

PARIS
REINFORCE



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REINFORCE

76th Semi-Annual ETSAP Meeting, CSIRO, Australia

The H2020 Project PARIS REINFORCE

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www.paris-reinforce.eu

Title:

Delivering on the Paris Agreement: A demand-driven, integrated assessment modelling approach (PARIS REINFORCE)

Funding:

European Union's Horizon 2020 Research and Innovation Programme (H2020)

Lifetime:

June 2019 - May 2022 (36 months)

Coordination:

NTUA, Energy Policy Unit, National Technical University of Athens

Participants:

13 European partners; 5 international partners

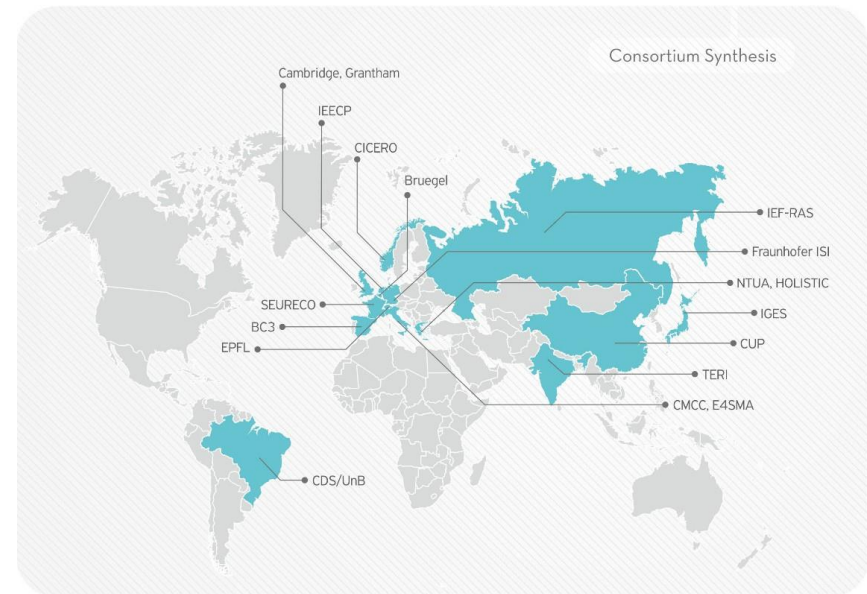
Call/Grant:

H2020-LC-CLA-01-2018/820846



The PARIS REINFORCE project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 820846.

NTUA - National Technical University of Athens	GR
BC3 - Basque Centre for Climate Change	ES
Bruegel - Bruegel AISBL	BE
Cambridge - University of Cambridge	UK
CICERO - Cicero Senter Klimaforskning Stiftelse	NO
CMCC - Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici	IT
E4SMA - Energy, Engineering, Economic and Environment Systems Modelling Analysis	IT
EPFL - École polytechnique fédérale de Lausanne	CH
Fraunhofer ISI - Fraunhofer Institute for Systems and Innovation Research	DE
Grantham - Imperial College of Science Technology and Medicine - Grantham Institute	UK
HOLISTIC - Holistic P. C.	GR
IEECP - Institute for European Energy and Climate Policy Stichting	NL
SEURECO - Société Européenne d'Economie SARL	FR



CDS/UnB - Centre for Sustainable Development of the University of Brasilia	BR
CUP - China University of Petroleum-Beijing	CN
IEF-RAS - Institute of Economic Forecasting – Russian Academy of Sciences	RU
IGES - Institute for Global Environmental Strategies	JP
TERI - The Energy and Resources Institute	IN



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Policy

EU-level: next **NDC**; national level: **NECPs**

Sectoral analyses for **detailed EU 2050 roadmap**

All ten **major emitters**; other **less emitting** countries

Forum for discussing **game-changing** topics

Society

Co-creation: needs scenarios, assumptions

Enhanced **transparency & legitimacy**

Improved **understanding of models**

Research

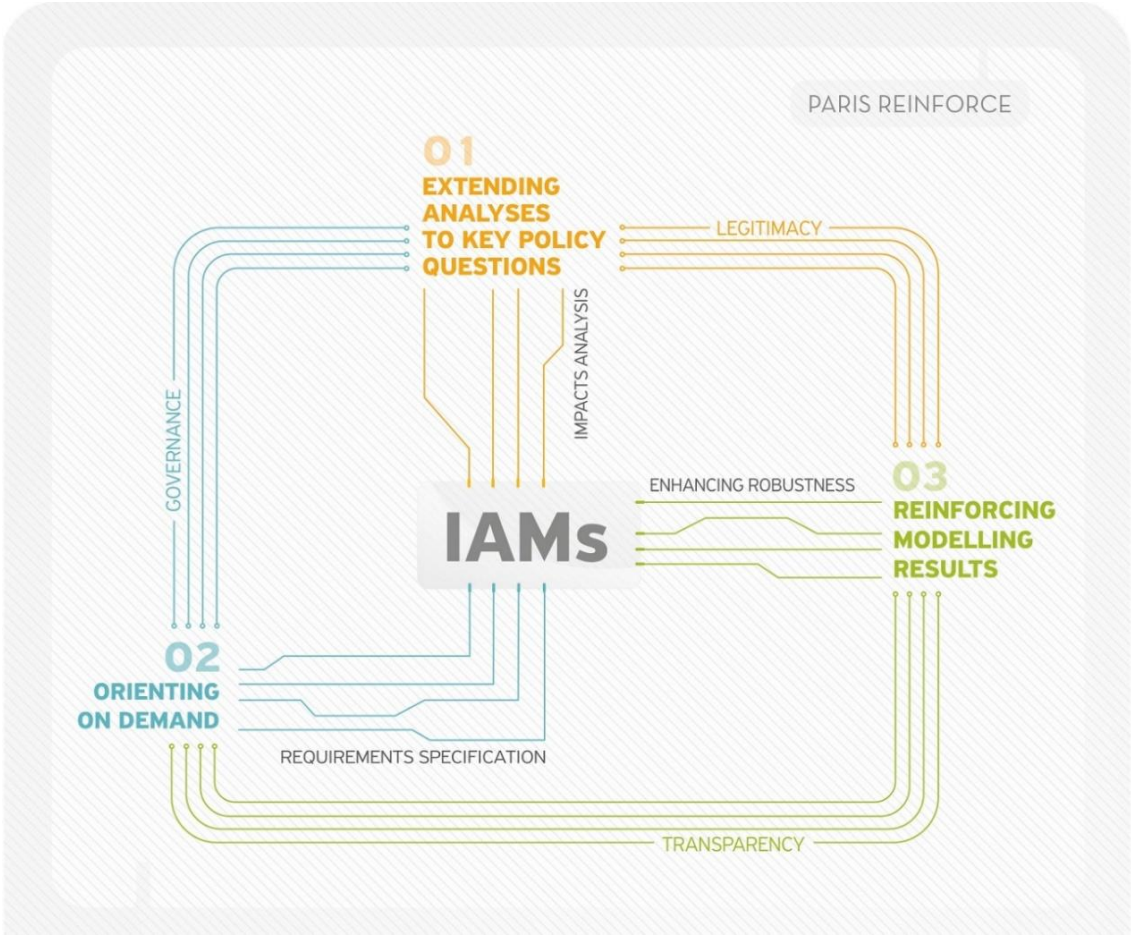
I²AM PARIS: open access, multi-modelling, data exchange platform

New **paradigm**: modelling **ensembles**, **robustness** analysis, systems of innovation

IPCC **AR6** & other assessments: **reviews**, **global** analyses & **inter-comparisons**

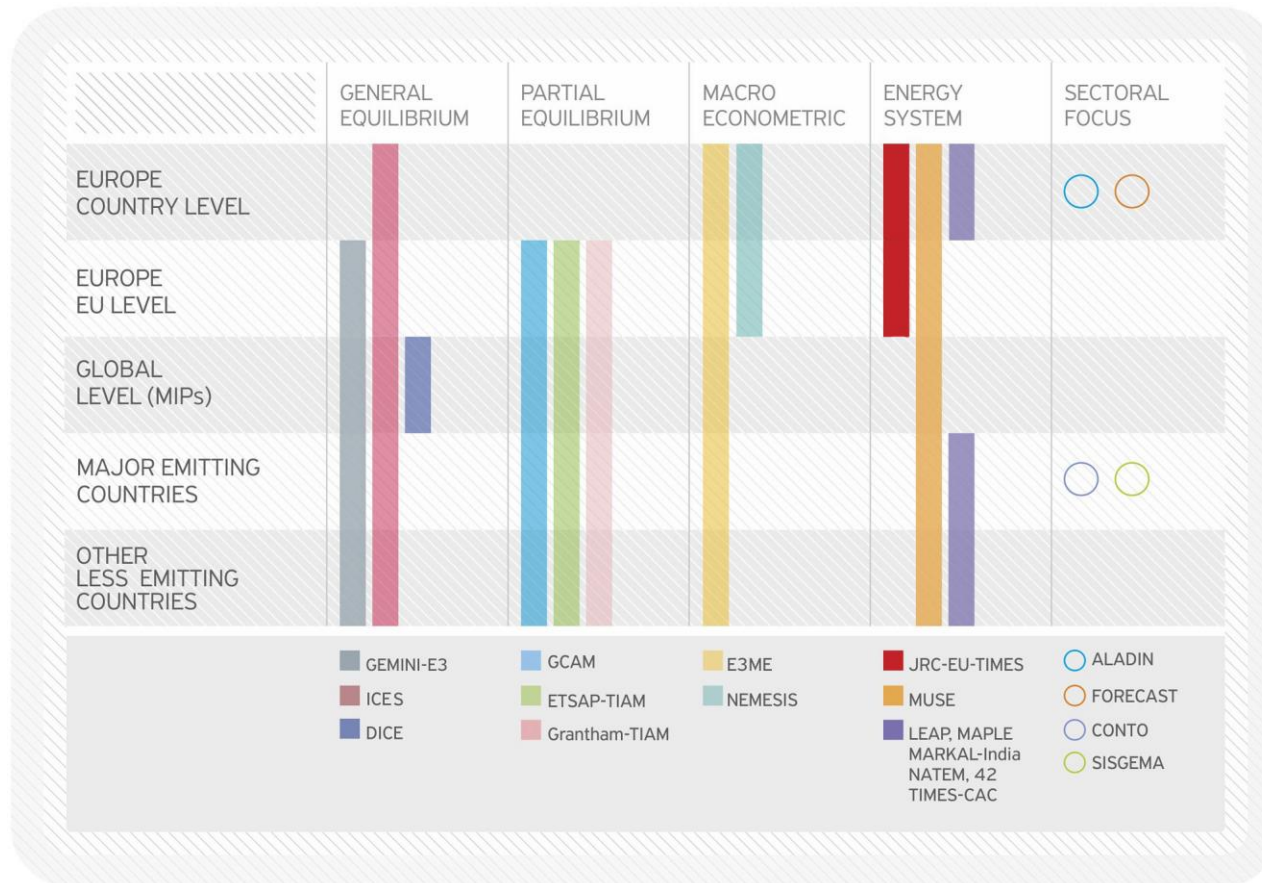


PARIS REINFORCE consists of **four fully interconnected pillars**



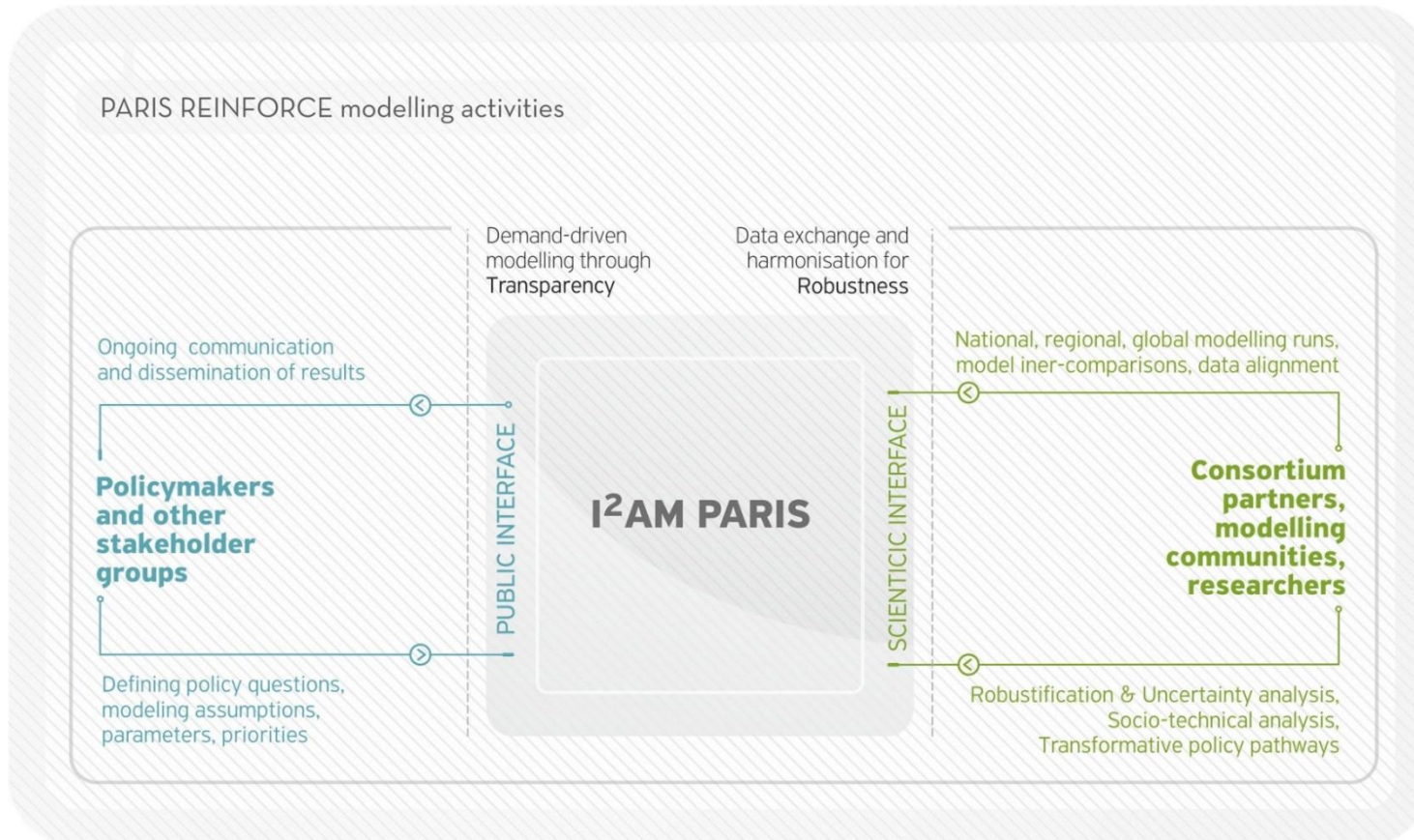
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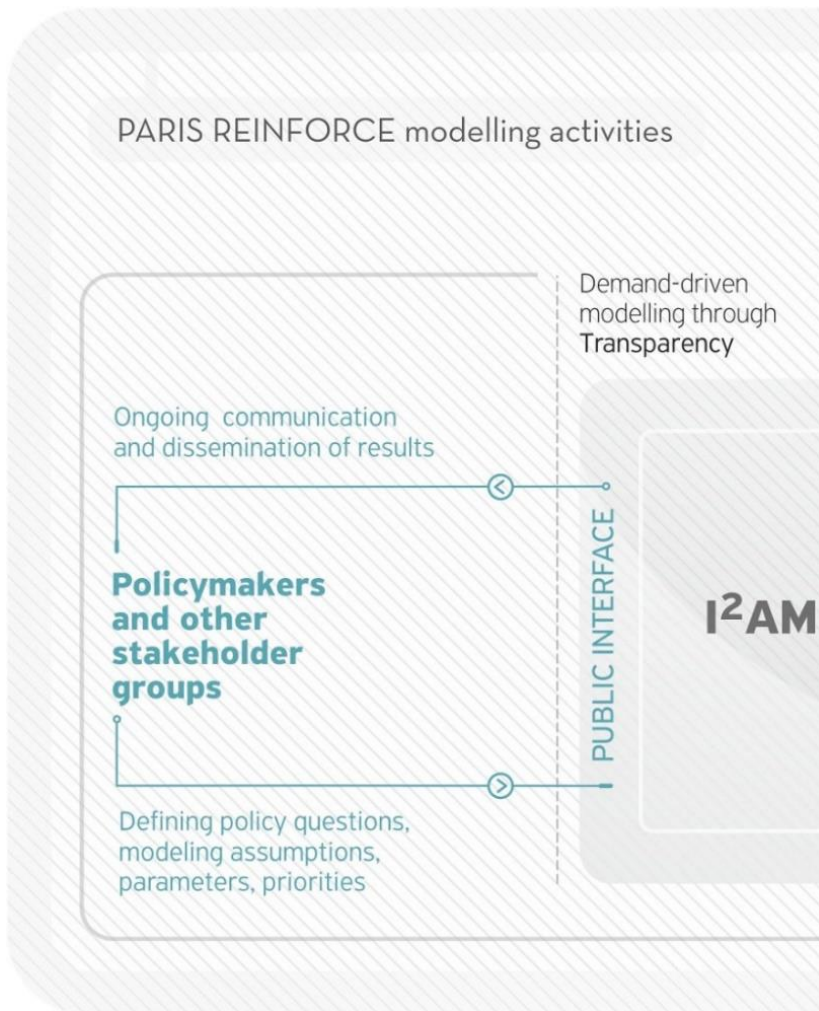
A set of **complementary**-in terms of mathematical structure, geographical, sectoral and focus coverage-**integrated assessment, energy system** and **sectoral models**



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All **modelling activities**, including scenario inputs and assumptions, datasets, modelling outputs, and visualisation will be streamlined in an **open-access data exchange platform**





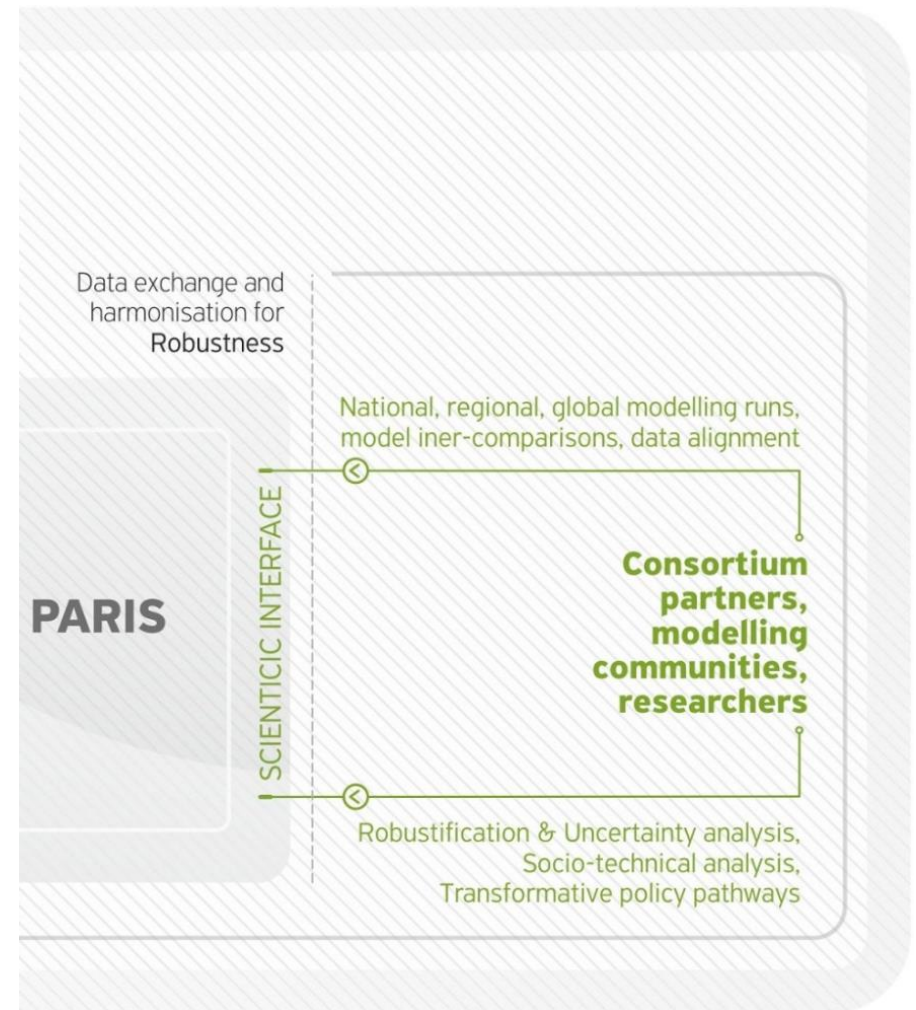
Regarding the **public interface**:

- So far, we have worked on **transparency** of the models and presented a detailed **documentation** of the PARIS REINFORCE models.
- As modelling analyses are carried out, the second component of the platform will be implemented, including **user-friendly presentation** and visualisation of **policy-relevant results** and **policy prescriptions**, in response to **co-created policy/research questions**.

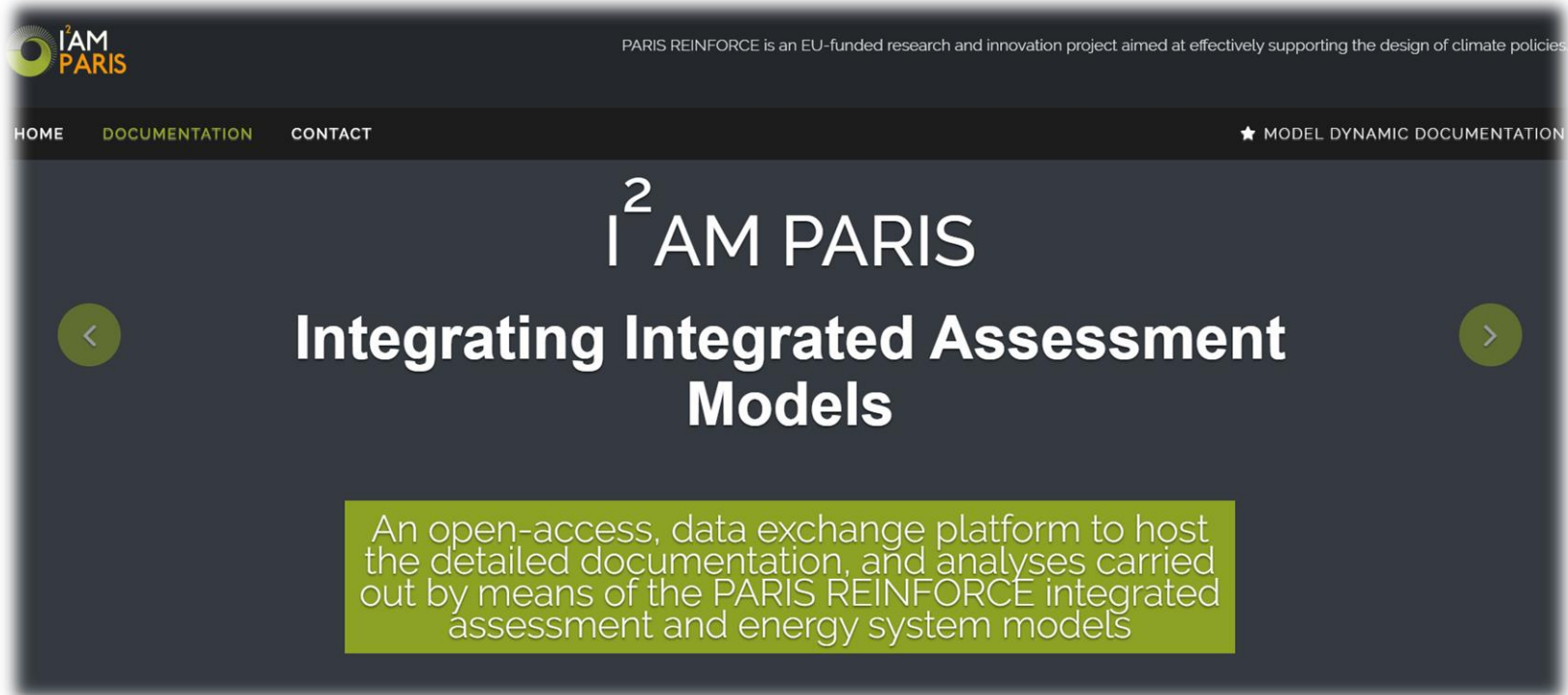


Regarding the **scientific interface**:

- We will create a **template** for all climate-economy and energy system modellers to provide us with **detailed documentation of their model(s)**, so that we can include it in our database, detailed and dynamic documentation. **[OPEN CALL]**
- Scientists will also have access to similar templates to provide us with the **topics** (research questions) they have addressed, as well as their modelling **inputs** and **results** to host in I²AM PARIS.



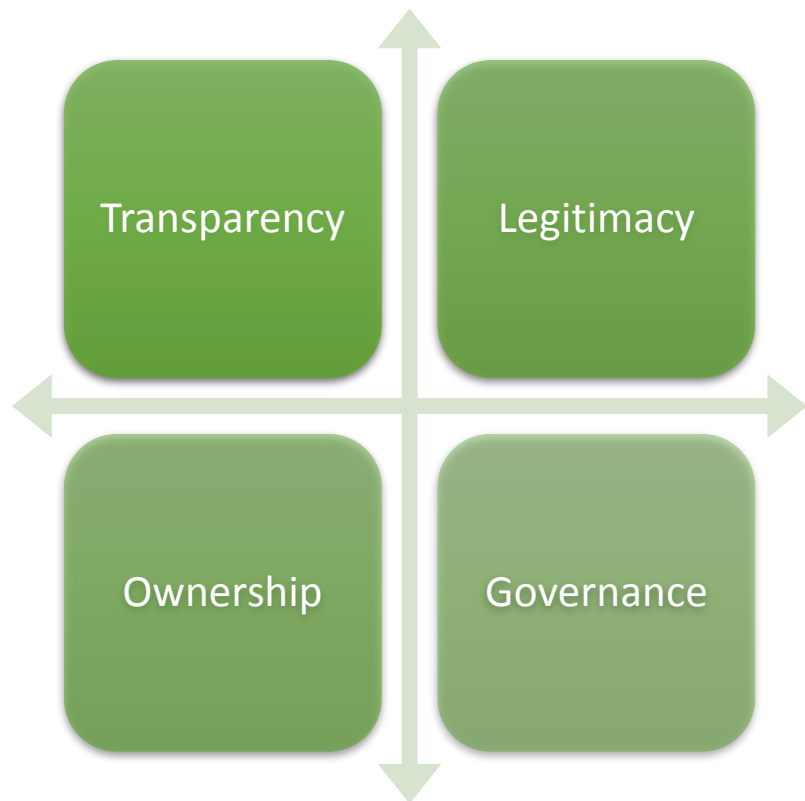
<http://paris-reinforce.epu.ntua.gr/main>



The screenshot shows the website's header with the I²AM PARIS logo on the left and the text "PARIS REINFORCE is an EU-funded research and innovation project aimed at effectively supporting the design of climate policies" on the right. Below the header is a navigation bar with links for "HOME", "DOCUMENTATION", and "CONTACT", and a star icon followed by "MODEL DYNAMIC DOCUMENTATION". The main content area features the title "I²AM PARIS" in large white letters, followed by the subtitle "Integrating Integrated Assessment Models" in bold white text. A green box below the subtitle contains the text: "An open-access, data exchange platform to host the detailed documentation, and analyses carried out by means of the PARIS REINFORCE integrated assessment and energy system models". Navigation arrows are visible on either side of the main text.



The **ongoing stakeholder engagement module**, led in the project by **Bruegel**, orients on the **Stakeholder Council**, a broader body envisaged to encompass stakeholder groups, in line with the values of the **Talanoa dialogue**.



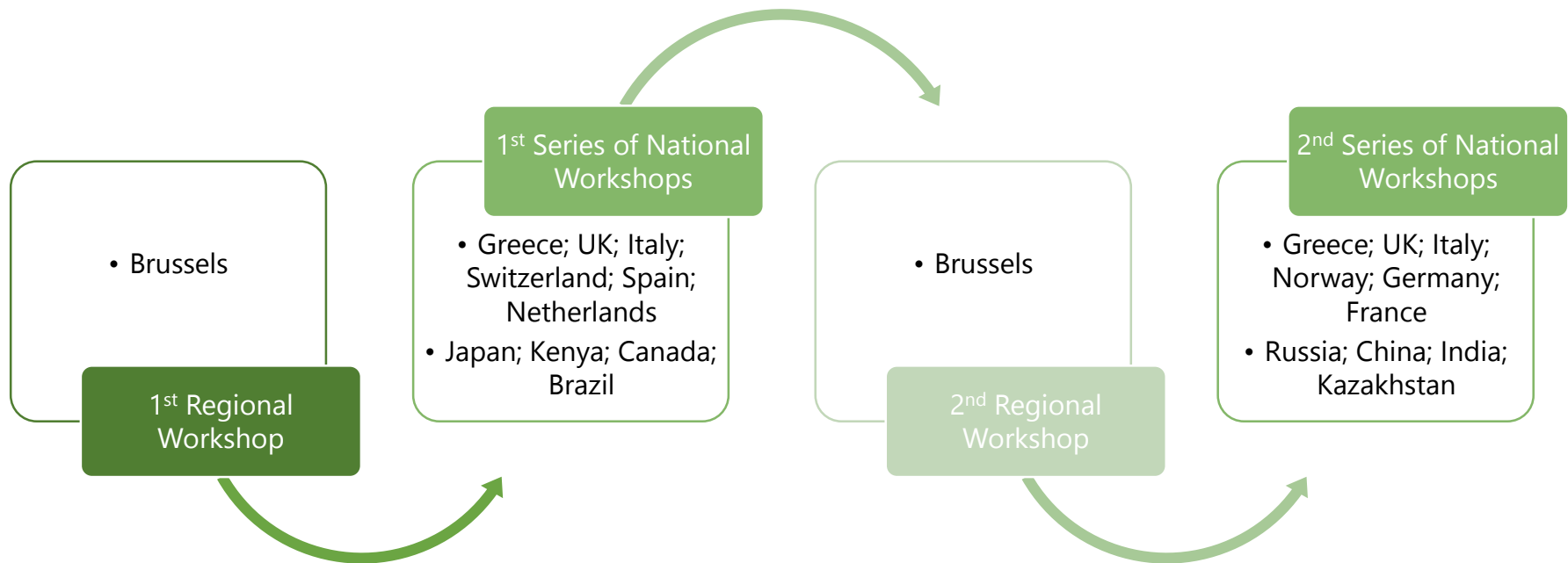
Enables stakeholders to influence and contribute to the scientific processes, in the PARIS REINFORCE co-creative structure.

- Driving modelling activities, by deciding on the **policy questions** that the project will take on, and expressing **preferences** that will help formulate the **scenarios**.
- Engaging in **two series of regional and national workshops**, as well as via bilateral communications.
- Representing societal, business, policy and science groups (**policymakers, governments, industry representatives, academics, scientists, NGOs, civil society**).
- Stored in a private, **enhanced stakeholder database**.



Building **ownership** and ensuring **policy relevance**, through **co-creation**.

Two modelling iterations – two series of national/regional workshops (European and global)



Since June 2019, we have made progress on

- Enhancing **transparency**: detailed, easy-to-digest description and documentation of all models to be used in the project, aimed at policymakers and other stakeholder groups
 - Policy brief on “What can our models do?” (hand-out)
 - I²AM PARIS platform prototype (link provided)
 - A series of detailed documentation reports of each model along with comparative assessments

- Enhancing **policy support** through:
 - stakeholder-driven climate (policy) risk analysis against multiple criteria, evaluating consensus, and policy/technological uncertainty assessment
 - socio-technical analysis for informing models, analysing robustness of modelling outcomes, and exploiting stakeholder knowledge.

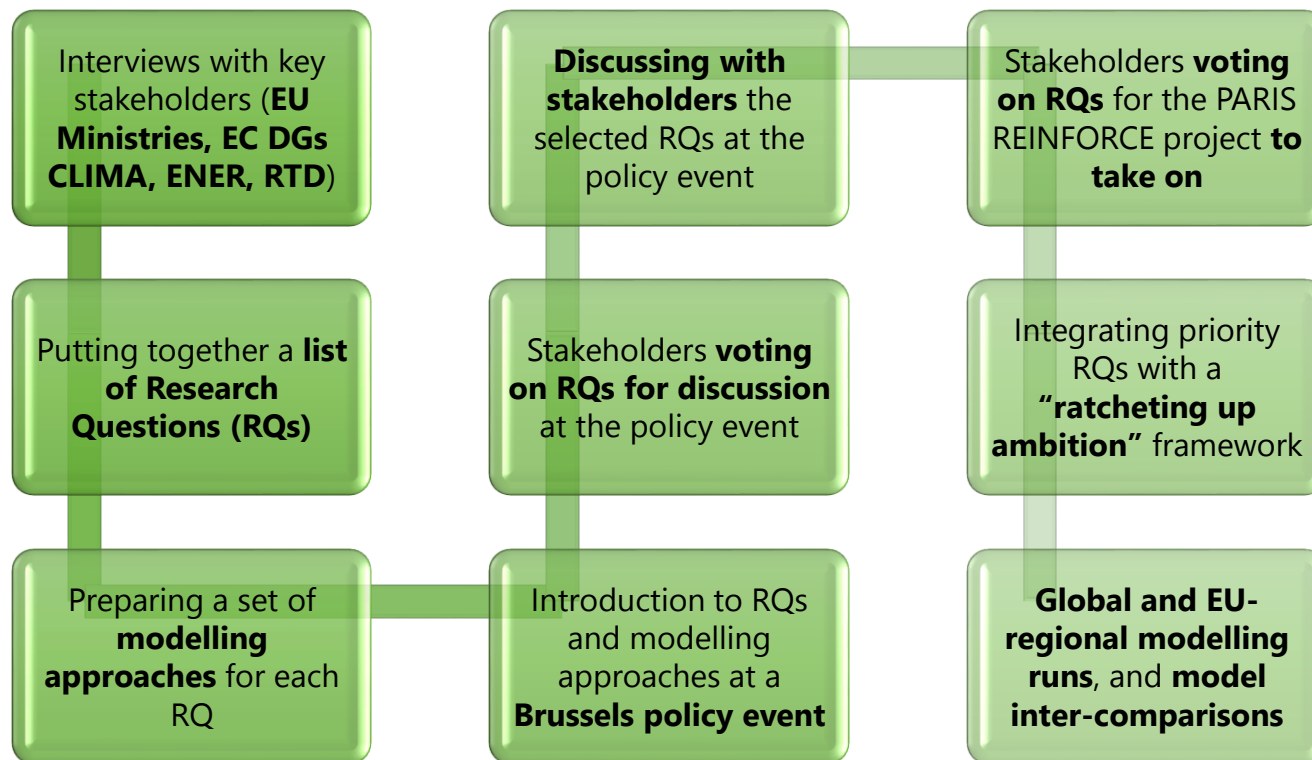
Published Papers:

Contested energy futures, conflicted rewards? Examining low-carbon transition risks and governance dynamics in China's built environment. *Energy Research & Social Science*, 59, 101306, 2020.

Integrated policy assessment and optimisation over multiple sustainable development goals in Eastern Africa. *Environmental Research Letters*, 14(9), 094001.



Key priorities for designing **scenarios for mid-century strategies** were defined **with stakeholders** across three axes: **global pathways**; **a Paris-consistent Europe**; and **implications for Sustainable Development Goals**.



The PARIS REINFORCE **global scenarios for mid-century strategies** will focus on the following dimensions:

Potential failures of key technologies

- How do mitigation costs, energy mix, and feasibility of ambitious mitigation targets change if selected technologies do not reach their full potential?

Lifestyle and behavioural changes

- What share of mitigation can realistically be achieved via changes to lifestyle and behaviour?

Green new deal / Just transition

- Is it possible to model a climate emergency or ambitious green new deal/package requiring net-zero emissions in 2030?
- If so, how can we ensure that the associated transitions are just for all societal groups?



The PARIS REINFORCE **EU-regional scenarios for its NDC and 2050 strategy** will focus on the following dimensions:

Carbon Border Adjustment (carbon tax)

- Can losses/leakages be mitigated effectively by a CBA mechanism? What are alternative measures?
- What would the impact of CBA be on EU countries?

Electrification

- How can we provide enough RE generation, storage and distribution capacity in an extreme electrification scenario? Under which conditions can electricity grids be able to manage this? What is the role of flexibility options?

EU-internal taxation policies

- What is the scope for increasing ambition in terms of coverage of the ETS (incl. non-ETS, reduction of permits)?
- What are the potential implications of expanding the harmonisation of taxation across the EU in non-ETS sectors?



The final global and EU scenarios will be coupled with considerations of selected **Sustainable Development Goals**



Employment and other socio-economic dimensions as a result of **removing public support on emission intensive energy sectors** (e.g. coal)



Evolution of employment in terms of **sectoral redeployment** and **skill requirements to support carbon-neutral economies?**



Increasing ambition in NDCs (ratcheting up parameters TBD)





Thank you!

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