

# NEWSLETTER 06

JULY 2019

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## MEDEAS RESULTS

The main outcomes and results of the first half of the fourth year of the MEDEAS project are briefly presented below.

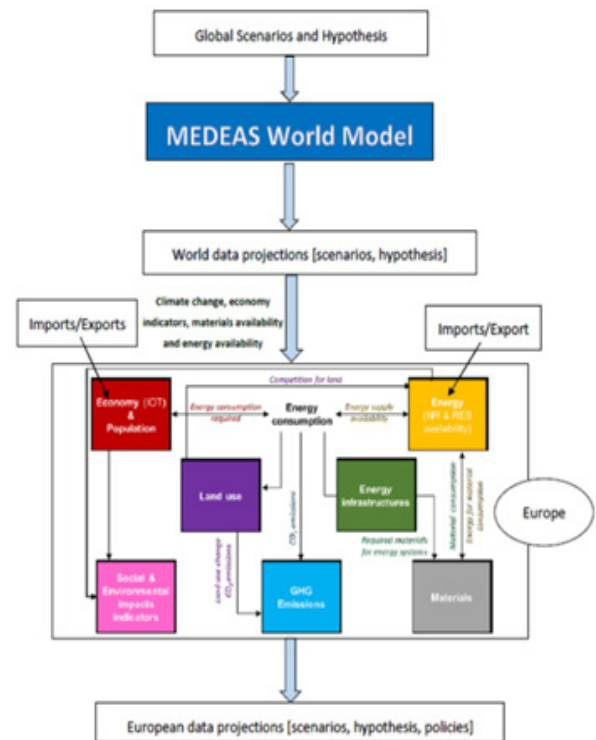
## MEDEAS EUROPEAN MODEL

The MEDEAS-Europe version has recently been released. The new model is based on the same modular structure as MEDEAS-World, but with some novelties. MEDEAS models are nested, meaning that the simulations from the global model affect the European model. Resource (materials and energy) availability, climate change impacts and the economic landscape that Europe has to deal with are loaded to the new model.

Contrary to MEDEAS-World, where the global system was treated as just one region, here the monetary and physical trade flows play a relevant role. This way, the final demand – which eventually triggers energy demand – can be boosted or constrained by the export demand from the rest of the world. Moreover, primary energy can be supplied either by domestic extraction or can be imported from the rest of the world as well.

As a consequence, outsourcing of environmental impacts can be tracked in MEDEAS-Europe. Greenhouse gas emissions are produced as a result

of non-renewable energy sources, but it does not contribute to global warming as it does in MEDEAS-World. Despite this consideration, European economy can be forced to suffer the climate change impacts regarding the global model simulations. Therefore, by including this kind of features, the potential of the model to describe future transition pathways has been strongly enhanced.



## MOOC RELEASE

A Massive Open Online Course (MOOC) entitled “Simulation models for the design of transition routes towards a sustainable society” has been created within the framework of the project, with the direct or indirect participation of all project partners, and the collaboration of the LCE21-2015 projects (Reflex, REEEM and SET-Nav). The task was performed by the University of Valladolid research group and in collaboration with technical team of the [Audiovisual Media Center of the National University](#)

[of Distance Education.](#)

The MOOC is available [here](#). The aim of this course is to help students achieve competencies in the use of simulation tools for the evaluation of the social, economic, energetic and environmental systems and their interactions. Specifically, learning to use the innovative IAM that has been developed in the MEDEAS project at the global level. Thus, the objec-

tives of this course are:

economy-environment simulation, as a tool for education and decision-making.

1. To understand the relationships between human activities and climate change, as well as their social and environmental impacts.
2. To introduce the models of the integrated energy-

TOPIC	SESSIONS	TEACHERS
1. Introduction	Session 1: About the idea of sustainability	Carmen Duce
	Session 2: Introduction to Integrated Modelling of Economic-Energy-Environment Scenarios	Luis J. Miguel
2. Economy	Session 1: Theoretical Framework of MEDEAS' Economy Module	Óscar Carpintero
	Session 2: Modelling the MEDEAS' Economy Module	Jaime Nieto
3. Energy	Session 1: Energy resources	Fernando Frechoso
	Session 2: Energy module implementation	Ignacio de Blas
4. Energy infrastructures and land-use	Session 1: Materials, Transport and EROI in MEDEAS	Margarita Mediavilla
	Session 2: Land use in MEDEAS	Pedro L. Lomas
5. Climate change	Session 1: Human interference in the climate system and climate modelling in MEDEAS	Noelia Ferreras
	Session 2: Modelling of climate change damages in MEDEAS	Íñigo Capellán
6. Running the MEDEAS model. Policies and Scenarios.	Session 1: Introduction to Energy and Climate Change policies and scenarios	Luis F. Lobejón
	Session 2: Implementing scenarios in MEDEAS	Jaime Nieto

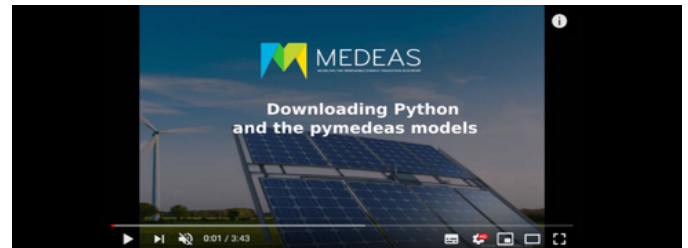
# MEDEAS VIDEOS ON HOW TO INSTALL AND RUN PYMEDEAS

Five short videos have been released to guide users through the installation and use of the pymedeas models.

All videos can also be found [here](#) and include different guides:

1. How to download and install pymedeas
2. Pymedeas Linux installation
3. Pymedeas Windows installation

4. Pymedeas Mac installation
5. Pymedeas: How to create new scenarios, run and plot



## MEDEAS DOCUMENTARY

A short documentary film about the topics of MEDEAS project has been produced.

The film shares the main project aims and the key results in a synthesized non-technical language for a general audience. It includes the point of view on energy matters of the general public, industry and stakeholders; the state of the art of renewable primary energy production systems; and the transition scenarios with simulation results and the role played by the meetings with stakeholders.

The documentary is available through the [webpage of MEDEAS project](#).



## MEDEAS DISSEMINATION EVENTS

# MEDEAS PARTICIPATED IN THE IV INTERNATIONAL CONGRESS OF DEVELOPMENT STUDIES IN CÓRDOBA

Luis Javier Miguel from the University of Valladolid (UVa), a MEDEAS partner, participated in the IV International Congress of Development Studies. The event took place on 12 – 14 December 2018 and it was hosted by the University Loyola Andalucía and its Development Institute, the ETEA Foundation in Córdoba, Spain.

The congress was attended by more than 200 researchers and professors from different countries.

The theme of the IV Congress was the "Research on Development against the limits of globalization". During the Congress, Luis Javier Miguel presented the MEDEAS model. The congress is an initiative of the Spanish Network for Development Studies (REEDES).

In relation to the MEDEAS project, two communications were presented:

MEDEAS: global simulation model for the search for transition paths towards a sustainable society, was presented by Luis Javier Miguel González, which summarized the model developed in the project, and Crossroads-World: an educational dynamic in the pursuit of sustainable development, presented by Carmen Duce Díaz, which explained the development of a participatory game based on the MEDEAS model.

The summaries of both communications can be found in the [Congress abstracts book](#).

More information on the event can be found [here](#).

## MEDEAS PARTICIPATED IN THE 6TH BUSINESS SYSTEMS LABORATORY INTERNATIONAL SYMPOSIUM IN PAVIA

**Gianluca Martelloni, Francesca Di Patti, Ilaria Perissi, Sara Falsini and Ugo Bardi from the National Interuniversity Consortium of Materials Science and Technology (INSTM), a MEDEAS partner, participated in the 6th Business Systems Laboratory International Symposium, which aims to address the global economic and social challenges of our times by a systemic perspective.**

The Symposium took place on 21-23 January 2019

and it was hosted by the University of Pavia, Department of Economics and Management in Pavia, Italy. On the third day of the Symposium, on 23 January 2019, during the panel session on System Dynamics, Gianluca Martelloni, Francesca Di Patti, Ilaria Perissi, Sara Falsini and Ugo Bardi presented the “MEDEAS-World model calibration for the study of the energy transition”.

More information on the event can be found [here](#).

## MEDEAS PRESENTATION OF RESULTS IN SEMINAR “SUSTAINABILITY AND ENERGY TRANSITION: MYTH OR REALITY?”

**On 22 February 2019, Jordi Solé Ollé from ICM-CSIC, coordinator of the MEDEAS project, held a presentation of MEDEAS results to date.**

During his talk, Jordi Solé Ollé explained that MEDEAS has reached its final year of life and we can already draw important conclusions about areas of general interest, such as the evolution of the economy, the interactions between technological development and improvements in efficiency, the impacts of climate change on our society in the medium term or

the needs and uses of the planet's surface for renewable development.

His talk was divided into two parts; in the first one the documentary of the project was presented, where some results are listed, and in the second part some of the results were analysed in detail to open a debate with the audience. The projections presented were based on the MEDEAS models, which allow us to study the evolution of variables such as GDP, the material resources necessary for economic development and the impacts of this development at a global



and European level. Jordi Solé Ollé pointed out that the results alert us, in addition to the impacts that greenhouse gas emissions will have on our socio-economic system, on how the situation of humanity will become critical in a few decades if we do not redirect current trends.



## MEDEAS MEETING WITH STAKEHOLDERS WITH SOCIO-ECONOMIC ANALYSIS BACKGROUND IN BARCELONA

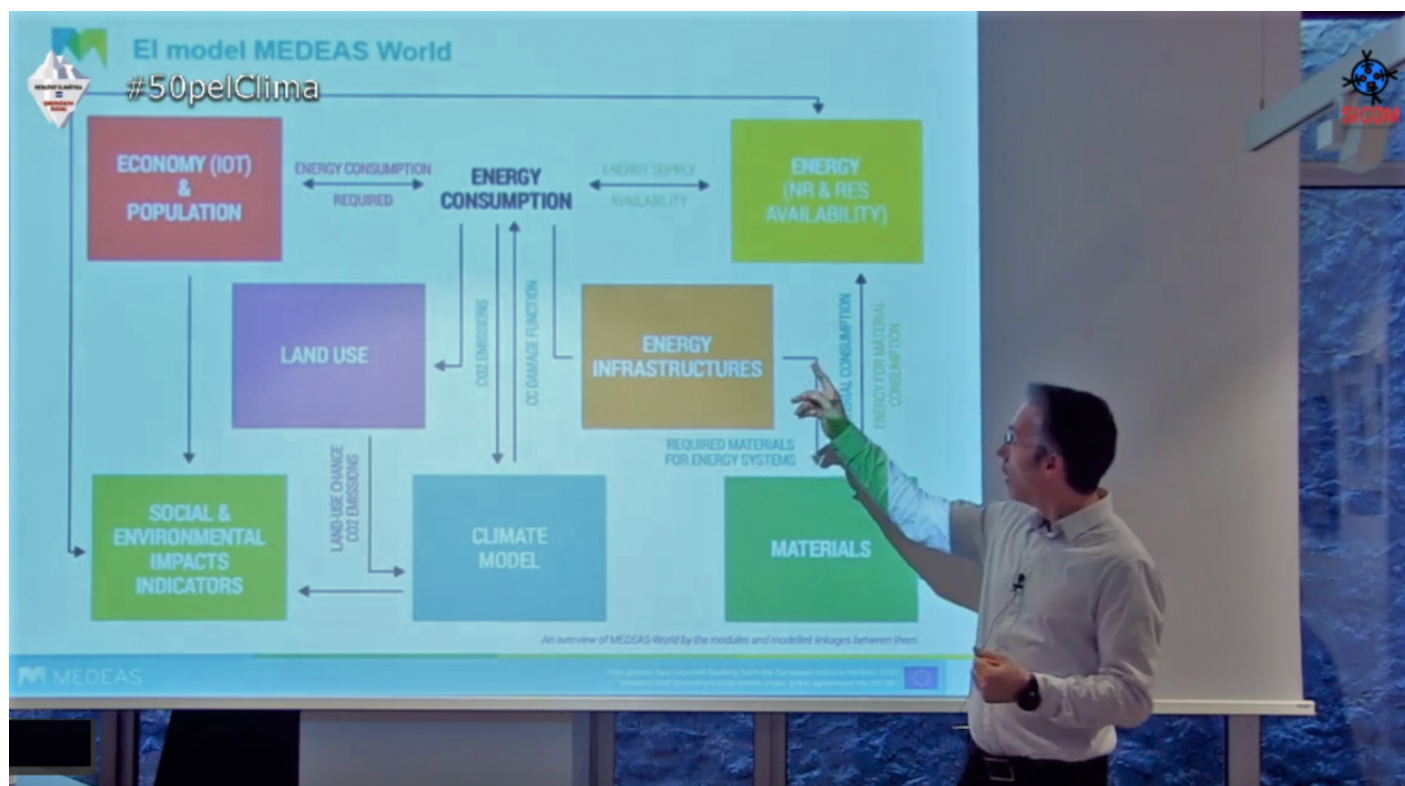
**On 27 February 2019, ICM-CSIC, MEDEAS coordinator, organized a meeting at their premises in Barcelona to present the MEDEAS project and models.**

The participants of the meeting were a group of socio-economic data analysts, part of the Network of Observatories of the Local Economic Development (XODEL), which is formed by 21 socioeconomic observatories and coordinated by the Barcelona Council (DIBA). The Observatories compile, organize, generate

and disseminate, on a permanent basis, socioeconomic information of interest for decision-making, in order to promote local economic development. The majority of observatories belong to town halls and regional councils. As for academic profiles, members of the observatory network are mostly sociologists, political scientists, geographers and economists, and statisticians.



# MEDEAS PARTICIPATED IN THE 50 RESEARCHERS' MARATHON TO REPORT CLIMATE EMERGENCY IN BARCELONA



**Fifty scientists participated in a 12-hour marathon to warn that climate change is a "social emergency".**

On 6 April 2019, 50 researchers, scientists and experts in global warming/climate change and the environmental crisis gathered to explain, based on their expertise, why the climate reality is unequivocally a social emergency.

The event took place at the "Veïnal Calàbria 66" in Barcelona.

The event, unprecedented in Catalonia, was screened in live streaming from 9 am to 9 pm and presented more than 12 uninterrupted hours of argumentation on the emergency of climate change. It was organised by 5 researchers:

- Gabriel Borràs, Head of the Catalan Office for Climate Change, Adaptation area

- Josep Cabayol, CEO at Solidarity and Communication (SICOM)
- Marta G. Rivera, Director Chair in Agroecology and Food Systems at the UVic-UCC, IPCC panel expert
- Robert Savé, IRTA Catalan Research Institute ascribed to the Department of Agriculture, Food
- Javier Martín Vide, Coordinator of the Catalan Experts Group on Climate Change (GECCC)

The event was streamed by the local Non-Government Organisation Solidarity and Communication (SICOM).

On behalf of MEDEAS, Jordi Solé Ollé contributed with a presentation on "Renewable Transition and Climate Change: impacts and open issues".

More information about the event is available [here](#).

# MEDEAS TOOK PART IN THE “MINING AND EXTRACTIVISM” CONFERENCE IN GRANADA

The Conference “Minería y Extractivismos. Diálogo entre la academia y los movimientos sociales” was held in Granada, Spain between 9 and 10 May 2019. Iñigo Capellán-Pérez from the University of Valladolid (UVA), a MEDEAS partner, presented the results related to the mineral requirements for the transition to a renewable energy system in the talk “The mineral dependence of the energy transition” in the “Mining” session.

The Conference was a very relevant event to exchange knowledge and experience from the academia and the social movements working in these topics in Spain and South America.

More information about the Conference (programme, invited speakers and presentations abstracts) can be found [here](#).

## UPCOMING EVENTS

### 3RD BOARD OF STAKEHOLDERS MEETING

The 3rd MEDEAS Board of Stakeholders meeting will be a one-day event that will take place in Brussels at the [CSIC quarters](#) on 21 November 2019.

The scope of the meeting will be to address policy issues related to the transition to a low carbon socio-economy, to discuss the impacts and challenges met and to make policy recommendations for an

energy transition at a minimum cost for the society's wellbeing.

The meeting will be attended by decision makers, policy analysts, NGOs and other stakeholders who are active in or may influence the decision making. The participants will be informed on the policy-related results of the project and its main findings and will also have a chance to discuss the MEDEAS White Book and contribute to the final project recommendations through their feedback and insights.

**If you are interested to attend the event please [contact MEDEAS](#). The event is by invitation only.**

## MEDEAS ORGANISES THE ENERGY MODELLING PLATFORM FOR EUROPE (EMP-E) 2019

MEDEAS, as part of the H2020 Energy modelling group, which consists of ten Horizon 2020 projects funded by the European Commission's Research and Innovation Programme (MEDEAS, MAGIC, MAGNITUDE, OpenENTRANCE, plan4res, PLANET, REEEM, Reflex, SET-Nav and Spine), organises the Third Meeting of the Energy Modelling Platform for Europe (EMP-E) 2019 “Modelling the implementation

of a Clean Planet for All Strategy”, hosted on 8 and 9 October 2019 by the European Commission DG Research & Innovation in Brussels.

The Energy Modelling Platform for Europe (EMP-E) is an annual conference, bringing together scientists and policy makers on current and innovative energy



modelling issues. Due to the active involvement of EC representatives and leading researchers, the aim is to bridge the gap between modelling and policy making at the European, regional and local level. Stakeholders are provided with a peer-reviewed digest of model and policy insights for the transformation of the European energy system.

On the first day, the agenda of the Energy Modelling Platform 2019 meeting includes four plenary sessions on the key themes of:

- Achieving ambitious RES deployment in a multi-coupled European energy system – techno-economical, financial and societal challenges.
- The effects of externalisation on decarbonisation.
- Pathways and scenarios towards the Paris Agreement.
- Decarbonisation of cities: Modelling energy transition, sector coupling and cross-sectoral challenges.

During the second day of the Conference, there are 9 focus groups on the specialised topics of:

- A. Energy System Models: Transparency, community-based and citizen participation
- B. Uncertainty in Energy System Models
- C. WEF Nexus in energy models: The case of biofuel
- D. Integrating social practices in energy models
- E. Barriers and opportunities for modelling the decarbonisation of economy - Policy makers' and stakeholders' role
- F. Tools and data structures that allow sharing of codes and data
- G. Decarbonisation of cities: Best practices and future expectations
- H. Linking climate and energy models in scenario analysis
- I. An open modelling platform for Europe

A detailed programme of the two-day conference is available [here](#).

Further information and updates on the event are published on the [webpage](#).



## MISCELLANEOUS

# MEDEAS GENERAL ASSEMBLY IN CAMBRIDGE

The third MEDEAS General Assembly was organized between 4 and 8 February 2019 in Cambridge, UK by the Global Sustainability Institute (GSI) of Anglia Ruskin University (ARU). All MEDEAS partners attended the General Assembly and participated in the meetings with presentations on project activities, completed deliverables and discussions on

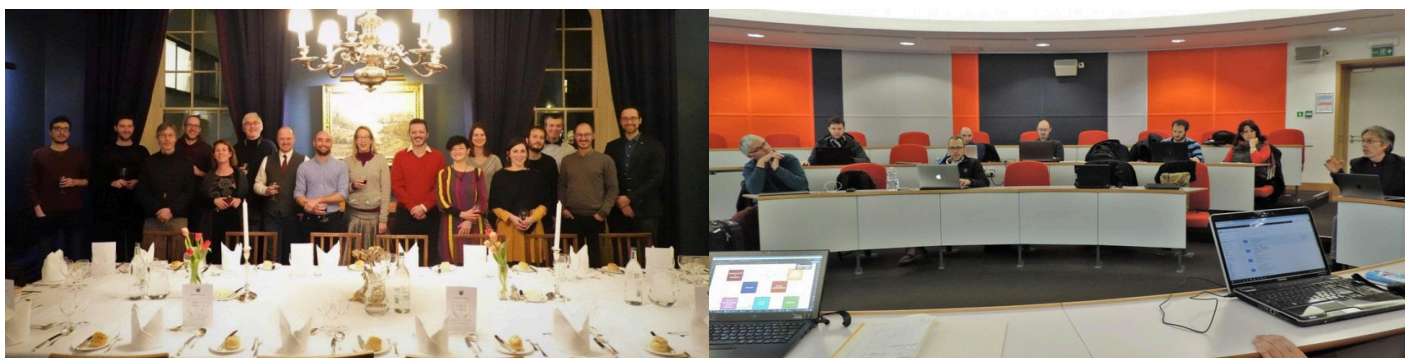
achieving the best outcomes and project results. Additionally, all partners contributed in hands-on sessions regarding the European and World model use, as well as future project developments and decisions in order to complete the foreseen activities and tasks successfully.

Side meetings among individual team members were

organized on 4 February, while the General Assembly officially started on 5 February with a welcome by GSI; followed by an introduction to the hot topics of the meeting, as well as presentations and discussions on the results of several project deliverables. In addition, on 7 February, CSIC, a MEDEAS partner, organized a workshop for the demonstration of the pymedeas\_eu model, where all attendants had the opportunity to install, run the model and become acquainted with its features. During the last day of the meeting, the focus

was primarily on the ongoing and future activities of the project with emphasis on acquiring significant results.

Apart from strictly work related activities, the General Assembly also provided MEDEAS partners with the opportunity to participate in several cultural and social activities, such as a guided tour of the attractions in Cambridge and a taste of the local cuisine.



## ALED JONES WROTE AN ARTICLE ON THE TIMEFRAME FOR ACHIEVING NET ZERO EMISSIONS IN THE UK

**On 2 May 2019, Aled Jones, director of the GSI-ARU, a MEDEAS partner, wrote an article in theconversation.com on the occasion of the “Net Zero – The UK’s contribution to stopping global warming” report release by the Committee on Climate Change.**

In his article entitled “Net zero emissions by 2050 or 2025? Depends how you think politics works”, Aled argues that achieving net zero emissions depends on what is considered politically “credible”, financially feasible, societally acceptable or even physically possible.

The MEDEAS model can be used to test the policies that are required to achieve net zero and how quickly these will impact on emission reductions and is therefore important within the context of this political

debate. A recent paper involving INSTM, ICM-CSIC and ARU, MEDEAS partners, explored the necessary reductions in emissions between now and 2050 to allow the EU to stay within the carbon budget set by the Paris Agreement. This [paper](#) is published in the Sustainability journal.

The complete article can be read [here](#).

