Tavoni. 2023. “A Research and Development Investment Strategy to Achieve the Paris Climate Agreement.” *Nature Communications* 14 (1). <https://doi.org/10.1038/s41467-023-38620-4> | (Q1 in Scimago, Citations: 9 (Google scholar), 6 (Scopus))
 8. Andreoni, Pietro, **Lara Aleluia Reis**, Laurent Drouet, Olivier Dessens, Panagiotis Fragkos, Robert Pietzcker, Steve Pye, Renato Rodrigues, and Massimo Tavoni. 2023. “Fossil Extraction Bans and Carbon Taxes: Assessing Their Interplay Through Multiple Models.” *iScience* 26 (4): 106377. <https://doi.org/10.1016/j.isci.2023.106377> | (Q1 in Scimago, Citations: 5 (Google scholar), 3 (Scopus))
 9. Nogueira, Larissa, Francesco Dalla Longa, **Lara Aleluia Reis**, Laurent Drouet, Zoi Vrontisi, Kostas Fragkiadakis, Evangelos Panos, and Bob van der Zwaan. 2023. “A Multi-Model Framework to Assess the Role of r&nd Towards a Decarbonized Energy System.” *Climatic Change* 176 (7). <https://doi.org/10.1007/s10584-023-03553-w> | (Q1 in Scimago, Citations: 0 (Google scholar), 0 (Scopus))
 10. **Aleluia Reis, Lara**, and Massimo Tavoni. 2023. “Glasgow to Paris—The Impact of the Glasgow Commitments for the Paris Climate Agreement.” *iScience* 26 (2): 105933. <https://doi.org/10.1016/j.isci.2023.105933> | (Q1 in Scimago, Citations: 9 (Google scholar), 7 (Scopus))
 11. **Aleluia Reis, Lara**, Laurent Drouet, and Massimo Tavoni. 2022. “Internalising Health-Economic Impacts of Air Pollution into Climate Policy: A Global Modelling Study.” *The Lancet Planetary Health* 6 (1): e40–48. [https://doi.org/10.1016/s2542-5196\(21\)00259-x](https://doi.org/10.1016/s2542-5196(21)00259-x) | (Q1 in Scimago, Citations: 53 (Google scholar), 37 (Scopus)) | Featured in “Editor’s Picks”
 12. Granella, Francesco, **Lara Aleluia Reis**, Valentina Bosetti, and Massimo Tavoni. 2021. “COVID-19 Lockdown Only Partially Alleviates Health Impacts of Air Pollution in Northern Italy.” *Environmental Research Letters* 16 (3): 035012. <https://doi.org/10.1088/1748-9326/abd3d2> | (Q1 in Scimago, Citations: 40 (Google scholar), 28 (Scopus))
 13. Rafaj, Peter, Gregor Kiesewetter, Volker Krey, Wolfgang Schoepp, Christoph Bertram, Laurent Drouet, Oliver Fricko, **Lara Aleluia Reis**, et al. 2021. “Air Quality and Health Implications of 1.5C–2C Climate Pathways Under Considerations of Ageing Population: A Multi-Model Scenario Analysis.” *Environmental Research Letters* 16 (4): 045005. <https://doi.org/10.1088/1748-9326/abdf0b> | (Q1 in Scimago, Citations: 33 (Google scholar), 24 (Scopus))
 14. Vandyck, Toon, Sebastian Rauner, Jon Sampedro, Elisa Lanzi, **Lara Aleluia Reis**, Marco Springmann, and Rita Van Dingenen. 2021. “Integrate Health into Decision-Making to Foster Climate Action.” *Environmental Research Letters* 16 (4): 041005. <https://doi.org/10.1088/1748-9326/abef8d> | (Q1 in Scimago, Citations: 9 (Google scholar), 7 (Scopus))
 15. Soest, Heleen L. van, **Lara Aleluia Reis**, Luiz Bernardo Baptista, Christoph Bertram, Jacques Després, Laurent Drouet, Michel den Elzen, et al. 2021. “Global Roll-Out of Comprehensive Policy Measures May Aid in Bridging Emissions Gap.” *Nature Communications* 12 (1). <https://doi.org/10.1038/s41467-021-26595-z> | (Q1 in Scimago, Citations: 52 (Google scholar), 34 (Scopus))
 16. Drouet, Laurent, Valentina Bosetti, Simone A. Padoan, **Lara Aleluia Reis**, Christoph Bertram, Francesco Dalla Longa, Jacques Després, et al. 2021. “Net Zero-Emission Pathways Reduce the Physical and Economic Risks of Climate Change.” *Nature Climate Change* 11 (12): 1070–76. <https://doi.org/10.1038/s41558-021-01218-z> | (Q1 in Scimago, Citations: 62 (Google scholar), 38 (Scopus))

17. Roelfsema, Mark, Heleen L. van Soest, Mathijs Harmsen, Detlef P. van Vuuren, Christoph Bertram, Michel den Elzen, Niklas Höhne, **Lara Aleluia Reis**, et al. 2020. "Taking Stock of National Climate Policies to Evaluate Implementation of the Paris Agreement." *Nature Communications* 11 (1). <https://doi.org/10.1038/s41467-020-15414-6> | (Q1 in Scimago, Citations: 377 (Google scholar), 237 (Scopus))
18. Krey, Volker, Fei Guo, Peter Kolp, Wenji Zhou, Roberto Schaeffer, Aayushi Awasthy, Christoph Bertram, **Lara Aleluia Reis**, et al. 2019. "Looking Under the Hood: A Comparison of Techno-Economic Assumptions Across National and Global Integrated Assessment Models." *Energy* 172 (April): 1254–67. <https://doi.org/10.1016/j.energy.2018.12.131> | (Q1 in Scimago, Citations: 165 (Google scholar), 109 (Scopus))
19. Harmsen, Mathijs, Oliver Fricko, Jérôme Hilaire, Detlef P. van Vuuren, Laurent Drouet, Olivier Durand-Lasserve, Shinichiro Fujimori, **Lara Aleluia Reis**, et al. 2019. "Taking Some Heat Off the NDCs? The Limited Potential of Additional Short-Lived Climate Forcers' Mitigation." *Climatic Change* 163 (3): 1443–61. <https://doi.org/10.1007/s10584-019-02436-3> | (Q1 in Scimago, Citations: 26 (Google scholar), 15 (Scopus))
20. Verdolini, Elena, Laura Díaz Anadón, Erin Baker, Valentina Bosetti, and **Lara Aleluia Reis**. 2018. "Future Prospects for Energy Technologies: Insights from Expert Elicitations." *Review of Environmental Economics and Policy* 12 (1): 133–53. <https://doi.org/10.1093/reep/rex028> | (Q1 in Scimago, Citations: 69 (Google scholar), 51 (Scopus))
21. Vrontisi, Zoi, Gunnar Luderer, Bert Saveyn, Kimon Keramidas, **Aleluia Reis Lara**, Lavinia Baumstark, Christoph Bertram, et al. 2018. "Enhancing Global Climate Policy Ambition Towards a 1.5C Stabilization: A Short-Term Multi-Model Assessment." *Environmental Research Letters* 13 (4): 044039. <https://doi.org/10.1088/1748-9326/aab53e> | (Q1 in Scimago, Citations: 93 (Google scholar), 58 (Scopus))
22. **Aleluia Reis, Lara**, Laurent Drouet, Rita Dingenen, and Johannes Emmerling. 2018. "Future Global Air Quality Indices Under Different Socioeconomic and Climate Assumptions." *Sustainability* 10 (10): 3645. <https://doi.org/10.3390/su10103645> | (Q2 in Scimago, Citations: 28 (Google scholar), 18 (Scopus))
23. Soest, Heleen L. van, **Lara Aleluia Reis**, Laurent Drouet, Detlef P. van Vuuren, Michel G. J. den Elzen, Massimo Tavoni, Keigo Akimoto, et al. 2017. "Low-Emission Pathways in 11 Major Economies: Comparison of Cost-Optimal Pathways and Paris Climate Proposals." *Climatic Change* 142 (3–4): 491–504. <https://doi.org/10.1007/s10584-017-1964-6> | (Q1 in Scimago, Citations: 51 (Google scholar), 44 (Scopus))
24. Riahi, Keywan, Detlef P. van Vuuren, Elmar Kriegler, Jae Edmonds, Brian C. O'Neill, Shinichiro Fujimori, Nico Bauer, **Lara Aleluia Reis**, et al. 2017. "The Shared Socioeconomic Pathways and Their Energy, Land Use, and Greenhouse Gas Emissions Implications: An Overview." *Global Environmental Change* 42 (January): 153–68. <https://doi.org/10.1016/j.gloenvcha.2016.05.009> | (Q1 in Scimago, Citations: 4666 (Google scholar), 3113 (Scopus))
25. Rao, Shilpa, Zbigniew Klimont, Steven J. Smith, Rita Van Dingenen, Frank Dentener, Lex Bouwman, Keywan Riahi, **Lara Aleluia Reis**, et al. 2017. "Future Air Pollution in the Shared Socio-Economic Pathways." *Global Environmental Change* 42 (January): 346–58. <https://doi.org/10.1016/j.gloenvcha.2016.05.012> | (Q1 in Scimago, Citations: 382 (Google scholar), 279 (Scopus))
26. Rao, Shilpa, Zbigniew Klimont, Joana Leitao, Keywan Riahi, Rita van Dingenen, **Lara Aleluia Reis**, Katherine Calvin, et al. 2016. "A Multi-Model Assessment of the Co-Benefits of Climate Mitigation for Global Air Quality." *Environmental Research Letters* 11 (12): 124013. <https://doi.org/10.1088/1748-9326/11/12/124013> | (Q1 in Scimago, Citations: 115 (Google scholar), 77 (Scopus)) | [Featured article](#)
27. Anadon, Laura Diaz, Erin Baker, Valentina Bosetti, and **Lara Aleluia Reis**. 2016. "Expert Views - and Disagreements - about the Potential of Energy Technology R&D." *Climatic Change* 136 (3–4):

- 677–91. <https://doi.org/10.1007/s10584-016-1626-0> | (Q1 in Scimago, Citations: 28 (Google scholar), 15 (Scopus))
28. Aldy, Joseph, William Pizer, Massimo Tavoni, **Lara Aleluia Reis**, Keigo Akimoto, Geoffrey Blanford, Carlo Carraro, et al. 2016. “Economic Tools to Promote Transparency and Comparability in the Paris Agreement.” *Nature Climate Change* 6 (11): 1000–1004. <https://doi.org/10.1038/nclimate3106> | (Q1 in Scimago, Citations: 150 (Google scholar), 98 (Scopus))
 29. Baker, Erin, Olaitan Olaleye, and **Lara Aleluia Reis**. 2015. “Decision Frameworks and the Investment in R&D.” *Energy Policy* 80 (May): 275–85. <https://doi.org/10.1016/j.enpol.2015.01.027> | (Q1 in Scimago, Citations: 23 (Google scholar), 10 (Scopus))
 30. Baker, Erin, Valentina Bosetti, Laura Diaz Anadon, Max Henrion, and **Lara Aleluia Reis**. 2015. “Future Costs of Key Low-Carbon Energy Technologies: Harmonization and Aggregation of Energy Technology Expert Elicitation Data.” *Energy Policy* 80 (May): 219–32. <https://doi.org/10.1016/j.enpol.2014.10.008> | (Q1 in Scimago, Citations: 71 (Google scholar), 43 (Scopus))
 31. Aleluia Reis, Lara, Dimitrios Melas, Bernhard J. Peters, and Daniel S. Zachary. 2012. “Developing a Fast Photochemical Calculator for an Integrated Assessment Model.” *International Journal of Environment and Pollution* 50 (1/2/3/4): 140. <https://doi.org/10.1504/ijep.2012.051188> | (Q3 in Scimago, Citations: 3 (Google scholar), 1 (Scopus))
 32. Zachary, D S, L Drouet, U Leopold, and **Lara Aleluia Reis**. 2011. “Trade-Offs Between Energy Cost and Health Impact in a Regional Coupled Energy–Air Quality Model: The LEAQ Model.” *Environmental Research Letters* 6 (2): 024021. <https://doi.org/10.1088/1748-9326/6/2/024021> | (Q1 in Scimago, Citations: 20 (Google scholar), 16 (Scopus))

Publications submitted

- Tagomori, I. S., Diuana, F., Baptista, L. B., Bertram, C., Dafnomilis, I., Drouet, L., Fosse, F., Fragkiadakis, D., Fricko, O., Hooijschuur, E., Iyer, G., Kikstra, J., Krey, Volker., Luderer, Gunnar., Ou, Yang ., **Reis, Lara Aleluia**, et al., 2024, “Promising climate progress: How close do net-zero ambitions take us towards the Paris Agreement goals?”, <https://doi.org/10.21203/rs.3.rs-5239905/v1> | Under review in *Nature Climate Change*
- **Aleluia Reis, L.**, Tavoni, M., Drouet, L., Transitioning towards climate science: the critical role of COP28’s fossil fuel statement, 2024 | under review in *Communications Earth & Environment - Nature*
- Rodés-Bachs, Clàudia, **Lara Aleluia Reis**, Laurent Drouet, Peter Rafaj, and Massimo Tavoni. 2023. “Beyond the Limit: The Air Pollution Damages of Overshooting Temperature” , <https://doi.org/10.21203/rs.3.rs-3516807/v1> | Under review in *Science Advances*
- Sisco, Matthew R., Sarah O’Brien, Sara M. Constantino, **Lara Aleluia Reis**, and Valentina Bosetti. 2022. “Humans Are Dangerously Unaware of and Unresponsive to Daily Air Pollution a Multi-National Study on Human Worry, Awareness, and Adaptation to Air Pollution.” *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4144380> | Submitted to *PNAS nexus*
- Foster, P. M., ... , **Aleluia Reis, L.**, et al. 2025. “Indicators of Global Climate Change 2024: annual update of key indicators of the state of the climate system and human influence” *SSRN Electronic Journal*. https://editor.copernicus.org/ESSD/ms_records/essd-2025-250 | Submitted to *Earth System Science Data*

Peer-reviewed International Conferences

- Renna, S., Rodriguez-Pardo, C. and L. Aleluia Reis, "Enhancing Global Air Quality Monitoring Using High-Resolution Land Cover Data and Advanced Machine Learning Techniques", accepted at **AGU 2024**, USA
- L. Aleluia Reis, M. Tavoni and L. Drouet, "Transitioning towards climate science: the critical role of COP28’s fossil fuel statement", accepted at **IAMC 2024**, Seoul

- L. Aleluia Reis et al., "Energy Autarchy in the Age of Green Technology: A Boon for the Climate?", accepted at *IAMC 2024*, Seoul
- Aleluia Reis, L., 'Assessment of air pollution health co-benefits of Net-zero climate policies', *20th GEIA Conference*, Brussels, 2023, Poster
- Andreoni, Pietro, Lara Aleluia Reis, Laurent Drouet, Olivier Dessens, Panagiotis Fragkos, Robert Pietzcker, Steve Pye, Renato Rodrigues, and Massimo Tavoni. "A multi-model assessment of the interplay between fossil-extraction bans and demand-side policies in ambitious mitigation scenarios", *Integrated Assessment Modelling Consortium Conference 2022*, 2022, Maryland, USA
- Aleluia Reis, Lara, Zoi Vrontisi, Elena Verdolini, Kostas Fragkiadakis, and Massimo Tavoni "An R&D investment strategy to achieve the Paris agreement targets", *Integrated Assessment Modelling Consortium Conference 2022*, 2022, Maryland, USA
- Calcaterra, M., Aleluia Reis, L., et al., "The importance of reducing regional cost of capital for the energy transition: a multi-model analysis", *Integrated Assessment Modelling Consortium Conference 2022*, 2022, Maryland
- Lara Aleluia Reis and Massimo Tavoni, "The impact of the Glasgow commitments for the Paris agreement long-term goals", *2022 International Energy Workshop*, 2022, Freiburg, Germany
- Lara Aleluia Reis, et al., "The impact of the Russian gas and oil bans on the global energy system", *European Climate and Energy Modelling Platform 2022 (ECEMP)*, 2022, Virtual
- Lara Aleluia Reis, et al., "Improving the economic feasibility of 2C and 1.5C emission pathways through R&D", *2021 International Energy Workshop*, 2021, Virtual
- Lara Aleluia Reis, Laurent Drouet, Massimo Tavoni, 'Optimal Global Cost-Benefit Analysis — Policies that save lives', *EAERE - 25th Annual Conference of the European Association of Environmental and Resource Economists*, June 2020, Remotely | [Peer-reviewed but personally invited for a thematic session](#).
- Andreoni, Pietro, Massimo Tavoni, Laurent Drouet and Lara Aleluia Reis, "Moratoria on fossil fuels warrants climate policy success", *Integrated Assessment Modelling Consortium Conference 2020*, 2020, Remotely
- Lara Aleluia Reis, et al., "Internalizing the impacts of air pollution: a global integrated Cost-Benefit Analysis", *2019 International Energy Workshop*, 2019, Paris, France
- L. Drouet, L. Aleluia Reis and M. Tavoni, 'Optimal Global Benefit-Cost Analysis on Air Pollution and Climate — Policies that saves lives', *Integrated Assessment Modelling Consortium Conference 12*, 2019, Tsukuba, Japan
- L. Drouet, L. Aleluia Reis, M. Tavoni, 'Future Global Air Quality Indices under different SSP and climate policies', *Scenarios Forum*, 2019, Denver, USA
- [Maternity - 2018](#)
- L Aleluia Reis, L Drouet, and M Tavoni, 'Future mortality due to air pollution under climate policies', *Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purpose*, Bologna, Italy, 2017
- Aleluia Reis, Lara, Laurent Drouet, Rita Dingenen, and Johannes Emmerling, "Global Air Quality Index under different socioeconomic and climate scenarios", 2017, Brazil, *10th Annual IAMC Conference*
- L. Aleluia Reis, 'Global Air Quality Index under different socioeconomic and climate scenarios', *SISC 2017 - Annual conference of Società Italiana per le Scienze de Clima*, 2017, Bologna, Italy
- L. Aleluia Reis, 'The co-benefits of the INDCs on local air pollution', *SISC 2016 - Annual conference of Società Italiana per le Scienze de Clima*, 2016, Cagliari, Italy

- L. Drouet, L. Aleluia Reis, 'Going further than the INDCs, A global view on the short and long term implications of the Paris agreement', *Società Italiana per le Scienze de Clima*, 2016, Cagliari, Italy
- L. Aleluia Reis, et al., 'INDC's Implications - Results from the WITCH model', *2016 International Energy Workshop*, 2016, Cork, Ireland
- [Maternity - 2015](#)
- Lara Aleluia Reis, Laurent Drouet, Massimo Tavoni, 'Synergies and Interactions Between Climate Change Policies and Air Pollution Control Strategies - Results of the WITCH Integrated Assessment Model', *Seventh Annual Meeting of the IAMC 2014*, 2014, University of Maryland, USA, Poster
- L. Aleluia Reis, 'Synergies and Interactions Between Climate Change Policies and Air Pollution Control Strategies - Results of the WITCH Integrated Assessment Model', *SISC 2014 - Second Annual conference of Società Italiana per le Scienze de Clima*, 2014, Venice, Italy
- L. Aleluia Reis, 'Including air pollutants' emissions in integrated assessment climate change modelling', *SISC 2013 - First Annual conference of Società Italiana per le Scienze de Clima*, 2013, Lecce, Italy
- Aleluia Reis, D S Zachary, B Peters, and L Drouet, 'A fast air quality model using look-up tables to address integrated environmental assessment model requirements', *International Environmental Modelling and Software Society (iEMSs) 2012 International Congress on Environmental Modelling and Software*, 2012, Leipzig, Germany
- L Drouet, L Aleluia Reis, U Leopold, and D S Zachary, 'Implementing the oracle-based optimisation for an integrated assessment model for air pollution: the Luxembourg energy air quality model', *International Environmental Modelling and Software Society (iEMSs) 2012 International Congress on Environmental Modelling and Software*, 2012, Leipzig, Germany
- L Aleluia Reis, D Melas, B Peters, and D S Zachary, 'Developing a fast photochemical calculator for an integrated assessment model', *14th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Greece, 2011
- L. Drouet, D. Zachary, L. Aleluia Reis and U. Leopold. A coupled geo-spatial energy–air quality assessment model for the region of Luxembourg, *EURO 2010, 24th European Conference on Operational Research*, 2010, Lisbon, Portugal
- L Aleluia Reis, D S Zachary, U Leopold, and B Peters, Selecting a fast air quality calculator for an optimization meta-model, *Air Pollution XVII*, Estonia, 2009
- D S Zachary, U Leopold, L Aleluia Reis, C Braun, G Kneip, and O ONagy, An energy and environmental meta-model for strategic sustainable planning, *Energy and Sustainability II*, 2009, Bologna, Italy

Published Conference Proceedings

- **L Aleluia Reis**, L Drouet, and M Tavoni, 'Future mortality due to air pollution under climate policies', Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purpose (S Di Sabatino, S Trini Castelli, and E Brattich, eds.), 2017, pp. 185–189
- **L Aleluia Reis**, D S Zachary, B Peters, and L Drouet, 'A fast air quality model using look-up tables to address integrated environmental assessment model requirements', International Environmental Modelling and Software Society (iEMSs) 2012 International Congress on Environmental Modelling and Software Managing Resources of a Limited Planet, Sixth Biennial Meeting, Leipzig, Germany (R Seppelt, A A Voinov, S Lange, and D Bankamp, eds.), iemss, 2012
- L Drouet, **L Aleluia Reis**, U Leopold, and D S Zachary, 'Implementing the oracle-based optimisation for an integrated assessment model for air pollution: the Luxembourg energy air quality model', International Environmental Modelling and Software Society (iEMSs) 2012 International Congress

on Environmental Modelling and Software Managing Resources of a Limited Planet, Sixth Biennial Meeting, Leipzig, Germany (R Seppelt, A A Voinov, S Lange, and D Bankamp, eds.), iemss, 2012

- **L Aleluia Reis**, D Melas, B Peters, and D S Zachary, 'Developing a fast photochemical calculator for an integrated assessment model', 14th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes (J G Bartzis, A Syrakos, and S Andronopoulos, eds.), Environmental Technology Laboratory, Department of Mechanical Engineering, University of West Macedonia, Greece, 2011, pp. 225–229
- **L Aleluia Reis**, D S Zachary, U Leopold, and B Peters, 'Selecting a fast air quality calculator for an optimization meta-model', Air Pollution XVII (C A Brebbia and V POPOV, eds.), vol. 123, WIT Press, 2009, pp. 39 – 49
- D S Zachary, U Leopold, **L Aleluia Reis**, C Braun, G Kneip, and O ONagy, 'An energy and environmental meta-model for strategic sustainable planning', Energy and Sustainability II, vol. 121, WIT Press, 2009

Published Reports - Collaborations with International Institutions

- Emmerling, Johannes and **Aleluia Reis, Lara** and Drouet, Laurent and Raitzer, David and Pradhananga, Manisha, 'Assessing the Implications of a Global Net-Zero Transition for Developing Asia: Insights from Integrated Assessment Modeling', (December 18, 2023). *Asian Development Bank*, Economics Working Paper Series No. 709, Available at SSRN: <https://ssrn.com/abstract=4671439> or <http://dx.doi.org/10.2139/ssrn.4671439>
- *European Commission, Directorate-General for Research and Innovation*, 'Final report of the High-Level Panel of the European Decarbonisation Pathways Initiative', Publications Office, 2018, <https://data.europa.eu/doi/10.2777/636>
- **L Aleluia Reis**, J Emmerling, M Tavoni, and D Raitzer, 'The economics of greenhouse gas mitigation in developing asia', ADB ECONOMICS WORKING PAPER SERIES 504, ADB, ECONOMICS WORKING PAPER SERIES, *Asian Development Bank ADB*, Mandaluyong City, Metro Manila, Philippines, December 2016
- V Bosetti, L D Anadon, E Baker, **L Aleluia Reis**, and E Verdolini, 'The future of energy technologies: An overview of expert elicitations', GGKP Working Paper 01|2016, *GGKP Research Committee on Technology and Innovation*, 2026

Working papers

- **Lara Aleluia Reis**, Johannes Emmerling, Massimo Tavoni, 'Economic cost of mortality risks: a comparison between COVID-19 and air pollution', 2020, working paper available at Research Square, <https://doi.org/10.21203/rs.3.rs-3933359/v1>
- van Soest H., McCollum D., Bertram C., Harmsen M., van Vuuren D., Kriegler E., Roelfsema M., Fragkos P., den Elzen M., **Aleluia Reis L.**, Riahi K., Krey V., Kejun J., Schaeffer R., Mathur R., Fujimori S., 'Opportunities for Enhanced Action to Keep Paris Goals within Reach – **Contribution to the Talanoa Dialogue** by the COMMIT and CD-LINKS projects', DOI:10.13140/RG.2.2.26589.26080, <https://unfccc.int/documents/184187>, 2018
- Aldy J.E., Pizer W.P., Akimoto K., **Aleluia Reis L.**, Carraro C., and Tavoni M., 'Learning from nationally determined contributions', Research Papers Issue RP0286, CMCC, 2018
- L D Anadon, E Baker, V Bosetti, and **L Aleluia Reis**, 'Too early to pick winners: Disagreement across experts implies the need to diversify R&D investment', Working Paper 22.2016, Fondazione Eni Enrico Mattei, 2016
- Johannes Emmerling, Laurent Drouet, **Lara Aleluia Reis**, Michela Bevione, Loic Berger, Valentina Bosetti, Samuel Carrara, Enrica De Cian, Gauthier De Maere D'Aertrycke, Tom Longden, Maurizio Malpede, Giacomo Marangoni, Fabio Sferra, Massimo Tavoni, Jan Witajewski-Baltvilks, and Petr

Havlik, 'The WITCH 2016 Model - Documentation and Implementation of the Shared Socioeconomic Pathways', Working Paper 2016.42, Fondazione Eni Enrico Mattei, 2016

- H van Soest, **L Aleluia Reis**, D van Vuuren, C Bertram, L Drouet, J Jewell, E Kriegler, G Luderer, K Riahi, J Rogelj, M Tavoni, M den Elzen A Awasthy, K Calvin, P Capros, L Clarke, M Colombier, T Fei, A Garg, F Guedes, M Imperio, M Kainuma, J Kejun, A C Kberle, V Krey P Kolp, A Kitous, P Leonidas, A Lucena, T Masui, L Nogueira, R Pierfederici, B Saveyn, R Schaeffer, F Sha, B Shuai, P R Shukla, T Spencer, A Szklo, H Waisman, and et al, 'Regional low - emission pathways from global models', Working Paper 110.2015, Fondazione Eni Enrico Mattei, 2015

Science Communication articles

- **Aleluia Reis, Lara**; "LE RELAZIONI TRA CLIMA E INQUINAMENTO ATMOSFERICO"; ECO-SCIENZA Numero 5/6, Anno 2022
- Blanco, G., de Coninck, H. C., Agbemabiese, L., Diagne, E. H. M., Anadon, L. D., Lim, Y. S., Pengue, W. A., Sagar, A., Sugiyama, T., Tanaka, K., Verdolini, E., Witajewski-Baltvilks, J., **Reis, L. A.**, Babiker, M., Bai, X., Bekkers, R. N. A., Bertoldi, P., Burch, S., Cabeza, L. F., ... Winkler, H., (2022). Innovation, technology development and transfer. In P. R. Shukla, J. Skea, A. Al Khouradajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, & J. Malley (Eds.), *IPCC*, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of *Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 2674-2814). Cambridge University Press. <https://www.ipcc.ch/report/ar6/wg3> | (Citations: 23 (Google scholar))

Invited Talks - International Collaborations

- Invited panellist at the III ELEVATE International Stakeholder Workshop: The Global Chessboard: Political Economy of International Climate Agreements, 'Energy Autarchy in the Age of Green Technology: A Boon for the Climate?', June 2024, Bonn, Germany
- Invited panellist at the ELEVATE Workshop: Beyond the GST: aligning global aims and national commitments, 'Transitioning towards climate science: The critical role of COP28's fossil fuel statement', Feb 2024, Remotely
- Invited speaker at the Nexus Summit 2024 Harmonizing Energy, Water and Agriculture Systems for a Low Emissions Future, Mar 2024, Pakistan
- Contributing author of the Chapter 16 of the *IPCC 6th Assessment Report (AR6)*, WGIII (Only by invitation), From 2020 to 2022
- Invited speaker at the *UNECE* Air Convention (LRTAP) Expert Panel on Clean Air in Cities, "Contribution of agriculture to the PM pollution in Lombardy - A data science study.", 34th Expert Panel on Clean Air in Cities (EPCAC), 2022
- Invited speaker at Bocconi BLEST Workshop – Environmental challenges, policy and politics, (2022), "Internalising Air Pollution Health–Economic Impacts Into Climate Policy: A Global Modelling Study"
- Invited speaker at the International Symposium on Climate Change and Air Quality (6th April 2022, Seoul, South Korea)
- Invited speaker at RespiraMi 4 "Recent Advances on Air pollution and Health", Milan , Italy (2022)
- Invited speaker at the *UNECE* Air Convention (LRTAP) Expert Panel on Clean Air in Cities, "COVID-19 lockdown only partially alleviates health impacts of air pollution in Northern Italy", 3th Expert Panel on Clean Air in Cities (EPCAC), 2021
- Presenter at Festival dello Sviluppo Sostenibile (AsviS), 'Health impacts of air pollution', Workshop on "Urban Road Pricing and the Environment. Lessons from Milano and London", 2019

- Presenter at Workshop on Long-term strategies COMMIT in Berlin, 'Optimal Global Benefit-Cost Analysis on Air Pollution and Climate — Policies that saves lives', 2019
- Presented at the *UNFCCC COP22*-Marrakesh in the side event 'NDC Policy Choices and Levels of Effort', 2016
- Invited speaker and panellist at 'III ELEVATE International Stakeholder Workshop — The Global Chessboard: Political Economy of International Climate Agreements', June 2024, Bonn, Germany

Projects and Supervision

Personal Grants

AFR - Fonds National de la Recherche, Luxembourg - PhD grant - 4 years - € 141.968 (2009)

Research Projects

- **Currently participating in several funded projects (including many EC projects):** NEW-PATHWAYS (Horizon, **WP leader**) | ELEVATE (Horizon, **WP leader**) | REPAIR (Horizon) | COMMITTED (EuropeAid, EC, **WP leader**) | EDITS (non-EU, RITE) | RE-CONNECT (EC DG Clima, **WP leader**) | ADJUST (Horizon) | GRINS (PNRR Italy)
- **Participation in past Projects:** ICARUS (ERC) | LIMITS (FP7) | ADVANCE (FP7) | MILES (EuropeAid) | CD-Links (H2020) | DEEDS (H2020) | COMMIT (EuropeAid) | INNOPATHS (H2020) | ENGAGE (H2020) | NAVIGATE (H2020) | INHALE (non-EU, Cariplo Foundation)
- **Scientific responsible of:** NEWPATHWAYS (Horizon) | ELEVATE (Horizon) | REPAIR (Horizon) | DEEDS (H2020) | COMMIT (EuropeAid) | COMMITTED (EuropeAid) | INHALE (**Principal Investigator**, Cariplo Foundation) | RE-CONNECT (EC DG Clima)

Fund Raising

Participated in the writing and preparation of EC funded projects, the DEEDS, ELEVATE, REPAIR, COMMITTED, RE-CONNECT (CLIMA/2023/EA-RP/0011), COMMIT projects and the Cariplo's Foundation INHALE project.

- EuropeAid COMMIT project (COMMIT - Modelling of national greenhouse-gas emission mitigation policies and the relationship with global low emission pathways, Total: €1.550.000, CMCC: €92.913)
- EuropeAid COMMITTED project (COMMITTED: Climate pOlicy assessment and Mitigation Modeling to Integrate national and global TransiTion pathways for Environmental-friendly Development, Total: €1.586.000, CMCC: €220.000)
- H2020 DEEDS project (DEEDS - DialoguE on European Decarbonisation Strategies, EU contribution: Total: € 2.993.831, FEEM: €222.500).
- Horizon Europe ELEVATE project (ELEVATE - ENABLING AND LEVERAGING CLIMATE ACTION TOWARDS NET-ZERO EMISSIONS, Total: €4.998.325, CMCC: €571.875)
- Horizon Europe REPAIR project (REPAIR - Removing non-CO2 greenhouse gas emissions to support ambitious climate transitions, Total: €2.996.942, CMCC: €332.500)
- Cariplo foundation INHALE (INHALE - Impact on humaN Health of Agriculture and Livestock Emissions, Total: €125.000, CMCC: €58.500)
- RE-CONNECT (CLIMA/2023/EA-RP/0011, MODELLING, PROJECTING AND TRACKING EMISSIONS REDUCTION PATHWAYS, Total €2.749.630, CMCC: €195.177)

Consulting Works

- Team leader (Myself and 2 juniors), Hemispheric air pollution - Development of a global air pollution tool, **World Bank**, from 2020 to 2021
- Modeller of climate and air pollution short and long-term scenarios, **Asian Development Bank**, 2023
- Modeller of climate and air pollution short and long-term scenarios, **Asian Development Bank**, 2016

Supervision

As a Scientist at CMCC, I have tutored several Master and PhD students who were affiliated with our research institute. However, officially, I am supervisor and co-supervisor of two successfully finished master thesis.

Recognition

- **Guest Editor** of the special issue “Air Pollution as a Risk Factor Affecting Human Health and Economic Costs” in *Frontiers in Environmental Science*, 2023-2024 ([Q1 in Scimago](#), Czermański et al. (2024))
- **Thesis evaluation committee of:**
 - PhD candidate Mariana Império of the COPPE/UFRJ entitled “Atmospheric pollutant emissions in stringent climate scenarios for Brazil”
 - PhD candidate Eduardo Müller-Casseres of the COPPE/UFRJ entitled “Transporte Marítimo Internacional e Mitigação Climática sob a Ótica de Modelos de Avaliação Integrada”
- **Reviews articles for the journals:** Science | Environmental Modeling and Software | Nature Communications | Nature Climate Change | Climatic Change | Renewable & Sustainable Energy Reviews | International Journal of Environmental Pollution | Journal of Cleaner Production | The Lancet Planetary Health | Geophysical Research Letters | The Lancet Public Health | Joule | Environmental Research Letters | iScience | Urban Climate | Earths future | One Earth | Journal of Advances in Modeling Earth Systems

Relevant Media Appearances

- YouTube
 - Inhale: la ricerca del CMCC (2023) (in Italian): <https://www.youtube.com/watch?v=GnoRWVq91rc>
 - Economic tools to promote transparency and comparability in the Paris agreement (2016): https://www.youtube.com/watch?v=b8nBaat7__w
- Resources Radio
 - Integrating Air Pollution Impacts into Climate Policy (2022): <https://soundcloud.com/resources-radio/integrating-air-pollution-impacts-into-climate-policy-with-lara-aleluia-reis>
 - Progress on Goals of the Paris Agreement: Do Recent Pledges Close the Gap? (2023): <https://www.resources.org/resources-radio/progress-on-goals-of-the-paris-agreement-do-recent-pledges-close-the-gap-with-lara-aleluia-reis/>
- Radio Popolare (ITALIAN): Results of the INHALE project (min 34): <https://www.podcasts-online.org/de/il-giusto-clima-1586164931> (114 - Il giusto clima di mercoledì 21/06/2023)
- Climate Foresight magazine: Global Stocktake, guidance for closing the mitigation gaps (2023), <https://www.climateforesight.eu/interview/cop28-lara-aleluia-reis-global-stocktake-from-pledges-to-implementation/>

- Beatrice Bulgarelli, 'Quali sono gli investimenti R&D migliori per riuscire a rispettare l'accordo di Parigi?', Aleluia Reis, L. and Verdolini, E., *scienzainrete*, 2023, <https://www.scienzainrete.it/articolo/quali-sono-gli-investimenti-rd-migliori-riuscire-rispettare-laccordo-di-parigi/beatrice>
- Luca Martinelli, 'Ecco perché il successo del Grana Padano è un problema sanitario', *Altreconomia*, n. 271, 2024, <https://altreconomia.it/prodotto/271/>, ISBN: 9788865165416
- Enzo Riboni, 'Il «costo» dell'agricoltura sull'inquinamento atmosferico: il primato della Lombardia', https://www.corriere.it/buone-notizie/24_ottobre_13/il-costo-dell-agricoltura-sull-inquinamento-atmosferico-il-primato-della-lombardia-6714c367-bd77-4f45-9fd0-a48810281xlk.shtml, *Corriere della Sera*, 13 October 2024

Membership

- Member of the Integrated Assessment Modelling Consortium (IAMC) (2013-now)
- Member of the Società Italiana per le Scienze de Clima (SISC) (2013-2017)

PEDAGOGICAL MERIT

Lecturing

Lecturer and co-project leader, 'Climate change: Design activism for sustainability'

Domus Academy, Milano

Material: https://laleluia.github.io/page/CC_domus.pdf

23 hours (Lectures, revisions, final grading)

Nov-Dec 2018

Guest Lecturer, 'GAMS-R Visualization of climate scenarios lecture'

Politecnico di Milano

Material: https://laleluia.github.io/page/RGAMS_viz_slides_2023.pdf

3 hour Lecture + revisions

2021,2023 and 2024

Guest Lecturer, 'Sustainable Policy Instruments: synergies and trade-off in global environmental policy'

Università Vita-Salute San Raffaele, Milano

Material: https://laleluia.github.io/page/climpol_lect-1F.pdf

3 hour Lecture

2022

Presentation of materials and Online tools

- Machine learning emulators: <https://datashowb.shinyapps.io/CLAQC-App/>
- Sharing and visualising model results for policy support:
 - <https://datashowb.shinyapps.io/AQIvis/>
 - https://datashowb.shinyapps.io/web_shiny/
- Data visualisation for project deliverables: <https://rpubs.com/laleluia/deedswp1db>
- Data visualisation and data sharing with co-authors: <https://rpubs.com/laleluia/rffelpats>
- Co-author of the WITCH model documentation <https://doc.witchmodel.org/>

ORGANISATIONAL SKILLS

- Conference “Agricoltura e qualità dell’aria: dai dati alle decisioni”, 2023, <https://www.eiee.org/event/conference-inhale-final-meeting/>
 - This event brought together 4 project financed under the same grant call and several local and regional stakeholders.
- Organised the Fourth COMMIT project meeting: 21-22 November 2029, Milan
- Organised the capacity building session on multi-objective optimisation, 21-22 November 2029, Milan

COMPUTER SKILLS

Modelling and Development

FASST and FASST(R), Inmap, CLAQC, WITCH, RICE50+, AUSTAL2000, OZIPR, OpenFOAM

Programming

R, C, IDL, Matlab, Python, bash script, GAMS, LaTeX, tikz, R markdown, R Shiny

Software

Statistics: R, SPSS, Systat

GIS: Idrisi, GRASS, QuantumGIS, rgdal

OS: Windows, Linux

HCP and GitHub experience

PROFESSIONAL EXPERIENCE

FEEM - Fondazione Eni Enrico Mattei and

CMCC - Euro-Mediterranean Center on Climate Change

Milan, Italy

Apr.2013 – Sep.2020

- Junior researcher
- Development and maintenance of the air pollution module of the WITCH model
- Technology innovation: Assessment of the future costs of green technologies
- Implementation of short and long term climate policies

Public Research Centre Henri Tudor

Luxembourg

Set.2008 – Mar.2013

- R&D Engineer: Air quality and integrated assessment modelling

LANGUAGE SKILLS

PORTUGUESE

ENGLISH

FRENCH

ITALIAN

SPANISH

Native

Proficient

Proficient

Fluent

Intermediate

GERMAN
GREEK

Basic user (B2)
Basic user