PARIS
REINFORCE

EU-Japan Climate Change Policy Symposium

PARIS REINFORCE: the role of scenario and model analysis in EU's vision for decarbonisation

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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.

Consortium

PARIS REINFORCE

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**

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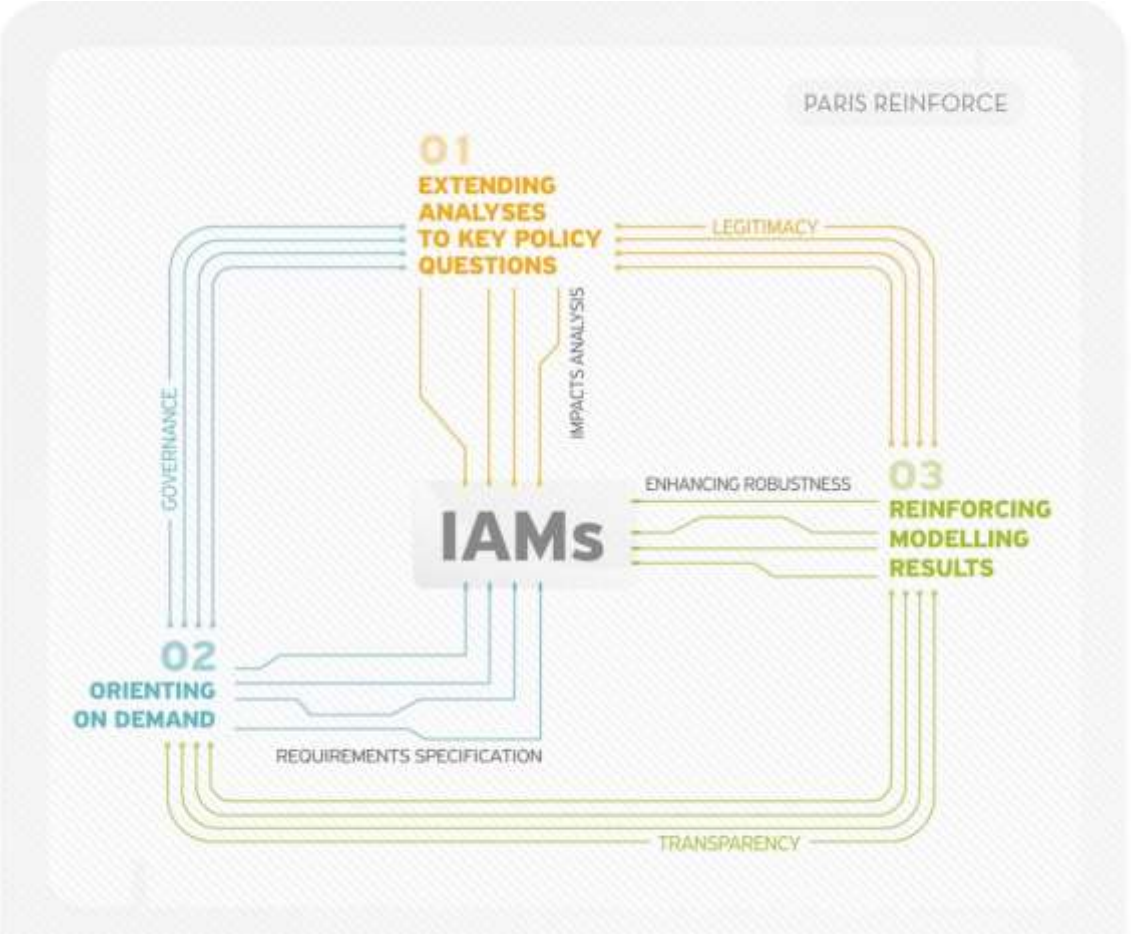
PARIS REINFORCE consists of **four fully interconnected pillars**



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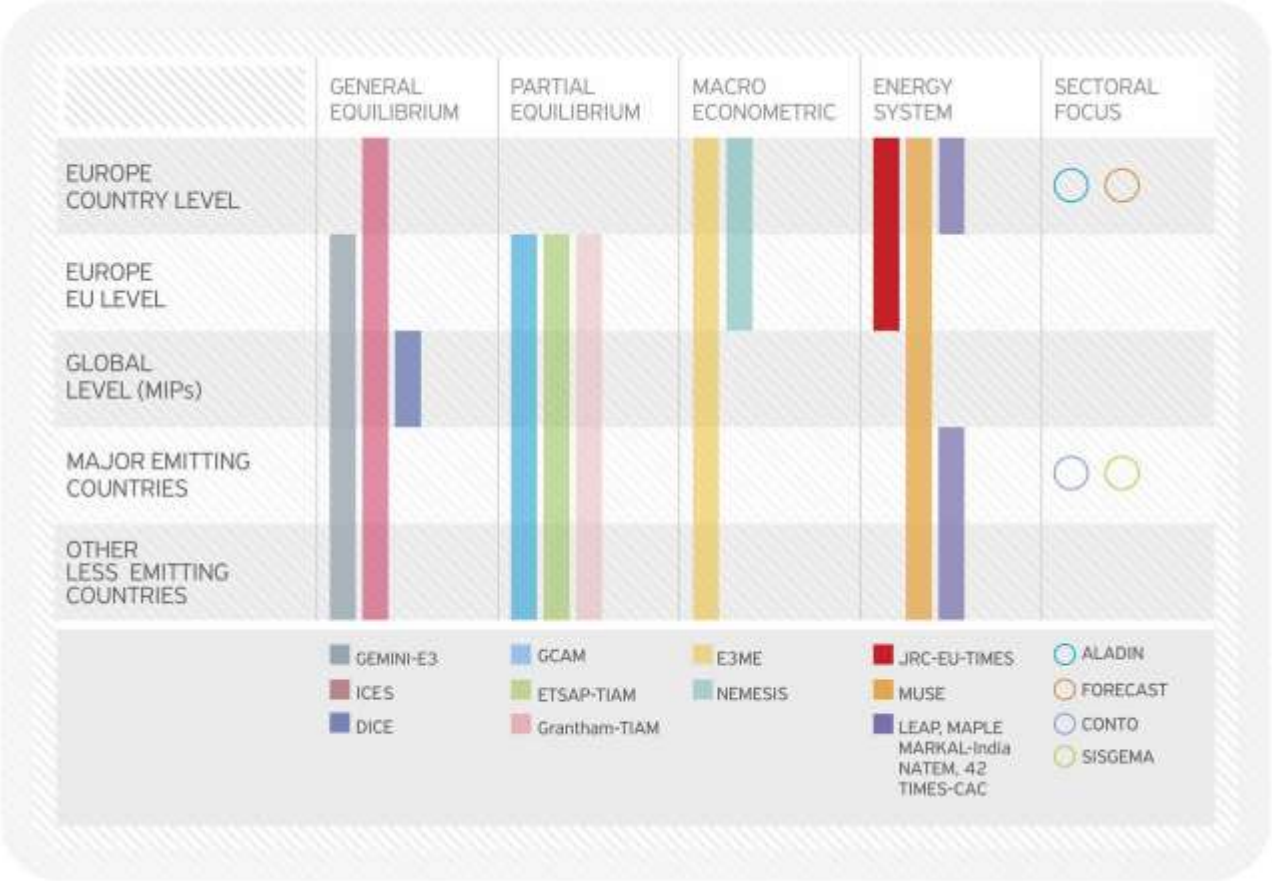
Modelling Ensemble

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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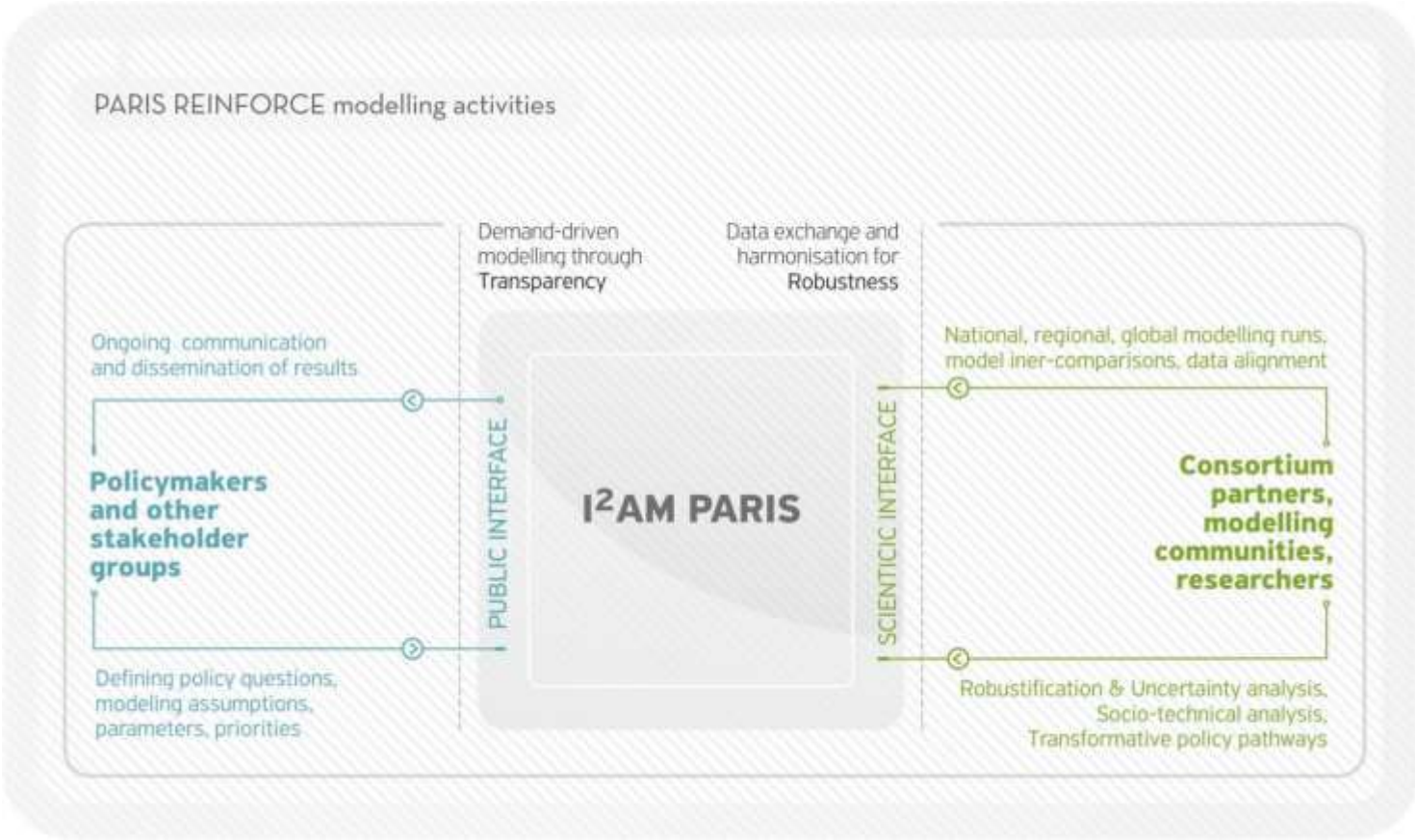
The I²AM PARIS Platform

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



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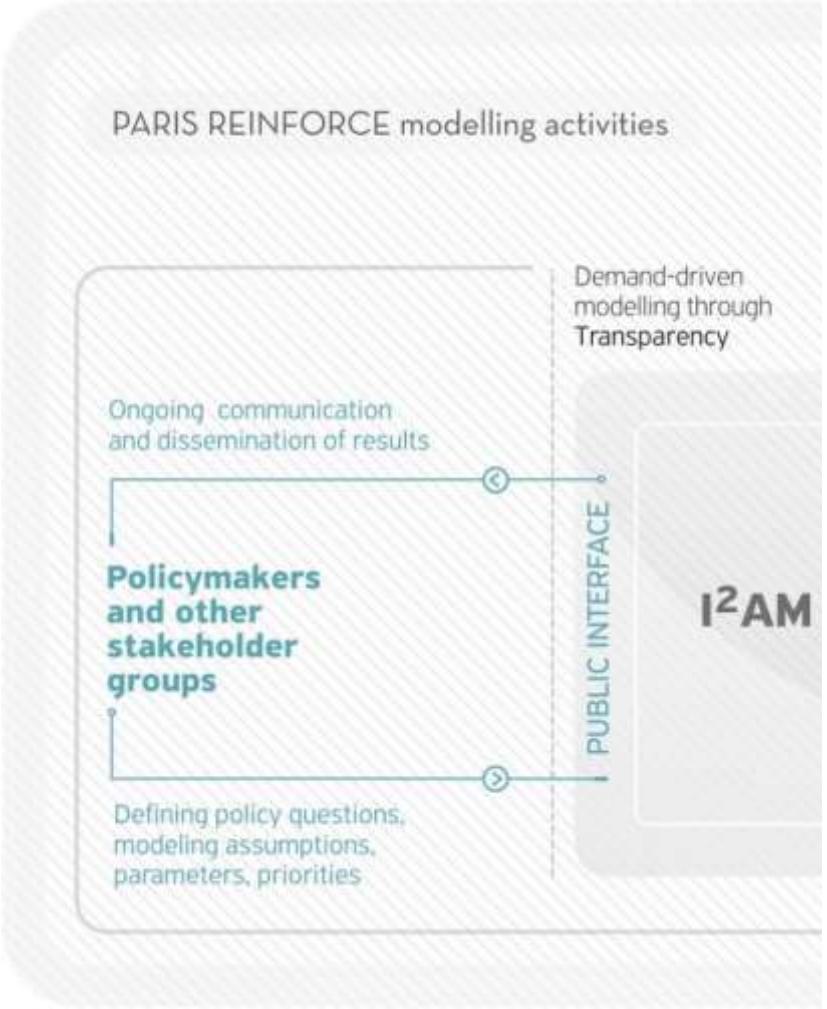
The I²AM PARIS public interface



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.

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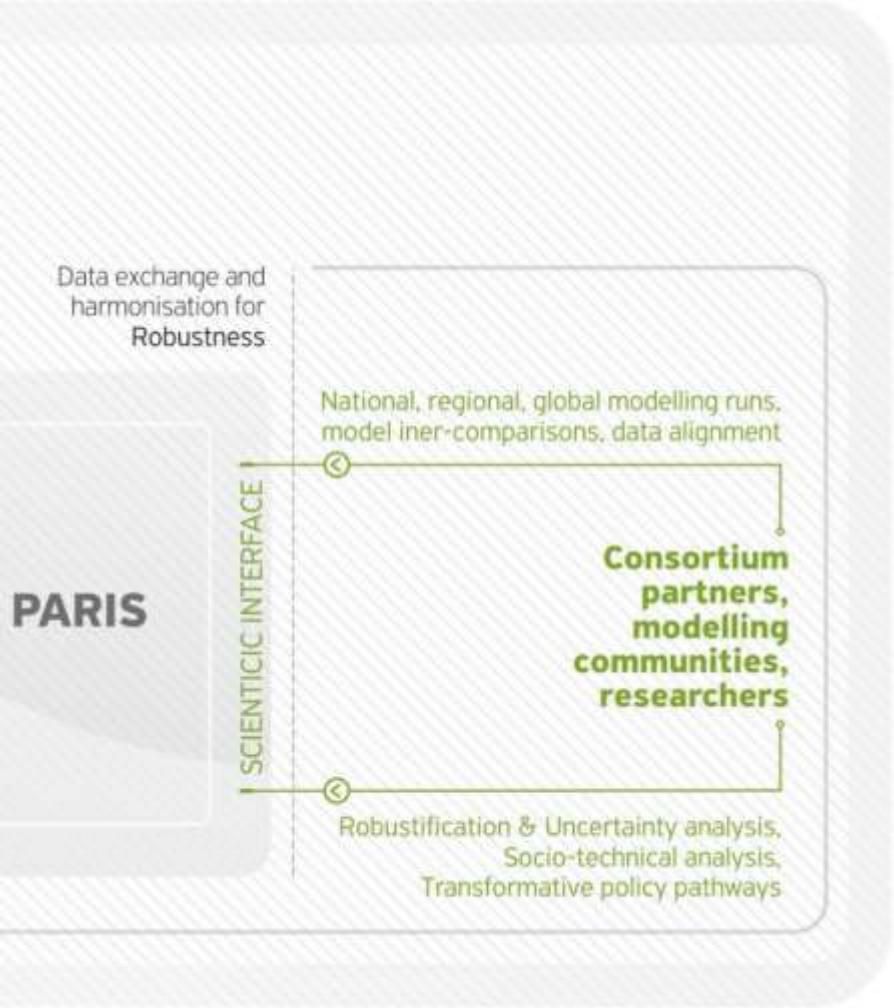
Regarding the scientific interface:

- 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.



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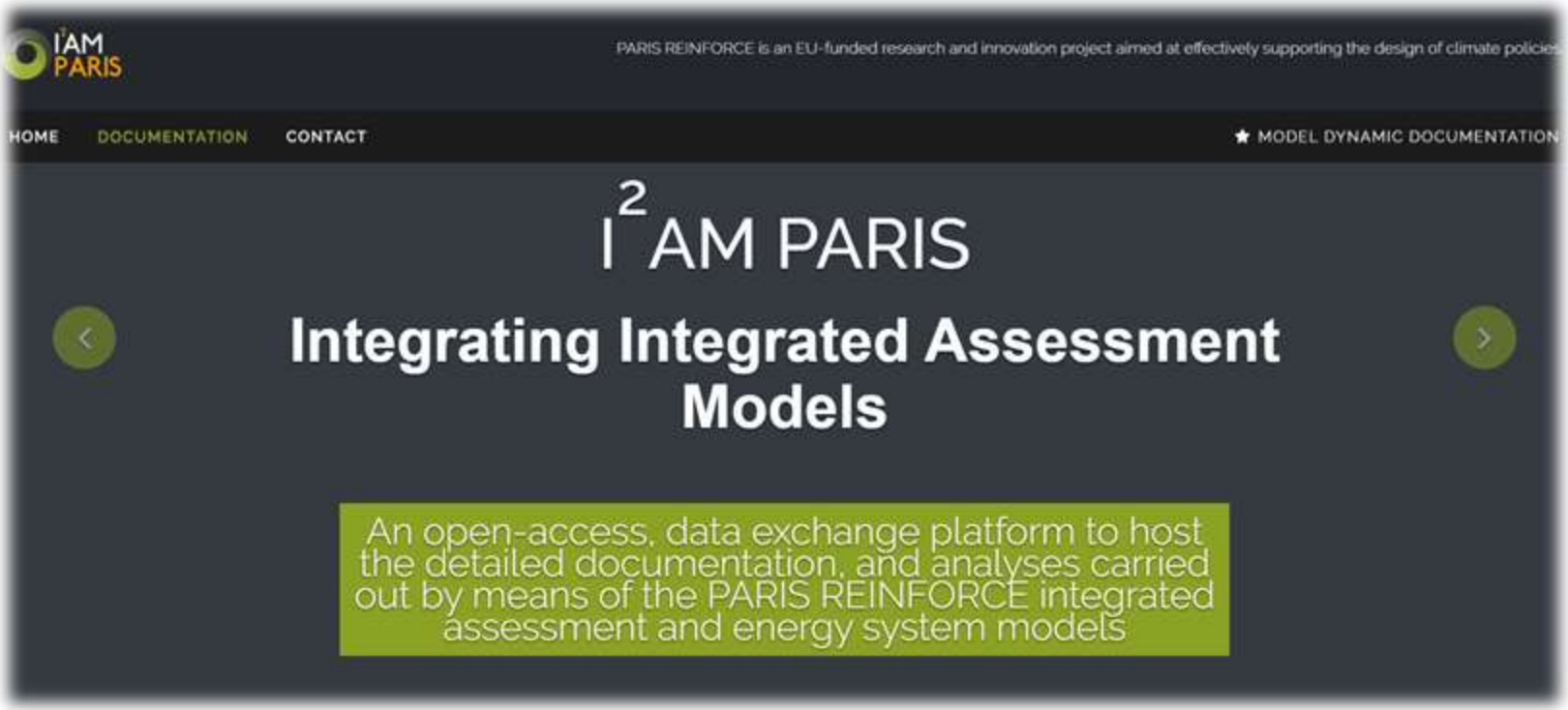
http://paris-reinforce.epu.ntua.gr/main



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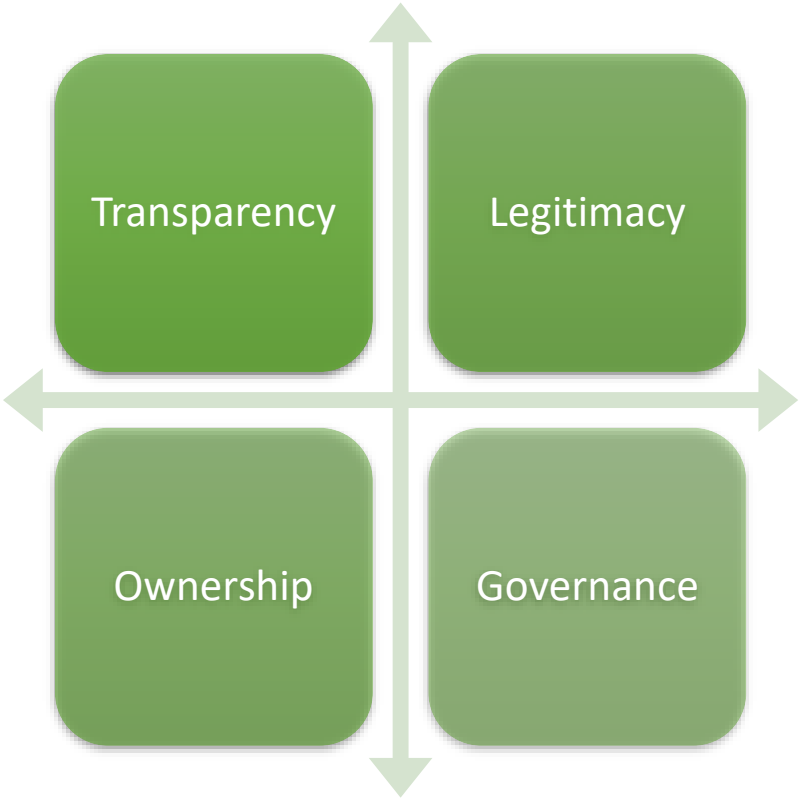
The Stakeholder Council

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**.

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Policy-relevant workshops

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

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

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Laying the groundwork

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.

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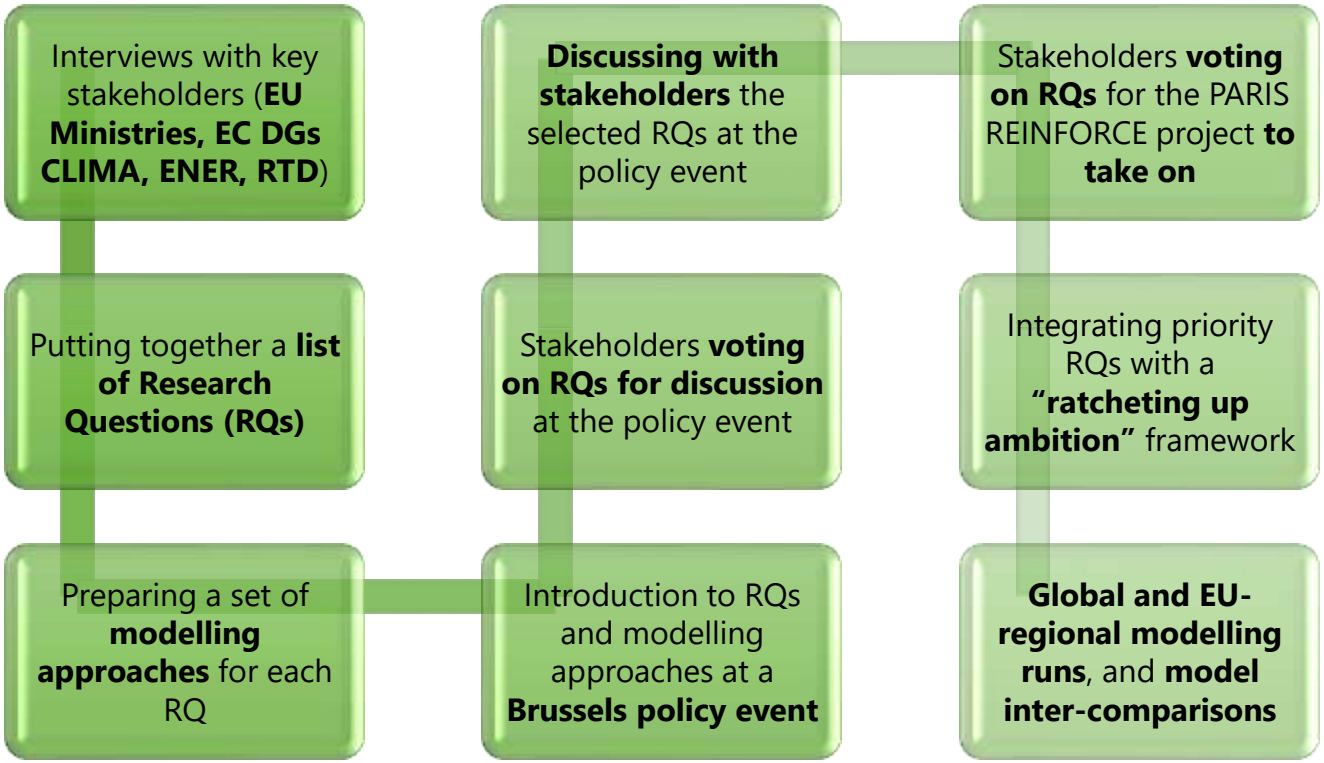
A strong co-creation component

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**.



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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?

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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?

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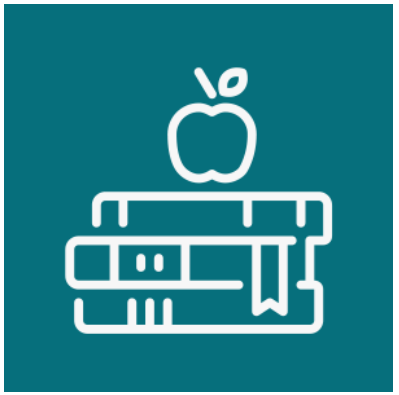
Coupling with implications for SDGs

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)

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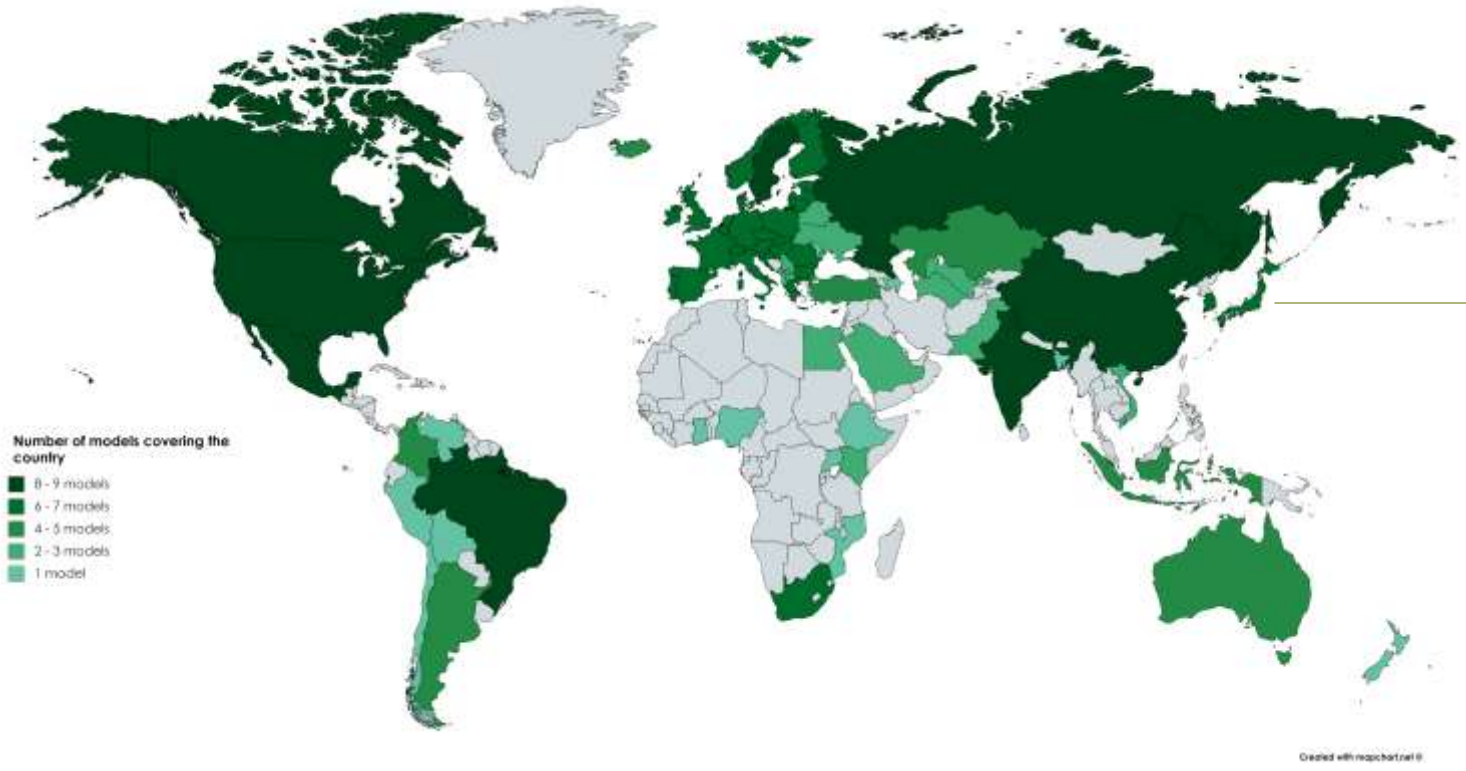
Capabilities for **Japan**

National-level coverage for Japan from **nine global, regional and national models** of the PARIS REINFORCE modelling armoury.



National coverage from **global IAMs**:

- GCAM
- TIAM
- MUSE
- 42
- ICES
- E3ME

National coverage from **national IAMs**:

- GCAM-SOUSEI

Regional coverage from **global IAMs**:

- DICE
- GEMINI-E3

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Thank you!

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