



Iñigo Capellán Pérez

Generated from: Editor CVN de FECYT

Date of document: 30/10/2020

v 1.4.3

bd59b8afbbbd5767c1522c212a964d1

This electronic file (PDF) has embedded CVN technology (CVN-XML). The CVN technology of this file allows you to export and import curricular data from and to any compatible data base. List of adapted databases available at: <http://cvn.fecyt.es/>



Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

Dr. Iñigo Capellán-Pérez is an **Industrial Engineer** with “Energy” as his specialty, graduated from the University of Valladolid (Spain) and ENSAM Arts et Métiers Paris-Tech. He holds a **MSc. in “Electrical Energy and Sustainable Development”** (ENSAM Lille, France, 2008) and a **PhD in Economics** (with honors) with the dissertation “Development and Application of Environmental Assessment Modelling Towards Sustainability” (University of the Basque Country, 2016). He has been part of the “Low Carbon” group in the **Basque Centre for Climate Change** (BC3, Bilbao, Spain, 2012-2016). He has been a member of the **Group of Energy, Economy and System Dynamics** of the University of Valladolid (GEEDS-UVa) since 2010, which is focused on the interactions between energy resources, economy and society towards sustainability applying System Dynamics. He visited the Joint Global Change Research Institute (JGCRI, 2016, USA) and the RES Foundation (2018, Serbia).

His research focuses on the **pathways to achieve sustainability** from an **energy systems** perspective. His **multidisciplinary qualifications** match with his research interest focus on the analysis and modeling of Energy-Economy-Environment systems, the transition to renewable energies in the context of the depletion of fossil fuels and climate mitigation, and broadly, the technical and social transformations towards sustainability at different levels (global, regional, national, local). Acknowledging that technical changes will need to be complemented by social/cultural ones, he is currently enrolled at **Social and Cultural Anthropology** at the Universidad Nacional de Educación a Distancia (UNED). In parallel, he actively participates and organizes **scientific dissemination and awareness activities**, such as the **Crossroads-World participatory simulation game**.

He lead the **development of the global energy-economy-climate model "World Limits Model" (WoLiM)** in GEEDS-UVa, which focuses on future energy pathways availability and their implications for human socioeconomic systems at a global aggregated level. WoLiM model is one of the cornerstones of the **H2020 MEDEAS project** in which he is currently participating as a model developer, and of **H2020 LOCOMOTION project** which started in mid-2019 as a continuation of MEDEAS and is coordinated by GEEDS-UVa. The central aim of both projects is to provide policy-makers and stakeholders with new modelling tools to better assess the **impacts and limitations of the EU energy production/ consumption system transition to a low-carbon sustainable socio-economy**. These models are developed in System Dynamics (Vensim) and translated later to open software and dynamically integrate different dimensions of the human-biosphere interface such as energy production, raw materials supply, socioeconomic behavior, land-use and climate.



His research achievements are reflected in over **60 scientific outputs**, including **19 peer-reviewed scientific articles** (18 of them in Q1 WoS journals); **11 book chapters**, as well as policy briefings and other scientific and teaching materials. He has also participated in **7 competitive research projects** (of which 5 international), **presented 21 contributions** at **15 international conferences**, **5 contributions at national conferences and workshops**, served in the **advisory board of scientific committees** and **regularly teaches in undergraduate and postgraduate course** at various universities in Spain.

General quality indicators of scientific research

This section describes briefly the main quality indicators of scientific production (periods of research activity, experience in supervising doctoral theses, total citations, articles in journals of the first quartile, H index...). It also includes other important aspects or peculiarities.

Dr. Iñigo Capellán-Pérez's research achievements are reflected in 18 scientific outputs, including **19 peer-reviewed scientific articles in Q1 international journals** -of which 8 as principal author- such as Energy & Environmental Science (IF=25.427 in 2015), Renewable and Sustainable Energy Reviews (IF=9.184 in 2017), Energy, Energy Research & Social Science, Energy Policy, Energy Strategy Reviews, Energy for Sustainable Development, Research in Transportation Economics or Climate Policy. These peer-reviewed articles are published in Q1 ISI journals in the following categories: Environmental Sciences; Energy & Fuels; Environmental Studies; Engineering, chemical; Public Administration; Green and Sustainable Science & Technology and Geoscience, multidisciplinary (following ISI WoS). Iñigo has **co-authored 11 book chapters**, as well as several model technical reports and policy briefings. Iñigo also serves as reviewer of peer reviewed international journals such as Nature Energy; Renewable and Sustainable Energy Reviews; Energy; Nature Scientific Reports; Applied Energy; Energy Research & Social Science; Energy Strategy Reviews; Energy Policy or Biophysical Economics and Resource Quality.

Dr. Iñigo Capellán-Pérez's publication record includes:

h-index in WoS (Google Scholar): 8 (12)

i10 index WoS (Google Scholar): 7 (14)

Total sum of the Times Cited in WoS (Google Scholar): 285 (610)

Total articles in publication list WoS (Google Scholar): 16 (49) (+5 articles under peer-review process)

Average citation per article in the WoS (Google Scholar): 17.8 (12.5)

Average citations per year in the WoS (Google Scholar): 35.6 (76.3).

Number of articles in a Q1 category: **19**.



Iñigo Capellán Pérez

Surname(s): **Capellán Pérez**
Name: **Iñigo**
ORCID: **0000-0002-3098-8027**
ScopusID: **57190759268**
ResearcherID: **H-6069-2015**

Current professional situation

Employing entity: FUNDACION GENERAL DE LA UNIVERSIDAD DE VALLADOLID

Professional category: Ingeniero Superior Industrial - Técnico grupo personal no administrativo

Start date: 16/12/2019

Type of contract: Temporary employment contract

Dedication regime: Full time

Primary (UNESCO code): 330000 - Technological Science.; 530000 - Economic science

Performed tasks: Programming of the LOCOMOTION models in Vensim. Scientific-technical coordination of the WP7 and WP8 of the LOCOMOTION project. Collaboration with the tasks of scientific dissemination in the project and the scientific-technical coordination of the WP9.

Identify key words: Renewable resources; Energy resources; Climate change

Previous positions and activities

	Employing entity	Professional category	Start date
1	Universidad de Valladolid	Post-doctoral researcher (Investigador posdoctoral Juan de la Cierva)	15/12/2017
2	FUNDACION GENERAL DE LA UNIVERSIDAD DE VALLADOLID	Post-doctoral researcher (Personal investigador)	15/10/2017
3	Instituto de Ciencias del Mar	Post-doctoral researcher (Personal investigador)	10/10/2016
4	Universidad del País Vasco	Investigador en formación	01/08/2012
5	ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA	Graduated	15/05/2012
6	Ade Inversiones y Servicios - Junta de Castilla y León	Graduated	23/01/2012
7	Universidad de Valladolid	Graduated	01/12/2010

- 1** **Employing entity:** Universidad de Valladolid **Type of entity:** University
Department: Escuela de Ingenierías Industriales
Professional category: Post-doctoral researcher (Investigador posdoctoral Juan de la Cierva)
Start-End date: 15/12/2017 - 14/12/2019
Type of contract: Temporary employment contract

Performed tasks: Beca Juan de la Cierva financiada por el Ministerio de Economía, Industria y Competitividad (nº FJCI-2016-28833). Área de evaluación "Ingeniería Eléctrica, Electrónica y Automática", Dpto Ingeniería de Sistemas y Automática de la Universidad de Valladolid. Tutor: Luis Javier Miguel González. Grupo de investigación: GIR Grupo de Energía, Economía y Dinámica de Sistemas de la Universidad de Valladolid. Contribution to MEDEAS, MODESLOW, ABIGAME and LOCOMOTION projects. Main tasks: - Conception of damage functions that close the existing gap between natural scientists' understanding of ecological feedbacks and the representation of environmental damages in IAMs - Integration of net energy analysis in IAMs - Integration of Input-Output tables in a System Dynamics framework - Development of energy-economy-environment models at different geographical scales (global, regional, country) - Development of the participatory simulation game "Crossroads-World". ASSESSMENT OF THE GRANT: "EXCELLENT" (the highest rank).

Field of management activity: University

2 Employing entity: FUNDACION GENERAL DE LA UNIVERSIDAD DE VALLADOLID

Professional category: Post-doctoral researcher (Personal investigador)

Start-End date: 15/10/2017 - 14/12/2017

Type of contract: Temporary employment contract

Dedication regime: Full time

Primary (UNESCO code): 330800 - Environmental technology and Engineering; 531205 - Energy

Secondary (UNESCO code): 330801 - Air pollution control; 332200 - Power technology; 540101 - Distribution of natural resources; 590208 - Environmental policy

Performed tasks: Post-doctoral researcher working for the H2020 project MEDEAS (<http://www.medeas.eu/>) "Modelling the renewable energy transition in Europe". The global aim of MEDEAS project is to provide policy makers and stakeholders with a new tool, to better assess the impacts and limitations of the EU energy production/consumption system transition to a low-carbon sustainable socio-economy. This tool will integrate energy, raw materials supply and socioeconomic behavior in an energy systems simulation model. I am in charge of the specific following tasks: 1) Adaptation of the global WoLiM model as the global energy submodule of MEDEAS model. 2) Development of climate module of MEDEAS. 3) Integration of climate/environmental impacts in MEDEAS. All tasks 1-3 include the conception, programming and documentation of the model tool. 4) Analysis of scenarios.

Identify key words: Renewable resources; Energy resources; Greenhouse effect; Environmental protection; Climate change; Community environmental policy; Environmental economics; Ecological economy

3 Employing entity: Instituto de Ciencias del Mar **Type of entity:** State agency

Professional category: Post-doctoral researcher (Personal investigador)

Start-End date: 10/10/2016 - 14/10/2017

Type of contract: Temporary employment contract

Dedication regime: Full time

Primary (UNESCO code): 330800 - Environmental technology and Engineering; 531205 - Energy

Secondary (UNESCO code): 330801 - Air pollution control; 332200 - Power technology; 540101 - Distribution of natural resources; 590208 - Environmental policy

Performed tasks: Post-doctoral researcher working for the H2020 project MEDEAS (<http://www.medeas.eu/>) "Modelling the renewable energy transition in Europe". The global aim of MEDEAS project is to provide policy makers and stakeholders with a new tool, to better assess the impacts and limitations of the EU energy production/consumption system transition to a low-carbon sustainable socio-economy. This tool will integrate energy, raw materials supply and socioeconomic behavior in an energy systems simulation model. I am in charge of the specific following tasks: 1) Adaptation of the global WoLiM model as the global energy submodule of MEDEAS model. 2) Development of climate module of MEDEAS. 3) Integration of climate/environmental impacts in MEDEAS. All tasks 1-3 include the conception, programming and documentation of the model tool. 4) Analysis of scenarios.

Identify key words: Renewable resources; Energy resources; Greenhouse effect; Environmental protection; Climate change; Community environmental policy; Environmental economics; Ecological economy

4 **Employing entity:** Universidad del País Vasco **Type of entity:** University

Professional category: Investigador en formación

Start-End date: 01/08/2012 - 31/07/2016

Performed tasks: PhD student in the Faculty of Economics of the University of the Basque Country. As a member of the Low Carbon Programme, I also belonged to the Low Carbon group of the Basque Center for Climate Change (BC3), which is a research institute focused on climate change mitigation and the transition towards a Low carbon economy. My role consisted of research activities in relation with the review, development and application of energy-economy-environment models. I also collaborated with the contribution of BC3 to three international FP7 projects: .COMPLEX, FLAGSHIP and CECILIA2050.

5 **Employing entity:** ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA

Professional category: Graduated

Start-End date: 15/05/2012 - 31/07/2012

Type of contract: Temporary employment contract

Performed tasks: Pre-doctoral before starting the PhD in the UPV/EHU.

6 **Employing entity:** Ade Inversiones y Servicios - Junta de Castilla y León

Department: Fasa Renault (Grupo)

Professional category: Graduated

Start-End date: 23/01/2012 - 30/04/2012

Type of contract: Temporary employment contract

7 **Employing entity:** Universidad de Valladolid **Type of entity:** University

Department: Departamento de Ingeniería de Sistemas y Automática, Escuela de Ingenierías Industriales

City employing entity: Valladolid, Castile and León, Spain

Professional category: Graduated

Start-End date: 01/12/2010 - 01/12/2011

Type of contract: Grant-assisted student (pre or post-doctoral, others)

Performed tasks: Development of the global energy-economy model WoLiM using System Dynamics.



Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

- 1** **University degree:** Higher degree
Name of qualification: Ingeniero Industrial Opción Energética
Degree awarding entity: Universidad de Valladolid **Type of entity:** University
Date of qualification: 12/05/2010
- 2** **University degree:** Higher degree
Name of qualification: Ingenieur de l'École National Supérieure d'Arts et Métiers
Degree awarding entity: École National Supérieure **Type of entity:** University
d'Arts et Métiers (Francia)
Date of qualification: 18/03/2010
- 3** **Name of qualification:** Master E²D² (Electric Energy and Sustainable Development)
Degree awarding entity: Arts et Métiers-ParisTech **Type of entity:** University
Date of qualification: 2009

Doctorates

Doctorate programme: Instrumentos del Análisis Económico
Degree awarding entity: Universidad del País Vasco **Type of entity:** University
City degree awarding entity: Basque Country, Spain
Date of degree: 03/06/2016
European doctorate: No
Thesis title: Development and Application of Environmental Integrated Assessment Modelling towards Sustainability
Thesis director: Alberto Ansuategi Cobo
Thesis co-director: Mikel González Eguino
Obtained qualification: Cum laude (with honors)
Recognition of quality: Yes

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

Type of training: Course
Training title: Hablar de ciencia. Jornadas para asesoramiento y formación del personal investigador en difusión de la ciencia y la tecnología
City awarding entity: Valladolid, Castile and León, Spain
Awarding entity: Universidad de Valladolid **Type of entity:** University
End date: 27/04/2018 **Duration in hours:** 5 hours

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
Serbo Croatian	B2	B2	B2	B2	B2
English	C1	C2	C1	C1	C1
French	C2	C2	C2	C2	C2

Teaching experience

General teaching experience

- 1** **Type of teaching:** Official teaching
Name of the course: European Directives & Research Actions on Energy Efficiency in Buildings
Type of teaching: In person theory
University degree: Master Mundus Joint Master Degree in Smart Cities and Communities (SMACCs)
Start date: 01/09/2019 **End date:** 31/12/2019
Entity: Universidad del País Vasco **Type of entity:** University
City of entity: Bilbao, Spain
- 2** **Name of the course:** Modelado de Sistemas Complejos
University degree: Escuela de Ingenierías Industriales
Start date: 01/09/2018
Entity: Universidad de Valladolid **Type of entity:** University
- 3** **Name of the course:** Ingeniería, Tecnología y Sociedad
University degree: Escuela de Ingenierías Industriales
Start date: 2018
Entity: Universidad de Valladolid **Type of entity:** University
- 4** **Name of the course:** Ingeniería y Sociedad
University degree: Escuela de Ingenierías Industriales
Start date: 2017
Entity: Universidad de Valladolid **Type of entity:** University
- 5** **Name of the course:** Responsabilidad Social del Ingeniero
University degree: Escuela de Ingenierías Industriales
Start date: 2017
Entity: Universidad de Valladolid **Type of entity:** University
Subject language: Spanish
- 6** **Name of the course:** System Dynamics. Modelling and Simulation in Engineering
University degree: Escuela de Ingenierías Industriales
Start date: 2017
Entity: Universidad de Valladolid **Type of entity:** University
Subject language: English

Experience supervising doctoral thesis and/or final year projects

- 1** **Project title:** Análisis sectorial del cambio climático en escenarios de transición energética
Entity: Universidad de Valladolid **Type of entity:** University
Student: Víctor Manuel Prieto de la Viuda
Date of reading: 22/10/2020
- 2** **Project title:** Análisis comparativo de modelo de cambio climático desarrollados en Dinámica de Sistemas
Type of project: Master's thesis
Co-director of thesis: Luis Javier Miguel González
Entity: University of Valladolid
City of entity: Valladolid, Castile and León, Spain
Student: Noelia Ferreras Alonso
Date of reading: 2017
- 3** **Project title:** Análisis de los requerimientos materiales de la transición hacia una movilidad eléctrica
Type of project: End of course project
Co-director of thesis: Margarita Mediavilla
Entity: Universidad de Valladolid **Type of entity:** University
Student: Daniel Pulido Sánchez
Obtained qualification: 9.6
- 4** **Project title:** Análisis del efecto de los cambios de comportamiento sobre los impactos del cambio climático en IAMs basado en dinámica de sistemas
Entity: Universidad de Valladolid **Type of entity:** University
Student: David Álvarez Antelo

Teaching experience in courses and seminars for university teacher training

- 1** **Type of event:** Seminar
Name of the event: "MACROECONOMÍA AMBIENTAL Y SUSTENTABILIDAD" SEMINARIO INTERNACIONAL ECONOMÍA ECOLÓGICA-UNIVALLE
City organizing entity: Colombia
Organising entity: Universidad del Valle
Teaching language: Spanish
Teaching date: 03/10/2020
- 2** **Type of event:** MOOC (Massive Online Open Course)
Name of the event: Simulation models for the design of transition paths towards a sustainable society
City organizing entity: Spain
Organising entity: Universidad de Valladolid **Type of entity:** University
Aims of the course: Describe and teach to use MEDEAS model
(https://iedra.uned.es/courses/course-v1:UNED+SMD_001+2018/about)
Teaching language: English
Teaching date: 2019

Participation in innovative teaching projects

Project title: Uso del gaming en un entorno de aprendizaje basado en la investigación para la docencia de economía ecológica (ABIGAME) - Proyecto de Innovación Educativa

Type of participation: Team member

Contribution to the project: Coordination of model development in order to be adapted to the requirements of teaching and application in the Annual Course of Ecological Economics in the University of Basque Country

Name of the main researcher: David Hoyos

Number of participants: 15

Amount awarded: 2.000 €

Funding entity: Universidad del País Vasco

Type of entity: University

Participating entity/entities:

Universidad de Valladolid

Type of entity: University

Universidad del País Vasco

Type of entity: University

Start-End date: 28/02/2018 - 30/12/2019

Participation in conferences with talks focused on teacher training

- 1 Name of the event:** 5th International Conference on Higher Education Advances (HEAd)
Type of event: Conference
City of event: Valencia, Valencian Community, Spain
Date of presentation: 27/06/2019
Organising entity: Universidad Politécnica de Valencia **Type of entity:** University
A collaborative game-based learning to enhance ecological economics teaching. Valencian Community (Spain): Available on-line at: <<http://www.headconf.org/head19-papers-published/>>. ISSN 2603-5871, ISBN 978-84-9048-661-0
DOI: <http://dx.doi.org/10.4995/HEAd19.2019.9468>
- 2 Name of the event:** III EuroSoTL - Exploring new fields through the scholarship of teaching and learning
Type of event: Conference
City of event: Bilbao, Basque Country, Spain
Date of presentation: 13/06/2019
Organising entity: Universidad del País Vasco **Type of entity:** University
Estimulando la implicación del alumnado en economía ecológica mediante juegos colaborativos. ISBN 978-84-1319-033-4
- 3 Name of the event:** XI Jornadas Docencia en Economía
Type of participation: Participatory - oral communication
City of event: Zaragoza, Aragon, Spain
Date of presentation: 30/05/2019
Organising entity: Facultad de Economía y Empresa Universidad de Zaragoza
City organizing entity: Zaragoza,
A collaborative game-based learning to engage students into ecological economics.

Other activities/achievements not included above

- 1** **Description of the activity:** System Dynamics: ¿is it possible a global transition to sustainability before climate chaos?
City of activity: online,
Organising entity: HEGOA University of the Basque Country
Type of entity: University
End date: 29/10/2020
- 2** **Description of the activity:** Seminario online: "La energía como fuente de subdesarrollo. Elementos clave para una transición energética global" // Online seminar: "The energy as cause of underdevelopment. Key elements for the global energy transition"
Organising entity: HEGOA, University of the Basque Country
End date: 22/10/2019
- 3** **Description of the activity:** Crossroads-World game in Faculty of Commerce of the University of Valladolid (subject: Consumer behavior)
City of activity: Valladolid, Castile and León, Spain
Organising entity: GEEDS-UVa
Type of entity: University
End date: 18/12/2018
- 4** **Description of the activity:** Teaching in university course "V Course of Ecological Economics": Crossroads-World game
City of activity: Bilbao, Basque Country, Spain
Organising entity: Universidad del País Vasco
Type of entity: University
End date: 23/11/2018
- 5** **Description of the activity:** Presentation in summer course "El gas natural y su contribución a la transición energética: ¿aliado o enemigo?"
City of activity: Bilbao, Basque Country, Spain
Organising entity: Universidad del País Vasco
Type of entity: University
End date: 18/06/2018
- 6** **Description of the activity:** Crossroads-World game in Faculty of Education of the University of Valladolid (subject: Education for Peace and Equality)
City of activity: Segovia, Castile and León, Spain
Organising entity: GEEDS-UVa
End date: 06/03/2018
- 7** **Description of the activity:** Teaching in university course "IV Course of Ecological Economics" on "Energy and Development" and coordinating MEDEAS-World game
City of activity: Bilbao, Basque Country, Spain
Organising entity: Universidad del País Vasco
Type of entity: University
End date: 26/10/2017
- 8** **Description of the activity:** Presentation at the Club of Rome Summer School
City of activity: Florence, Italy
Organising entity: Club of Rome
End date: 09/09/2017



- 9** **Description of the activity:** Teaching in university course "III Course of Ecological Economics" with the presentation "Energy and Development"
City of activity: Bilbao, Basque Country, Spain
Organising entity: Universidad del País Vasco **Type of entity:** University
End date: 2015
- 10** **Description of the activity:** Teaching in university course "II Course of Ecological Economics" with the presentation "Energy and Development"
City of activity: Bilbao, Basque Country, Spain
Organising entity: Universidad del País Vasco **Type of entity:** University
End date: 2014
- 11** **Description of the activity:** Teaching in university course "Sustainable transportation: perspectives and challenges" with the presentation "Global Energy Constraints"
City of activity: Valladolid, Castile and León, Spain
Organising entity: Universidad de Valladolid **Type of entity:** University
End date: 2014

Scientific and technological experience

Research and development groups/teams

- 1** **Name of the group:** Low Carbon
Aims of the group: Analyse the implications of the transition to a low carbon economy
Name of principal investigator: Mikel González Eguino
Type of collaboration: Co-authorship of publications
City of group: Bilbao, Basque Country, Spain
Affiliation entity: ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA
Start date: 15/05/2012 **Duration:** 4 years - 2 months
- 2** **Name of the group:** Group of Energy, Economy and System Dynamics
Name of principal investigator: Luis Javier de Miguel González
Type of collaboration: Co-authorship of publications
City of group: Valladolid, Castile and León, Spain
Affiliation entity: Universidad de Valladolid **Type of entity:** University
Start date: 01/12/2010

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

- 1** **Name of the project:** LOCOMOTION: Low Carbon society: an enhanced modelling tool for the transition to sustainability (n. 821105)
Geographical area: European Union
Degree of contribution: Researcher
Entity where project took place: Universidad de Valladolid **Type of entity:** University
Name principal investigator (PI, Co-PI....): Luis Javier Miguel; Simone D'Alessandro; Neven Duic; Leonardo Barreto Gómez; Iñaki Arto; Kurt Kratena; Harald Ulrik Sverdrup; Myrto Theofilidi; Tiago Capela Lourenço; Robert Oakes; Patrizia Heidegger; Santi Sabaté; Cesar Valmaseda
Nº of researchers: 50
Funding entity or bodies: European Union (h2020)
City funding entity: Belgium
Type of participation: Team member
Start-End date: 01/06/2019 - 31/05/2023
Total amount: 6.315.865 €
Applicant's contribution: Iñigo Capellán-Pérez belongs to the working team of UVa (UVa being the coordinator of the whole project).
- 2** **Name of the project:** Modelización y simulación de escenarios de transición energética hacia una economía baja en carbono: el caso español MODESLOW (ECO2017-85110-R)
Entity where project took place: Universidad de Valladolid **Type of entity:** University
City of entity: Valladolid, Castile and León, Spain
Name principal investigator (PI, Co-PI....): Luis Javier Miguel González; Óscar Carpintero Redondo
Funding entity or bodies: Ministerio de Economía, Industria y Competitividad
Start-End date: 01/01/2018 - 01/01/2022 **Duration:** 4 years
Total amount: 41.140 €
- 3** **Name of the project:** Modelización energética para una transición energética sostenible (MENTES)
Geographical area: National
Degree of contribution: Researcher
Entity where project took place: Universidad de Valladolid **Type of entity:** University
City of entity: Spain
Name principal investigator (PI, Co-PI....): María Ángeles Cadarso Vecina (UCLM); Pedro Linares Llamas (UP Comillas); Iñaki Arto Olaizola (BC3); Pablo Arocena Garro (UPN); Luis Javier Miguel González (UVa); Diego García Gusano (IMDEA Energía); Yolanda Lechón Pérez (CIEMAT); Ignacio Cazcarro Castellano (ARAID-UNIZAR)
Name of the programme: Acciones de dinamización «Redes de Investigación»
Code according to the funding entity: RED2018-102794-T
Start-End date: 2019 - 2021 **Duration:** 2 years
Total amount: 15.000 €

Percentage as grant: 100

Applicant's contribution: Creation of a Spanish network of research institutions working on the modelling of the transition towards a sustainable energy system. This network includes 5 universities (Universidad de Castilla-La Mancha, Universidad de Valladolid, Universidad de Zaragoza, Universidad Pública de Navarra y Universidad Pontificia de Comillas) and 3 research centers (CIEMAT, IMDEA-Energía, Basque Research Centre for Climate Change).

- 4 Name of the project:** MEDEAS: Guiding European Policy toward a low-carbon economy. Modelling Energy system Development under Environmental And Socioeconomic constraints

Entity where project took place: Instituto de Ciencias del Mar

Type of entity: State agency

City of entity: Barcelona, Catalonia, Spain

Name principal investigator (PI, Co-PI....): Jordi Solé Ollé

Funding entity or bodies:

Comisión Europea - H2020

Type of entity: Public Research Body

City funding entity: Brussels, Belgium

Code according to the funding entity: Grant agreement no. 691287

Start-End date: 01/01/2016 - 01/01/2020

Duration: 4 years

Total amount: 2.694.117 €

- 5 Name of the project:** COMPLEX: Knowledge Based Climate Mitigation Systems for a Low Carbon Economy

Entity where project took place: ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA

City of entity: Bilbao, Basque Country, Spain

Name principal investigator (PI, Co-PI....): Anil Markandya; Iñaki Arto

Funding entity or bodies:

European Commission - FP7

Type of entity: Public Research Body

City funding entity: Brussels, Belgium

Start-End date: 01/10/2012 - 30/09/2016

Total amount: 5.400.000 €

- 6 Name of the project:** FLAGSHIP: Forward Looking Analysis of Grand Societal Challenges and Innovative Policies

Entity where project took place: ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA

City of entity: Bilbao, Basque Country, Spain

Name principal investigator (PI, Co-PI....): Anil Markandya; Iñaki Arto

Funding entity or bodies:

Comisión Europea - FP7

Type of entity: Public Research Body

City funding entity: Brussels, Belgium

Start-End date: 01/01/2013 - 31/12/2015

Total amount: 2.500.000 €

- 7 Name of the project:** CECILIA2050- Choosing Efficient Combinations of Policy Instruments for Low-carbon development and Innovation to Achieve Europe's 2050 climate targets

Entity where project took place: ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA

City of entity: Bilbao, Basque Country, Spain

Name principal investigator (PI, Co-PI....): Anil Markandya; Mikel González-Eguino

Funding entity or bodies:



European Commission - FP7

City funding entity: Brussels, Belgium

Start-End date: 01/09/2012 - 31/10/2015

Total amount: 3.470.770 €

Type of entity: Public Research Body

R&D non-competitive contracts, agreements or projects with public or private entities

Name of the project: Cambio Climático y Energía: Análisis prospectivo de las implicaciones territoriales de la transición a energías renovables en Europa

Degree of contribution: Researcher

Name principal investigator (PI, Co-PI....): Iñaki Arto; Carlos de Castro Carranza

Funding entity or bodies:

ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA

City funding entity: Spain

Start date: 01/03/2018

Duration: 13 months

Total amount: 6.872,11 €

Scientific and technological activities

Scientific production

H index: 6

Date of application: 08/01/2019

Publications, scientific and technical documents

- 1** Ignacio de Blas; Margarita Mediavilla; Iñigo Capellán-Pérez; Carmen Duce. The limits of transport decarbonization under the current growth paradigm. Energy Strategy Reviews. 32, pp. 100543. Elsevier, 01/11/2020.
DOI: <https://doi.org/10.1016/j.esr.2020.100543>
Type of production: Scientific paper **Format:** Journal
Degree of contribution: Author or co-author of article in journal with external admissions assessment committee
Corresponding author: No
- 2** J. Solé; R. Samsó; E. García-Ladona; A. García-Olivares; J. Ballabrera-Poy; T. Madurell; A. Turiel; O. Osychenko; D. Álvarez-Antelo; U. Bardi; K. Buchmann; I Capellán-Pérez et al. Modelling the renewable transition: Scenarios and pathways for a decarbonized future using pymedeas, a new open-source energy systems model. Renewable and Sustainable Energy Reviews. 132, pp. 110105. Elsevier, 01/10/2020.
DOI: <https://doi.org/10.1016/j.rser.2020.110105>
Type of production: Scientific paper **Format:** Journal
Relevant results: Joint publication of the whole MEDEAS h2020 consortium summarizing the main results of the project. Note: researchers from UVa, as indicated in Acknowledgements, participated in the investigation & software through the development of the model. Not in the elaboration of the scenarios and results showed in the paper.

- 3** Carlos de Castro; Iñigo Capellán-Pérez. Standard, Point of Use, and Extended Energy Return on Energy Invested (EROI) from Comprehensive Material Requirements of Present Global Wind, Solar, and Hydro Power Technologies. *energies*. 13 - 3036, MDPI, 12/06/2020. Available on-line at: <<https://www.mdpi.com/1996-1073/13/12/3036/htm>>.
DOI: <https://doi.org/10.3390/en13123036>
Collection: Special Issue Rethinking Energy: Earth System Science Approaches 2020
Type of production: Scientific paper **Format:** Journal
Corresponding author: No
Impact source: ISI **Category:** Energy & Fuels
Impact index in year of publication: 2.702 **Journal in the top 25%:** No
- 4** Iñigo Capellán-Pérez; Nadia Johannisova; Jasminka Young; Conrad Kunze. Is community energy really non-existent in post-socialist Europe? Examining recent trends in 16 countries. *Energy Research & Social Science*. 61, pp. 101348. Elsevier, 01/03/2020.
DOI: [10.1016/j.erss.2019.101348](https://doi.org/10.1016/j.erss.2019.101348)
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
- 5** Ignacio de Blas; Carlos de Castro; Luis Javier Miguel; Óscar Carpintero; Margarita Mediavilla; Luis Fernando Lobejón; Noelia Ferreras-Alonso; Paula Rodrigo; Fernando Frechoso; David Álvarez-Antelo. MEDEAS: a new modeling framework integrating global biophysical and socioeconomic constraints. *Energy & Environmental Science*. 13 - 3, pp. 986 - 1017. Royal Society of Chemistry, 25/02/2020. Available on-line at: <<https://pubs.rsc.org/en/content/articlelanding/2020/EE/C9EE02627D>>.
DOI: <https://doi.org/10.1039/C9EE02627D>
Type of production: Scientific paper **Format:** Journal
Degree of contribution: Author or co-author of article in journal with external admissions assessment committee
Total no. authors: 12 **Corresponding author:** Yes
Relevant results: This publications synthetizes and collates the work performed by the research group GEEDS-UVa in the h2020 project MEDEAS (2016-2019) in which we were fully responsible in the framework of the MEDEAS European project. My role of main author of the paper was two-fold: (1) coordinate the description of the methodological sections between all contributing authors (section 2 Material and methods) and (2) lead the simulation scenarios reported and the subsequent discussion.
- 6** Iñigo Capellán-Pérez; Carlos de Castro; Luis Javier Miguel. Dynamic Energy Return on Energy Investment (EROI) and material requirements in scenarios of global transition to renewable energies. *Energy Strategy Reviews*. 26, pp. 100399. Elsevier, 01/11/2019. Available on-line at: <<http://www.sciencedirect.com/science/article/pii/S2211467X19300926>>.
DOI: [10.1016/j.esr.2019.100399](https://doi.org/10.1016/j.esr.2019.100399)
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes
Impact source: ISI
Impact index in year of publication: 3.895
- 7** Ignacio de Blas; Luis Javier Miguel; Iñigo Capellán-Pérez. Modelling of sectoral energy demand through energy intensities in MEDEAS integrated assessment model. *Energy Strategy Reviews*. 26, pp. 100419. 01/11/2019.
DOI: [10.1016/j.esr.2019.100419](https://doi.org/10.1016/j.esr.2019.100419)
Type of production: Scientific paper **Format:** Journal
Impact source: ISI
Impact index in year of publication: 3.895



- 8** Vicente Sebastián Espinoza; Javier Fontalvo; Jaime Martí-Herrero; Paola Ramírez; Iñigo Capellán-Pérez. Future Oil Extraction in Ecuador using a Hubbert Approach. *Energy*. 182, pp. 520 - 534. Elsevier, 01/09/2019. Available on-line at: <<http://www.sciencedirect.com/science/article/pii/S0360544219311922>>. ISSN 0360-5442
DOI: 10.1016/j.energy.2019.06.061
Type of production: Scientific paper **Format:** Journal
- 9** Iñigo Capellán-Pérez; David Álvarez-Antelo; Luis J. Miguel González. Global Sustainability Crossroads: A Participatory Simulation Game to Educate in the Energy and Sustainability Challenges of the 21st Century. *Sustainability*. 11 - 13, pp. 3672. MDPI, 04/07/2019. Available on-line at: <<https://www.mdpi.com/2071-1050/11/13/3672>>.
DOI: 10.3390/su11133672
Type of production: Scientific paper **Format:** Journal
Impact source: ISI **Category:** Environmental Sciences (SCIE); Green & Sustainable Science & Technology (SCIE); Environmental Studies (SSCI); Green & Sustainable Science & Technology (SSCI)
Impact index in year of publication: 2.576 **Journal in the top 25%:** No
- 10** Iñigo Capellán-Pérez; Álvaro Campos-Celador; Jon Terés-Zubiaga. Renewable Energy Cooperatives as an instrument towards the energy transition in Spain. *Energy Policy*. Elsevier, 12/2018. Available on-line at: <<https://www.sciencedirect.com/science/article/pii/S0301421518305937>>.
DOI: <https://doi.org/10.1016/j.enpol.2018.08.064>
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes **Category:** (year 2017)
Impact source: ISI
Impact index in year of publication: 4.039
- 11** Carlos de Castro; Iñigo Capellán-Pérez. Concentrated Solar Power: Actual Performance and Foreseeable Future in High Penetration Scenarios of Renewable Energies. *BioPhysical Economics and Resource Quality*. Springer Nature, 27/08/2018.
DOI: <https://doi.org/10.1007/s41247-018-0043-6>
Type of production: Scientific paper **Format:** Journal
- 12** Iñigo Capellán-Pérez; Carlos de Castro; Iñaki Arto. Assessing vulnerabilities and limits in the transition to renewable energies: Land requirements under 100% solar energy scenarios. *Renewable & Sustainable Energy Reviews*. 77, pp. 760 - 782. 01/09/2017. Available on-line at: <<http://www.sciencedirect.com/science/article/pii/S1364032117304720>>.
Type of production: Scientific paper **Format:** Journal
Corresponding author: Yes **Category:** ENERGY & FUELS - SCIE; GREEN & SUSTAINABLE SCIENCE & TECHNOLOGY - SCIE;
Impact source: ISI **Journal in the top 25%:** Yes
Impact index in year of publication: 9.184
- 13** Gorka Bueno; David Hoyos; Iñigo Capellán-Pérez. Evaluating the environmental performance of the high speed rail project in the Basque Country, Spain. *Research in Transportation Economics*. 27/02/2017. Available on-line at: <<http://www.sciencedirect.com/science/article/pii/S0739885916301172>>.
Type of production: Scientific paper **Format:** Journal
Corresponding author: No **Category:** Q3 in ECONOMICS - SSCI; Q4 in TRANSPORTATION - SSCI
Impact source: ISI
Impact index in year of publication: 0.992

- 14** Mikel González Eguino; Marc B. Neumann; Iñaki Arto; Iñigo Capellán Pérez; Sergio H. Faria. Mitigation implications of an ice-free summer in the Arctic Ocean. *Earth's Future*. 136 - 2, pp. 381 - 388. American Geophysical Union, 18/01/2017. Available on-line at: <<http://onlinelibrary.wiley.com/doi/10.1002/2016EF000429/full>>.
- Type of production:** Scientific paper **Format:** Journal
- Corresponding author:** No
- Impact source:** ISI **Category:** ENVIRONMENTAL SCIENCES - SCIE; GEOSCIENCES, MULTIDISCIPLINARY - SCIE; METEOROLOGY & ATMOSPHERIC SCIENCES - SCIE
- Impact index in year of publication:** 4.594 **Journal in the top 25%:** Yes
- 15** Mikel González-Eguino; Iñigo Capellán-Pérez; Iñaki Arto; Alberto Ansuategi; Anil Markandya. Industrial and terrestrial carbon leakage under climate policy fragmentation. *Climate Policy*. 17 - sup1, pp. S148 - S169. Taylor and Francis, 29/11/2016. Available on-line at: <<http://www.tandfonline.com/doi/abs/10.1080/14693062.2016.1227955>>.
- Type of production:** Scientific paper **Format:** Journal
- Corresponding author:** No
- Impact source:** ISI **Category:** ENVIRONMENTAL STUDIES - SSCI; PUBLIC ADMINISTRATION - SSCI;
- Impact index in year of publication:** 2.735 **Journal in the top 25%:** Yes
- 16** Iñaki Arto; Iñigo Capellán-Pérez; Rosa Lago; Gorka Bueno; Roberto Bermejo. The energy requirements of a developed world. *Energy for Sustainable Development*. 33, pp. 1 - 13. Elsevier, 08/2016. Available on-line at: <www.sciencedirect.com/science/article/pii/S0973082616301892>.
- Type of production:** Scientific paper **Format:** Journal
- Corresponding author:** No
- Impact source:** ISI **Category:** Q2 in GREEN & SUSTAINABLE SCIENCE & TECHNOLOGY - SCIE; Q2 in ENERGY & FUELS - SCIE
- Impact index in year of publication:** 2.790 **Journal in the top 25%:** No
- 17** Iñigo Capellán-Pérez; Iñaki Arto; Josué M. Polanco-Martínez; Mikel González-Eguino; Marc B. Neumann. Likelihood of climate change pathways under uncertainty on fossil fuel resources availability. *Energy & Environmental Science*. 9 - 8, Royal Society of Chemistry, 06/2016. Available on-line at: <<http://pubs.rsc.org/en/Content/ArticleLanding/2016/EE/c6ee01008c#divAbstract>>.
- Type of production:** Scientific paper **Format:** Journal
- Corresponding author:** Yes
- Impact source:** ISI **Category:** CHEMISTRY, MULTIDISCIPLINARY - SCIE; ENERGY & FUELS - SCIE; ENGINEERING, CHEMICAL - SCIE; ENVIRONMENTAL SCIENCES - SCIE;
- Impact index in year of publication:** 29.518 **Journal in the top 25%:** Yes
- 18** Mikel González-Eguino; Iñigo Capellán-Pérez; Iñaki Arto; Alberto Ansuategi; Anil Markandya. Industrial and terrestrial carbon leakage under climate policy fragmentation. *BC3 Working Paper*. Basque Centre for Climate Change, 02/2016.
- Type of production:** Scientific paper **Format:** Scientific and technical document or report
- Corresponding author:** No
- 19** Iñigo Capellán-Pérez; Margarita Mediavilla; Carlos de Castro; Óscar Carpintero; Luis Javier Miguel. More growth? An unfeasible option to overcome critical energy constraints and climate change. *Sustainability Science*. 10 - 3, pp. 397 - 411. 07/2015. Available on-line at: <<http://link.springer.com/article/10.1007/s11625-015-0299-3>>.

Type of production: Scientific paper

Corresponding author: Yes

Impact source: ISI

Format: Journal

Category: Q1 in ENVIRONMENTAL SCIENCES - SCIE; Q2 in GREEN & SUSTAINABLE SCIENCE & TECHNOLOGY - SCIE;

Impact index in year of publication: 2.494

- 20** Iñigo Capellán-Pérez; Margarita Mediavilla; Carlos de Castro; Óscar Carpintero; Luis Javier Miguel. Fossil fuel depletion and socio-economic scenarios: An integrated approach. *Energy*. 77, pp. 641 - 666. Elsevier, 12/2014. Available on-line at: <<http://www.sciencedirect.com/science/article/pii/S0360544214011219>>.

Type of production: Scientific paper

Format: Journal

Corresponding author: Yes

Impact source: ISI

Category: THERMODYNAMICS - SCIE; ENERGY & FUELS - SCIE

Impact index in year of publication: 4.844

Journal in the top 25%: Yes

- 21** Iñigo Capellán-Pérez; Mikel González-Eguino; Iñaki Arto; Alberto Ansuategi; Kishore Dhavala; Pralit Patel; Anil Markandya. New climate scenario framework implementation in the GCAM integrated assessment model. *BC3 Working Papers*. Basque Centre for Climate Change, 07/2014.

Type of production: Scientific paper

Format: Scientific and technical document or report

Corresponding author: Yes

- 22** M. Mediavilla; C. de Castro; I. Capellán; L. Javier Miguel; I. Arto; F. Frechoso. The transition towards renewable energies: Physical limits and temporal conditions. *Energy Policy*. 52, pp. 297 - 311. 01/2013. Available on-line at: <<http://www.sciencedirect.com/science/article/pii/S0301421512008087>>.

Type of production: Scientific paper

Format: Journal

Impact source: ISI

Category: ENVIRONMENTAL STUDIES - SSCI

Impact index in year of publication: 2.696

Journal in the top 25%: Yes

- 23** Iñigo Capellán-Pérez; Carlos de Castro. Transición a energías renovables y demanda de minerales. *El Ecologista*. 102, pp. 26 - 29. *Ecologistas en Acción*, 15/12/2019. Available on-line at: <<https://www.ecologistasenaccion.org/133199/transicion-a-energias-renovables-y-demanda-de-minerales/>>.

Type of production: Popular science article

Format: Journal

- 24** Iñigo Capellán-Pérez; Hoyos David. La Y vasca no se sostiene. *El Ecologista*. 93, pp. 17 - 21. 10/2017. Available on-line at: <<https://www.ecologistasenaccion.org/article35173.html>>.

Type of production: Popular science article

Format: Journal

Total no. authors: 2

Corresponding author: Yes

- 25** Iñigo Capellán-Pérez; Iñaki Arto. Energía, desarrollo y transición hacia la sostenibilidad. *El Ecologista*. 91, pp. 23 - 25. 2016. Available on-line at: <<http://www.ecologistasenaccion.org/article91.html?artpage=2-2>>.

Type of production: Popular science article

Format: Journal

Total no. authors: 2

Corresponding author: Yes

- 26** Iñigo Capellán-Pérez; Carlos de Castro. Cambio climático, modelos e IPCC. *El Ecologista*. 84, pp. 18 - 20. 2015. Available on-line at: <<http://www.ecologistasenaccion.org/article29793.html>>.

Type of production: Popular science article

Format: Journal

Corresponding author: Yes

- 27** Iñigo Capellán-Pérez. ¿Por qué fracasan las cumbres climáticas?: entre la protección de los intereses privados y la complejidad del sistema. *El Ecologista*. 85, pp. 28 - 30. 2015. Available on-line at: <http://www.ecologistasenaccion.org/article30324.html>.
Type of production: Popular science article **Format:** Journal
Corresponding author: Yes
- 28** Carlos de Castro; Iñigo Capellán-Pérez. Ciencia y tecnología para la sostenibilidad. Repensar la sostenibilidad. 2019.
Type of production: Book chapter **Format:** Book
- 29** Iñigo Capellán-Pérez; Carlos de Castro. Los límites ecológicos del mundo. Repensar la Sostenibilidad. 2019.
Type of production: Book chapter **Format:** Book
- 30** David Hoyos; Gorka Bueno; Iñigo Capellán-Pérez. Environmental assessment of high-speed rail-high-speed rail. Evaluating High-Speed Rail. pp. 120 - 139. Routledge, 2017. Available on-line at: <https://www.routledge.com/Evaluating-High-Speed-Rail-Interdisciplinary-perspectives/Albalade-Bel/p/book/9781138123595>. ISBN 978-1138123595
Type of production: Book chapter **Format:** Book
Corresponding author: No
- 31** Christian Kershner; Iñigo Capellán Pérez. Peak-Oil and Ecological Economics. Routledge Handbook of Ecological Economics: Nature and Society. Routledge, 2017. Available on-line at: <https://www.routledge.com/Routledge-Handbook-of-Ecological-Economics-Nature-and-Society/Spash/p/book/9781138931510>. ISBN 978-1138931510
Type of production: Book chapter **Format:** Book
- 32** I Capellán-Pérez; I Arto; J.M. Polanco-Martínez; M. González-Eguino; M.B Neumann; D. Kovalevsky; A. Markandya; S.M. Moghayer; M.B. Tariku. Climate Change Pathways and Uncertainty on Recoverable Energy Resources. Establishing Policy-Relevance: Developing and Evaluating Policy Options. 3b, Sigtunastiftelsen, Sigtuna, Sweden, 2016. Available on-line at: http://owsgip.itc.utwente.nl/projects/complex/images/uploaded_files/COMPLEX_Vol_3b_final.pdf. ISBN 978 - 91 - 976048 - 3 - 3
Type of production: Book chapter **Format:** Book
- 33** I Arto; I Capellán-Pérez; T. Filatova; M. González-Eguino; K. Hasselmann; D. Kovalevsky; A. Markandya; S.M. Moghayer; M.B. Tariku. Climate mitigation policies. Non-linearities and system-flips. 2, Sigtunastiftelsen, Sigtuna, Sweden, 2016. Available on-line at: <http://owsgip.itc.utwente.nl/projects/complex/index.php/final-scientific-report>. ISBN 978-91-976048-2-6
Type of production: Book chapter **Format:** Book
- 34** I Arto; I Capellán-Pérez; T. Filatova; M. González-Eguino; K. Hasselmann; D. Kovalevsky; A. Markandya; S.M. Moghayer; M.B. Tariku. Coupled environment-ecology modelling. Non-linearities and system-flips. 2, Sigtunastiftelsen, Sigtuna, Sweden, 2016. Available on-line at: <http://owsgip.itc.utwente.nl/projects/complex/index.php/final-scientific-report>. ISBN 978-91-976048-2-6
Type of production: Book chapter **Format:** Book
- 35** I Arto; I Capellán-Pérez; T. Filatova; M. González-Eguino; K. Hasselmann; D. Kovalevsky; A. Markandya; S.M. Moghayer; M.B. Tariku. Definitions. Non-linearities and system-flips. 2, Sigtunastiftelsen, Sigtuna, Sweden, 2016. Available on-line at: <http://owsgip.itc.utwente.nl/projects/complex/index.php/final-scientific-report>. ISBN 978-91-976048-2-6
Type of production: Book chapter **Format:** Book

- 36** I Arto; I Capellán-Pérez; T. Filatova; M. González-Eguino; K. Hasselmann; D. Kovalevsky; A. Markandya; S.M. Moghayer; M.B. Tariku. Lake systems. Non-linearities and system-flips. 2, Sigtunastiftelsen, Sigtuna, Sweden, 2016. Available on-line at: <<http://owsgip.itc.utwente.nl/projects/complex/index.php/final-scientific-report>>. ISBN 978-91-976048-2-6
Type of production: Book chapter **Format:** Book
- 37** I Arto; I Capellán-Pérez; T. Filatova; M. González-Eguino; K. Hasselmann; D. Kovalevsky; A. Markandya; S.M. Moghayer; M.B. Tariku. Socio-ecological systems. Non-linearities and system-flips. 2, Sigtunastiftelsen, Sigtuna, Sweden, 2016. Available on-line at: <<http://owsgip.itc.utwente.nl/projects/complex/index.php/final-scientific-report>>. ISBN 978-91-976048-2-6
Type of production: Book chapter **Format:** Book
- 38** I Arto; I Capellán-Pérez; T. Filatova; M. González-Eguino; K. Hasselmann; D. Kovalevsky; A. Markandya; S.M. Moghayer; M.B. Tariku. The climate system. Non-linearities and system-flips. 2, Sigtunastiftelsen, Sigtuna, Sweden, 2016. Available on-line at: <<http://owsgip.itc.utwente.nl/projects/complex/index.php/final-scientific-report>>. ISBN 978-91-976048-2-6
Type of production: Book chapter **Format:** Book
- 39** Iñaki Bárcena; Josu Larrinaga; Izaro Gorostidi; Iñigo Capellán Pérez; Gorka Bueno; Germà Bel; David Hoyos; Roberto Bermejo; Iñaki Antigüedad. Análisis transdisciplinar del modelo ferroviario de alta velocidad: el proyecto de Nueva Red Ferroviaria para el País Vasco. Cuadernos de trabajo HEGOA. 71, pp. 1 - 54. 2016. Available on-line at: <<http://publicaciones.hegoa.ehu.es/publications/355>>. ISSN 1130-9962
Type of production: Scientific book or monograph **Format:** Book
Total no. authors: 8 **Corresponding author:** No
- 40** D6.2. Costs of the transition. Deliverable from MEDEAS project. 31/10/2018.
Type of production: Scientific-technical report
Relevant results: Iñigo was in charge of the subtasks 6.2a ("Energy costs of the transition") and 6.2b ("Material costs of the transition") to be carried out by UVA.
- 41** David Álvarez Antelo; Ignacio de Blas; Iñigo Capellán-Pérez; Óscar Carpintero; Carlos de Castro; Fernando Frechoso; Luis Fernando Lobejón; Pedro L. Lomas; Margarita Mediavilla; Luis Javier Miguel; Jaime Nieto; Gonzalo Parrado; Paula Rodríguez González. D4.3 MEDEAS Model and IOA implementation at country level: the cases of Austria and Bulgaria. Deliverable from MEDEAS project. 31/07/2018.
Type of production: Scientific-technical report **Format:** Scientific and technical document or report
- 42** Ignacio de Blas; Iñigo Capellán-Pérez; Óscar Carpintero Redondo; Carlos de Castro; Fernando Frechoso; Luis Fernando Lobejón; Pedro L. Lomas Huertas; Margarita Mediavilla; Luis Javier Miguel; Jaime Nieto; Paula Rodrigo González. D4.2 MEDEAS European model. Deliverable from MEDEAS project. 28/02/2018.
Type of production: Scientific-technical report **Format:** Scientific and technical document or report
Relevant results: This deliverable documents the MEDEAS-European Union model.
- 43** Iñigo Capellán-Pérez; Ignacio de Blas; Jaime Nieto; Carlos de Castro; Luis Javier Miguel; Margarita Mediavilla; Óscar Carpintero; Paula Rodrigo; Fernando Frechoso; Santiago Cáceres. D4.1 Global Model: MEDEAS - World Model and IOA implementation at global geographical level. Deliverable MEDEAS project. 30/06/2017.
Type of production: Scientific-technical report **Format:** Scientific and technical document or report
Relevant results: This deliverable documents the MEDEAS-World model.
- 44** Iñigo Capellán-Pérez; Carlos de Castro; Margarita Mediavilla; Luis Javier Miguel; Ignacio de Blas Sanz; Óscar Carpintero; Fernando Frechoso; Jaime Nieto. World Limits Model (WoLiM) 1.5 Model Documentation. GEEDS Working Paper. GEEDS, 01/01/2017. Available on-line at: <http://www.eis.uva.es/energiasostenible/?page_id=2056>.
Type of production: Scientific-technical report **Format:** Scientific and technical document or report

Corresponding author: Yes

- 45** Iñigo Capellán-Pérez; Alberto Ansuategi; Ibon Galarraga. European Biofuels Policy and its Contribution to a Low Carbon Future. BC3 Policy Briefing. Basque Centre for Climate Change, 07/2015.

Type of production: Scientific-technical report

Format: Scientific and technical document or report

Corresponding author: Yes

- 46** World Limits Model (WoLiM) 1.0 - Model Documentation. Technical Report. GEEDS Working Paper. 05/2014.

Type of production: Scientific-technical report

Format: Scientific and technical document or report

Corresponding author: Yes

Works submitted to national or international conferences

- 1** **Title of the work:** Mineral requirements associated to energy transitions: the MEDEAS approach to identify availability risks

Name of the conference: Energy Modelling Platform for Europe (EMP-E 2020)

Type of event: Conference

Corresponding author: Yes

City of event: online,

Date of event: 06/10/2020

End date: 08/10/2020

Organising entity: EMP-E h2020 projects

- 2** **Title of the work:** Educar para la transición hacia sociedades sostenibles

Name of the conference: V Congreso Internacional de Estudios del Desarrollo

City of event: Bilbao, Spain

Date of event: 27/05/2020

End date: 29/05/2020

Organising entity: Red Española de Estudios de Desarrollo (REEDES)

Iñigo Capellán-Pérez; José María Enríquez Sánchez; David Álvarez Antelo; Gonzalo Parrado; Carmen Duce.

- 3** **Title of the work:** Scenario modelling of global transport decarbonization with technological and lifestyle changes

Name of the conference: International Conference 2020 on Low-Carbon Lifestyle Changes

Corresponding author: Yes

City of event: online (initially set at Barcelona, Spain),

Date of event: 06/05/2020

Organising entity: Instituto de Ciencia y Tecnología **Type of entity:** University Research Institute Ambientales

Iñigo Capellán-Pérez; Ignacio de Blas; Margarita Mediavilla; Carmen Duce. Available on-line at: <<https://lifestyle-changes.org/>>.

- 4** **Title of the work:** La dependencia mineral de la transición energética

Name of the conference: Minería y extractivismos. Diálogo entre la academia y los movimientos sociales

City of event: Granada, Andalusia, Spain

Date of event: 09/05/2019

End date: 10/05/2019

Organising entity: STAND UGR (South Training Action Network of Decoloniality - Accionando Decolonialidades)

City organizing entity: Spain

Iñigo Capellán-Pérez; Carlos de Castro. Available on-line at: <<https://standugr.com/2018/12/17/call-for-papers-mineria-y-extractivismos-dialogo-entre-la-academia-y-los-movimientos-sociales-granada-9-10-may-2019/>>.

- 5** **Title of the work:** The potential land-use impacts from Solar Energy
Name of the conference: XIV Congreso de la Asociación Española para la Economía Energética
City of event: La Coruña, Galicia, Spain
Date of event: 01/02/2019
Organising entity: Asociación Española para la Economía Energética
Dir-Jan van de Ven; Iñigo Capellán-Pérez; Iñaki Arto; Ignacio Cazarro; Carlos de Castro; Pralit Patel; Mikel González-Eguino.
- 6** **Title of the work:** Encrucijada-Mundo: una dinámica educativa en la búsqueda del desarrollo la sostenible
Name of the conference: IV Congreso Internacional de Estudios del Desarrollo
City of event: Córdoba, Andalusia, Spain
Date of event: 12/12/2018
End date: 14/12/2018
Organising entity: Red Española de Estudios del Desarrollo (REEDES)
Iñigo Capellán-Pérez; Carmen Duce Díaz; José María Enríquez Sánchez; Luis Javier Miguel.
- 7** **Title of the work:** MEDEAS: modelo de simulación global para la búsqueda de caminos de transición hacia una sociedad sostenible
Name of the conference: IV Congreso Internacional de Estudios del Desarrollo
City of event: Córdoba, Andalusia, Spain
Date of event: 12/12/2018
End date: 14/12/2018
Organising entity: Red Española de Estudios del Desarrollo (REEDES)
Carmen Duce Díaz; Iñigo Capellán-Pérez; Jaime Nieto Vega; Luis Javier Miguel González.
- 8** **Title of the work:** MEDEAS-World: a new IAM framework integrating biophysical and socioeconomic constraints
Name of the conference: 11th Annual Meeting of the Integrated Assessment Modeling Consortium (IAMC)
Type of event: Conference
Type of participation: Participatory - oral communication
Reasons for participation: Review before acceptance
Corresponding author: Yes
City of event: Sevilla, Andalusia, Spain
Date of event: 13/11/2018
End date: 15/11/2018
Organising entity: Integrated Assessment Modeling Consortium
Iñigo Capellán-Pérez; Ignacio de Blas; Jaime Nieto; Carlos De Castro; Luis Javier Miguel; Margarita Mediavilla; Óscar Carpintero; Luis Fernando Lobejón; Noelia Ferreras-Alons; Paula Rodrigo; Fernando Frechoso; David Álvarez Antelo; Pedro L. Lomas; Gonzalo Parrado Hernando. Available on-line at: <<http://www.globalchange.umd.edu/iamc/events/eleventh-annual-meeting-of-the-iamc-2018/>>.
- 9** **Title of the work:** The Potential Land-use Impacts from Solar Energy
Name of the conference: 11th Annual Meeting of the Integrated Assessment Modeling Consortium (IAMC)
Type of event: Conference
Type of participation: Participatory - oral communication
Reasons for participation: Review before acceptance
Corresponding author: No
City of event: Sevilla, Andalusia, Spain

Date of event: 13/11/2018

End date: 15/11/2018

Organising entity: Integrated Assessment Modeling Consortium

Dirk-Jan van de Ven; Iñigo Capellán-Pérez; Iñaki Arto; Ignacio Cazcarro; Mikel González-Eguino; Carlos De Castro. Available on-line at:

<<http://www.globalchange.umd.edu/iamc/events/eleventh-annual-meeting-of-the-iamc-2018/>>.

- 10** **Title of the work:** Modelling the changes in the EROI in the energy transition
Name of the conference: Energy Modelling Platform for Europe 2018 (EMP-E 2018) Modelling clean energy pathways
Geographical area: European Union
Type of participation: 'Participatory - poster
City of event: Brussels, Belgium
Date of event: 25/09/2018
End date: 26/09/2018
Organising entity: Energy Modelling Platform for Europe
Iñigo Capellán-Pérez; Carlos de Castro; Ignacio de Blas; Luis Javier Miguel.

- 11** **Title of the work:** Cooperativismo energético de energías renovables en España: adaptación, innovación y colaboración en un contexto hostil
Name of the conference: XVI Jornadas de Economía Crítica
Reasons for participation: Review before acceptance
City of event: León, Castile and León, Spain
Date of event: 20/09/2018
Organising entity: Asociación de Economía Crítica
City organizing entity: Spain
Álvaro Campos Celador; Iñigo Capellán-Pérez; Jon Terés-Zubiaga.

- 12** **Title of the work:** Modelling towards Sustainability
Name of the conference: The Institutionalisation of Degrowth & Post-growth : the European level
Reasons for participation: Review before acceptance
City of event: Brussels, Belgium
Date of event: 17/09/2018
Organising entity: Université Libre de Bruxelles and the Research&Degrowth network
Iñigo Capellán-Pérez.

- 13** **Title of the work:** Dynamic EROI of the global energy system in future scenarios of transition to renewable energies
Name of the conference: 3rd South-East European Conference on Sustainable Development of Energy, Water and Environment systems (SDEWES)
Type of event: Conference
Corresponding author: Yes
City of event: Novi Sad, Serbia
Date of event: 01/07/2018
Organising entity: International Centre for Sustainable Development of Energy, Water and Environment systems
Type of entity: Innovation and Technology Centres
City organizing entity: Zagreb, Croatia
Iñigo Capellán-Pérez; Carlos de Castro; Luis Javier Miguel.

- 14 Title of the work:** Modelling sustainable energy system development under energy and environmental constraints
Name of the conference: 12th Conference of the European Society for Ecological Economics
City of event: Budapest, Hungary
Date of event: 22/06/2017
Organising entity: European Society for Ecological Economics
Jaime Nieto; Iñigo Capellán-Pérez; Luis J. Miguel; Margarita Mediavilla; Carlos de Castro; Óscar Carpintero; Fernando Frechoso; Santiago Cáceres.
- 15 Title of the work:** Integration of global environmental change threat to human societies in energy-economy-environment models
Name of the conference: 12th Conference of the European Society for Ecological Economics
Corresponding author: Yes
City of event: Budapest, Hungary
Date of event: 21/06/2017
Organising entity: European Society for Ecological Economics
Iñigo Capellán-Pérez; Carlos de Castro.
- 16 Title of the work:** Macro-economic and dynamic energy-economy-environment modelling: transition scenarios towards a low carbon economy
Name of the conference: 12th Conference of the European Society for Ecological Economics
City of event: Budapest, Hungary
Date of event: 21/06/2017
Organising entity: European Society for Ecological Economics
Jaime Nieto; Óscar Carpintero; Luis J. Miguel; Ignacio de Blas; Margarita Mediavilla; Carlos de Castro; Fernando Frechoso; Santiago Cáceres; Iñigo Capellán-Pérez.
- 17 Title of the work:** Is high speed rail a sustainable mobility option? Assessing the environmental contribution of HSR in the Basque country, Spain
Name of the conference: 5TH INTERNATIONAL SYMPOSIUM ON ENVIRONMENT ENERGY & FINANCE ISSUES
Type of event: Conference
Corresponding author: No
City of event: Paris, Île de France, France
Date of event: 23/05/2017
Organising entity: IPAG Business School, Centre of Geopolitics of Energy and Raw Materials (Paris Dauphine University) and International Association for Energy Economics
David Hoyos; Gorka Bueno; Iñigo Capellán-Pérez.
- 18 Title of the work:** Assessment of the potential of Renewable Energy Sources Cooperatives (RESCoops) in Spain towards Sustainable Degrowth
Name of the conference: 5th International Degrowth Conference
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Budapest, Hungary
Date of event: 30/08/2016
End date: 03/09/2016
Organising entity: Research & Degrowth
Iñigo Capellán Pérez; Alvaro Campos Celador; Jon Terés Zubiaga.

- 19** **Title of the work:** Implications of the uncertainty of energy resources on CO2 emission pathways
Name of the conference: JGCRI 2015 Integrated Assessment Workshop and GCAM Community Modeling Meeting
Type of participation: Participatory - oral communication
City of event: College Park, United States of America
Date of event: 02/12/2015
Organising entity: JGCRI
Iñigo Capellán-Pérez; Iñaki Arto; Josué M. Polanco-Martínez; Mikel González Eguino; Marc B. Neumann.
- 20** **Title of the work:** Exploring a global a-growth pathway from the energy perspective
Name of the conference: 11th International Conference of the European Society of Ecological Economics
Type of participation: Participatory - oral communication
City of event: Leeds, West Yorkshire, United Kingdom
Date of event: 30/06/2015
End date: 03/07/2015
Organising entity: European Society of Ecological Economics
Iñigo Capellán-Pérez; Margarita Mediavilla; Carlos de Castro; Óscar Carpintero; Luis Javier Miguel.
- 21** **Title of the work:** Probabilistic CO2 emission scenarios under fossil energy resource depletion
Name of the conference: 11th International Conference of the European Society of Ecological Economics
Type of participation: Participatory - oral communication
City of event: Leeds, West Yorkshire, United Kingdom
Date of event: 30/06/2015
End date: 03/07/2015
Organising entity: European Society of Ecological Economics
Iñigo Capellán-Pérez; Iñaki Arto; Josué Polanco-Martínez; Mikel González-Eguino; Marc B. Neumann.
- 22** **Title of the work:** The energy footprint of human development
Name of the conference: XIV Jornadas de Economía Crítica
Type of participation: Participatory - oral communication
Corresponding author: Yes
City of event: Valladolid, Castile and León, Spain
Date of event: 04/09/2014
End date: 05/09/2015
Organising entity: Asociación de Economía Crítica **Type of entity:** Associations and Groups
Iñaki Arto; Iñigo Capellán Pérez; Lago Rosa; Gorka Bueno; Roberto Bermejo.
- 23** **Title of the work:** The transition towards renewable energies: physical limits and temporal conditions
Name of the conference: Klimagune Workshop
Corresponding author: Yes
City of event: Bilbao, Basque Country, Spain
Date of event: 19/12/2013
Organising entity: ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA
Iñigo Capellán Pérez.

Other dissemination activities

- 1** **Title of the work:** Cuando las energías renovables pueden no ser sostenibles: demanda de minerales y tasa de retorno energético
Name of the event: Charla divulgativa
Type of event: Conferences given
City of event: Huesca, Aragon, Spain
Date of event: 28/02/2020
Organising entity: Colectivo Patatús
Iñigo Capellán-Pérez. Available on-line at: <<https://www.ecologistasenaccion.org/evento/zaragoza-conferencia-coloquio-cuando-las-energias-renovables-pueden-no-ser-sostenibles/>>.
- 2** **Title of the work:** Cuando las energías renovables pueden no ser sostenibles: demanda de minerales y tasa de retorno energético
Name of the event: Charla divulgativa
Type of event: Conferences given
City of event: Zaragoza, Aragon, Spain
Date of event: 27/02/2020
Organising entity: Colectivo Patatús
Iñigo Capellán-Pérez. Available on-line at: <<https://www.ecologistasenaccion.org/evento/zaragoza-conferencia-coloquio-cuando-las-energias-renovables-pueden-no-ser-sostenibles/>>.
- 3** **Title of the work:** ¿Hay suficientes materiales para una transición global a las energías renovables?
Name of the event: Charla divulgativa
Type of event: Conferences given
City of event: Valladolid, Castile and León, Spain
Date of event: 04/11/2019
Organising entity: Ecologistas en Acción
- 4** **Title of the work:** Energía y emisiones de efecto invernadero en la ciudad de Valladolid
Name of the event: ¿Sin coches? hacia un Valladolid más respirable
Type of event: Participación en Jornada
City of event: Valladolid, Castile and León, Spain
Date of event: 07/05/2019
Organising entity: Ecologistas en Acción
Iñigo Capellán-Pérez. Available on-line at: <<https://www.ecologistasenaccion.org/evento/valladolid-jornada-sin-coches-hacia-un-valladolid-mas-respirable/>>.
- 5** **Title of the work:** La transición energética en España: ¿por qué y hacia dónde?
Name of the event: Ciclo de conferencias "40 años de la Constitución española: miradas de pasado y de futuro"
Type of event: Conferences given
City of event: Valladolid, Castile and León, Spain
Date of event: 26/02/2019
Organising entity: Museo Patio Herreriano, Universidad de Valladolid y Universidad Nacional de Educación a Distancia
Iñigo Capellán-Pérez.



- 6** **Title of the work:** Crossroads-World (Encrucijada-Mundo). Juego de simulación participativa para el diseño de objetivos y estrategias para mitigar el cambio climático
Name of the event: 15ª Jornadas Técnicas y Feria de Bioconstrucción
City of event: Aínsa, Aragon, Spain
Date of event: 19/05/2018
Organising entity: Instituto Español de Baubiologie
Available on-line at: <<http://www.villadeainsa.com/eventos/programa-15a-jornadas-bioconstruccion>>.
- 7** **Title of the work:** "Jugando a gobernar el mundo"
Name of the event: VIII Jornadas de cine y Filosofía
Type of event: Juego de simulación participativa
City of event: Valladolid, Castile and León, Spain
Date of event: 20/03/2018
Organising entity: Universidad Nacional de Educación a Distancia
Type of entity: University
Available on-line at: <<http://ucc.uva.es/actividades/Jugando-a-gobernar-el-mundo/>>.
- 8** **Title of the work:** Crossroads. Juego de simulación participativa que intenta mitigar el cambio climático a nivel mundial y a largo plazo
Name of the event: Jugando a la sostenibilidad
Type of event: Juego de simulación participativa
City of event: Valladolid, Castile and León, Spain
Date of event: 07/12/2017
Organising entity: Ecologistas en Acción
Available on-line at: <<https://www.ecologistasenaccion.org/?p=35304>>.
- 9** **Title of the work:** Juego mediante simulación participativa de escenarios de transición energética aplicando el modelo MEDEAS-World
Name of the event: IV Curso de Economía Ecológica 2017
Type of event: Participative modelling game
City of event: Bilbao, Basque Country, Spain
Date of event: 26/10/2017
Organising entity: Universidad del País Vasco
Type of entity: University
Available on-line at: <http://www.hegoa.ehu.es/articles/text/iv_curso_de_economia_ecologica>.
- 10** **Title of the work:** MEDEAS workshop. Designig a new energy-economy model
Name of the event: Club of Rome Summer Academy 2017
Type of event: Conferences given
City of event: Rome, Toscana, Italy
Date of event: 09/09/2017
Organising entity: Club of Rome
Iñigo Capellán-Pérez; Jordi Solé; Ilaria Perissi; Davide Natalini; Sara Falsini; Ugo Bardi. Available on-line at: <<https://www.clubofrome.org/2017/05/17/summeracademy/>>.

R&D management and participation in scientific committees

Scientific, technical and/or assessment committees

Committee title: Klimagune Workshop 2013

Affiliation entity: ASOC BC3 BASQUE CENTRE FOR CLIMATE CHANGE-KLIMA ALDAKETA IKERGA

City affiliation entity: Bilbao, Basque Country, Spain

Start date: 19/12/2013

Evaluation and revision of R&D projects and articles

- 1** **Performed tasks:** Review of articles
Entity where activity was carried out: Energy Policy
Start date: 2019
- 2** **Performed tasks:** Review of articles
Entity where activity was carried out: Energy Research & Social Science
Start date: 2019
- 3** **Performed tasks:** Review of articles
Entity where activity was carried out: Energy Strategy Reviews
Start date: 2019
- 4** **Performed tasks:** Review of articles
Entity where activity was carried out: Energy
Start date: 2019
- 5** **Performed tasks:** Review of articles
Entity where activity was carried out: Innovation: The European Journal of Social Science Research
Start date: 2019
- 6** **Performed tasks:** Review of articles
Entity where activity was carried out: Nature Scientific Reports
Start date: 2019
- 7** **Performed tasks:** Review of articles
Entity where activity was carried out: Renewable & Sustainable Energy Reviews
Type of activity: Review of articles in scientific or technological journals
Start date: 2018
- 8** **Performed tasks:** Review of articles
Entity where activity was carried out: Applied Energy
Start date: 2017
- 9** **Performed tasks:** Review of articles
Entity where activity was carried out: International Journal of Hydrogen Energy
Start date: 2017



10 **Performed tasks:** Review of articles
Entity where activity was carried out: Nature Energy
Start date: 2017

11 **Performed tasks:** Review of articles
Entity where activity was carried out: BioPhysical Economics and Resource Quality
Type of activity: Review of articles in scientific or technological journals
Start date: 2017

Other achievements

Stays in public or private R&D centres

- 1** **Entity:** RES Foundation **Type of entity:** Foundation
City of entity: Belgrado, Serbia
Start-End date: 29/06/2018 - 01/08/2018 **Duration:** 1 month
Goals of the stay: Guest
Provable tasks: Scientific research collaboration in the field of the transition to renewable energies at national/local level. Results to be published in forthcoming scientific publications.
- 2** **Entity:** Joint Global Change Research Institute (JGCRI)
City of entity: College Park, United States of America
Start-End date: 06/12/2016 - 10/12/2016 **Duration:** 5 days
Goals of the stay: Guest
Provable tasks: Development of a method to include solar land use in the integrated assessment model GCAM

Obtained grants and scholarships

Name of the grant: Juan de la Cierva - formación (no. FJCI-2016-28833)
City awarding entity: Spain
Aims: Post-doctoral
Awarding entity: Ministerio de Economía y Competitividad
Conferral date: 15/12/2017 **Duration:** 2 years
End date: 15/12/2019

Co-operation networks

Name of the network: Post-Growth Economis Network (PEN)
Identification of the network: European network of researchers working on post-growth economics and ecological macroeconomics
Start date: 01/07/2017



Prizes, mentions and distinctions

Description: Premio Extraordinario de Doctorado Ciencias Sociales y Jurídicas (PhD Extraordinary Doctorate Award)

Awarding entity: Universidad del País Vasco

Type of entity: University

City awarding entity: Bilbao, Basque Country, Spain

Conferral date: 22/06/2018