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Friede-Gard-Preis for Sustainable Economics 2026 – How We Can Use Thermodynamics to Measure the Sustainability of Our Economy

Professor Dr Antonio Valero Capilla and **Professor Dr Alicia Valero Delgado** have been awarded this year's Friede-Gard-Preis for Sustainable Economics. They represent two generations of the Zaragoza School of Thermoeconomics. Thermoeconomics applies the laws of thermodynamics, a branch of physics, to determine the costs of our economic activities (products, production processes and waste) based on 'energy consumption' (more precisely: exergy consumption). This provides a yardstick for measuring the extent of the (non-)sustainability of our current economic system and offers approaches for targeted improvements.

After studying mechanical engineering, Antonio Valero Capilla specialised in the thermodynamic analysis and energy optimisation of machinery and production processes, and based on his findings, developed a general theory for assessing our planet's mineral and fossil raw materials. Together with his daughter, Alicia Valero Delgado, a qualified chemical engineer, he has expanded this into a thermodynamic and thermoeconomic theory encompassing the entire raw materials cycle ('cradle-to-cradle', i.e. 'from untouched nature back to untouched nature'). Hundreds of specialist publications and several books set out the results obtained.

Further information on the two prize winners and their work will be available on the Friede-Gard Prize homepage on the Umwelt-Campus Birkenfeld website (www.umwelt-campus.de/friede-gard-preis).

The **award ceremony** is scheduled for **Thursday, 15 October 2026, from 6.00 p.m. as an online event** (in German and English). During the event, Professor Valero Capilla and Professor Valero Delgado will provide an accessible insight into and overview of their work.

They will according to current planning not only explain in a generally understandable way what thermodynamics is about and what makes it different from the broadly used life cycle analysis (LCA) but also present how it proceeds in detail in practical applications. The following issues will be discussed: how circular (closed) is the Circular Economy; what matters really in recycling, how sustainable are sustainable energies, and what is important for sustainable agriculture.

The laudatory speech will be delivered by **Carlos Álvarez Pereira**, Secretary-General of the Club of Rome. The Club of Rome gained international recognition in 1972 with its report "The Limits to Growth." Since then, it has consistently published further analyses on sustainability issues.

For an audience with specialist background knowledge, **an online seminar** in English and German with the prize winners is also scheduled for **Friday, 16 October 2026, starting at 9.00 a.m.** In the lectures given both the theoretical and practical aspects will be deepened.

In addition, the founder of the Friede-Gard-Foundation, **Gerd Schuster**, will give a presentation on how - based on thermoeconomics - exergy could replace the current money and the huge advantages this would have.

Registration is now open at <https://www.umwelt-campus.de/anmeldung-friede-gard-preisverleihung>. The following link provides further information (<https://www.umwelt-campus.de/friede-gard-preis>).

The Friede-Gard Prize for Sustainable Economics is an award for academic achievements that represent significant progress in the further development of economic science towards an economics for a sustainable economy and society.

It is awarded annually by the non-profit Friede-Gard Foundation (www.friede-gard-stiftung.de), established in 2020, and is endowed with €5,000 per prize.

The Friede-Gard Foundation collaborates on this initiative with the Department of Environmental Economics and Environmental Law at the Birkenfeld Environmental Campus of Trier University of Applied Sciences (www.umwelt-campus.de/friede-gard-preis).