

PARIS
REINFORCE



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Project overview

**Delivering on the Paris Agreement:
A demand - driven, integrated assessment
modelling approach**

Haris Doukas (NTUA)



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

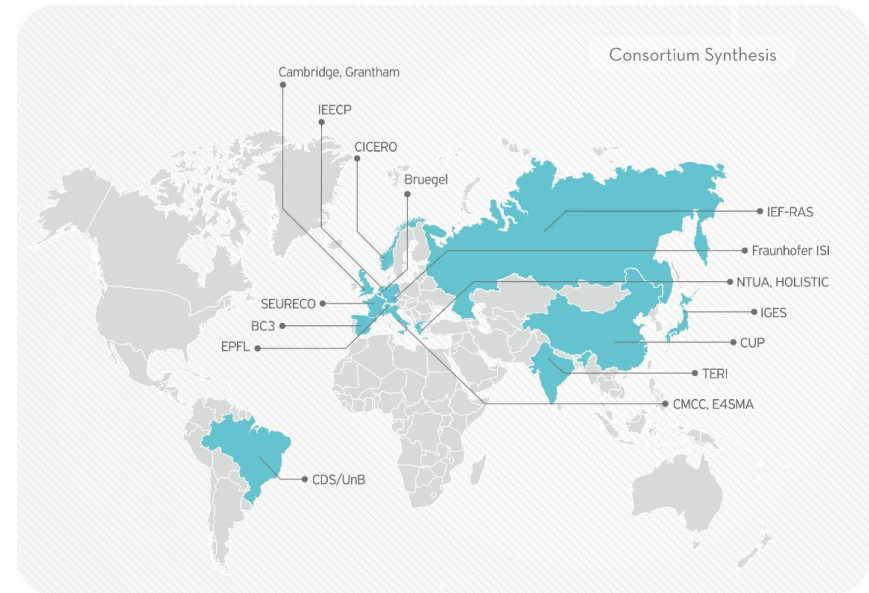
Fraunhofer ISI - Fraunhofer Institute for Systems and Innovation Research DE

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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PARIS REINFORCE aims to **revolutionise** science in **support of climate policy**, in order to enable the effective implementation of **NDCs**, the preparation of **future action pledges**, the development of **2050 strategies**, and the reinforcement of the **2023 Global Stocktake**.

1

Develop a novel, demand-driven, IAM-oriented assessment framework for effectively supporting the design of climate policies in the EU

2

Extend the analysis to major emitters and less emitting countries, in the context of globally coordinated, cooperative action

3

Build on an exhaustive facilitative dialogue, a strong modelling ensemble, and a toolbox of well-established robustness analysis methodologies

4

Enhance the legitimacy of scientific processes and improve the transparency of models, through an open access data exchange platform, I²AM PARIS



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

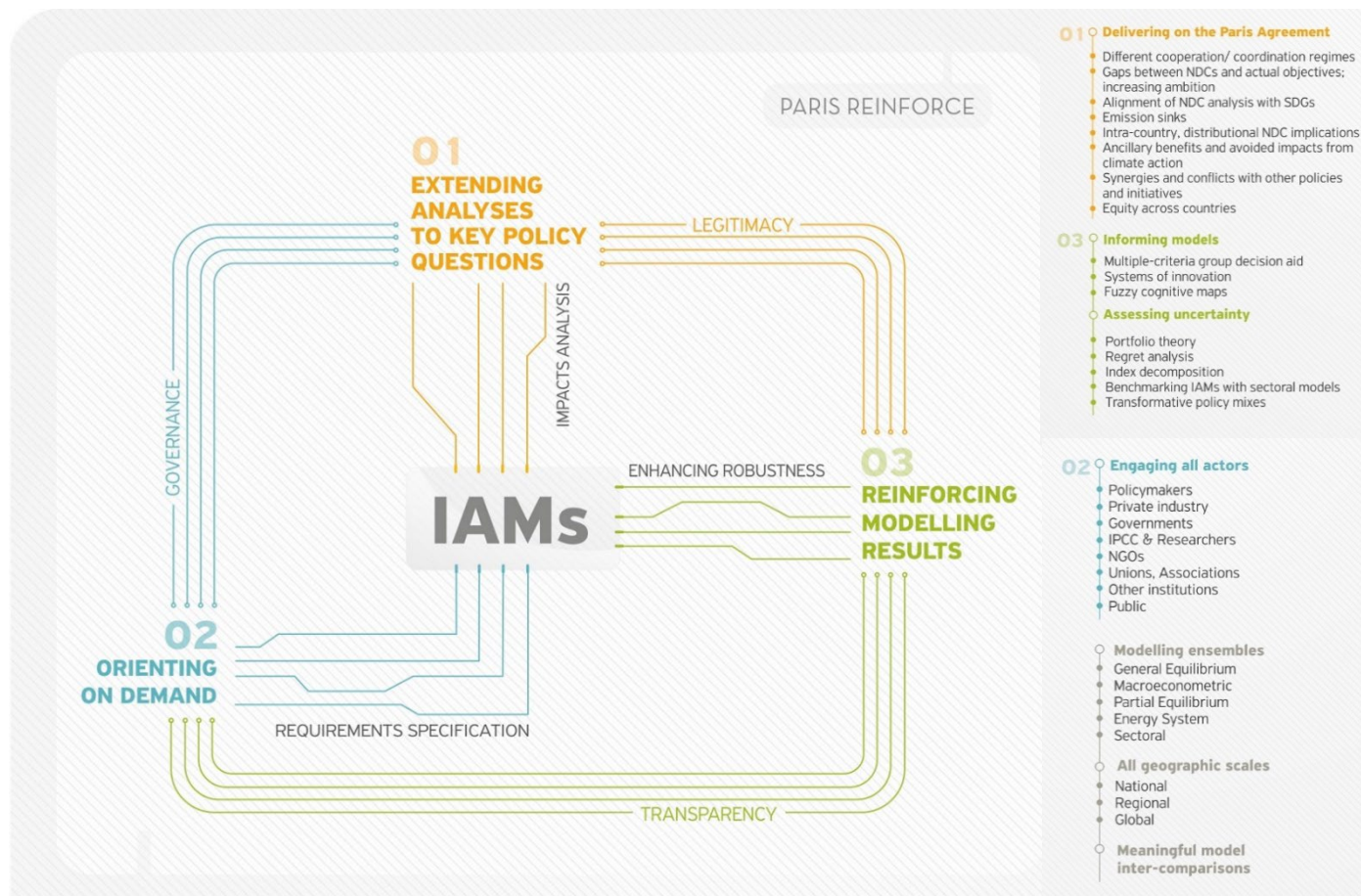
I²AM PARIS: open access, multi-modelling, data exchange platform

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

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

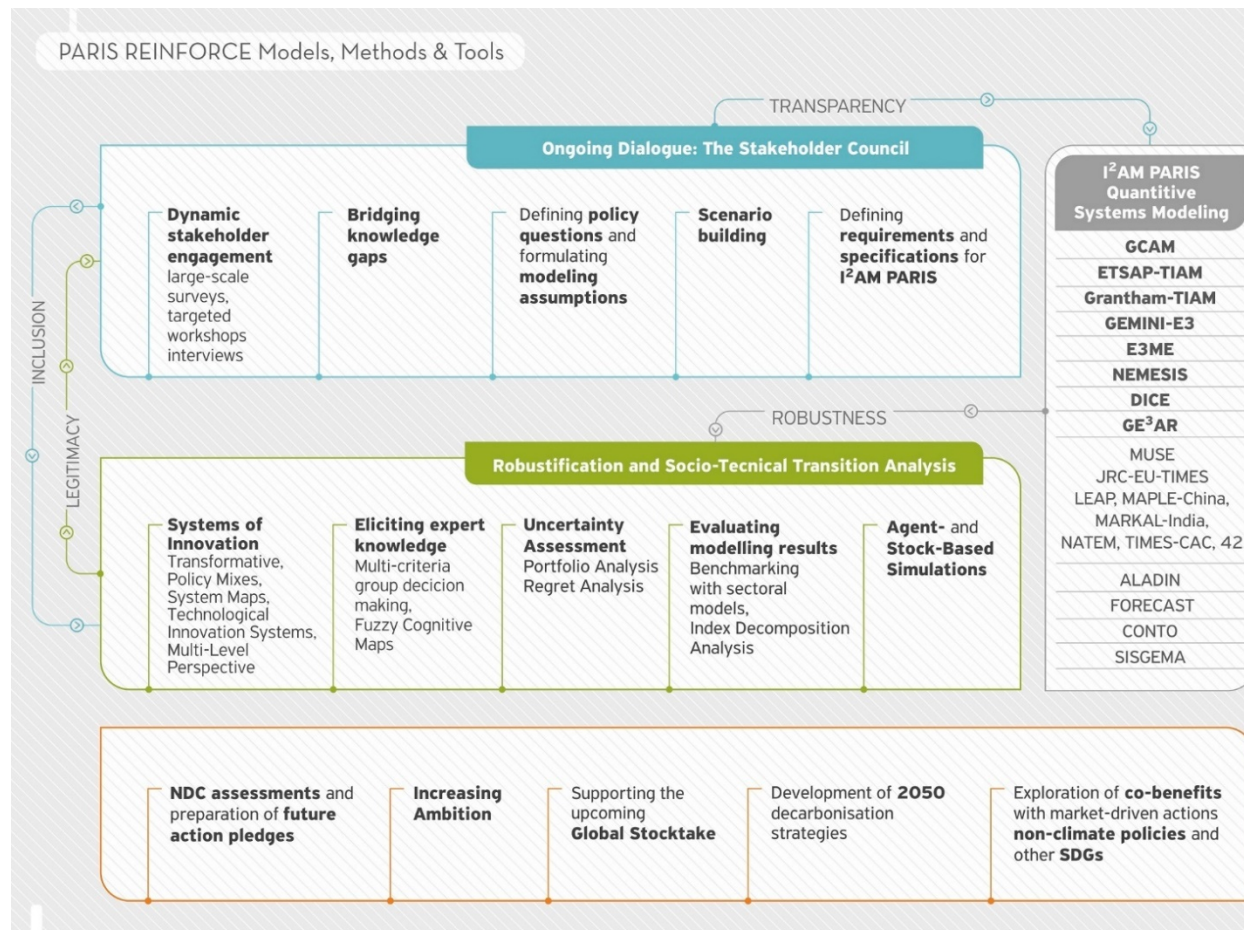


PARIS REINFORCE consists of **four fully interconnected pillars**



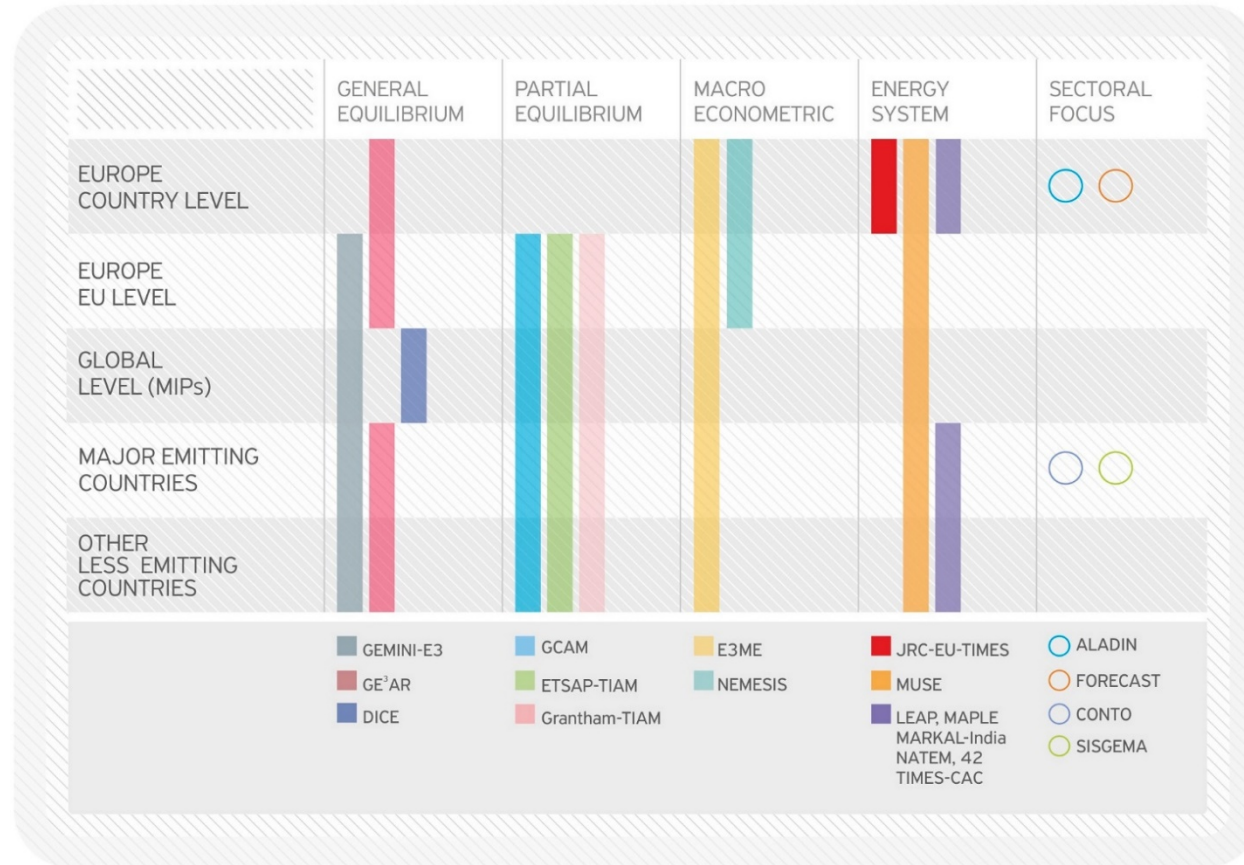
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Breaking down these four **dimensions** and their **interconnections**



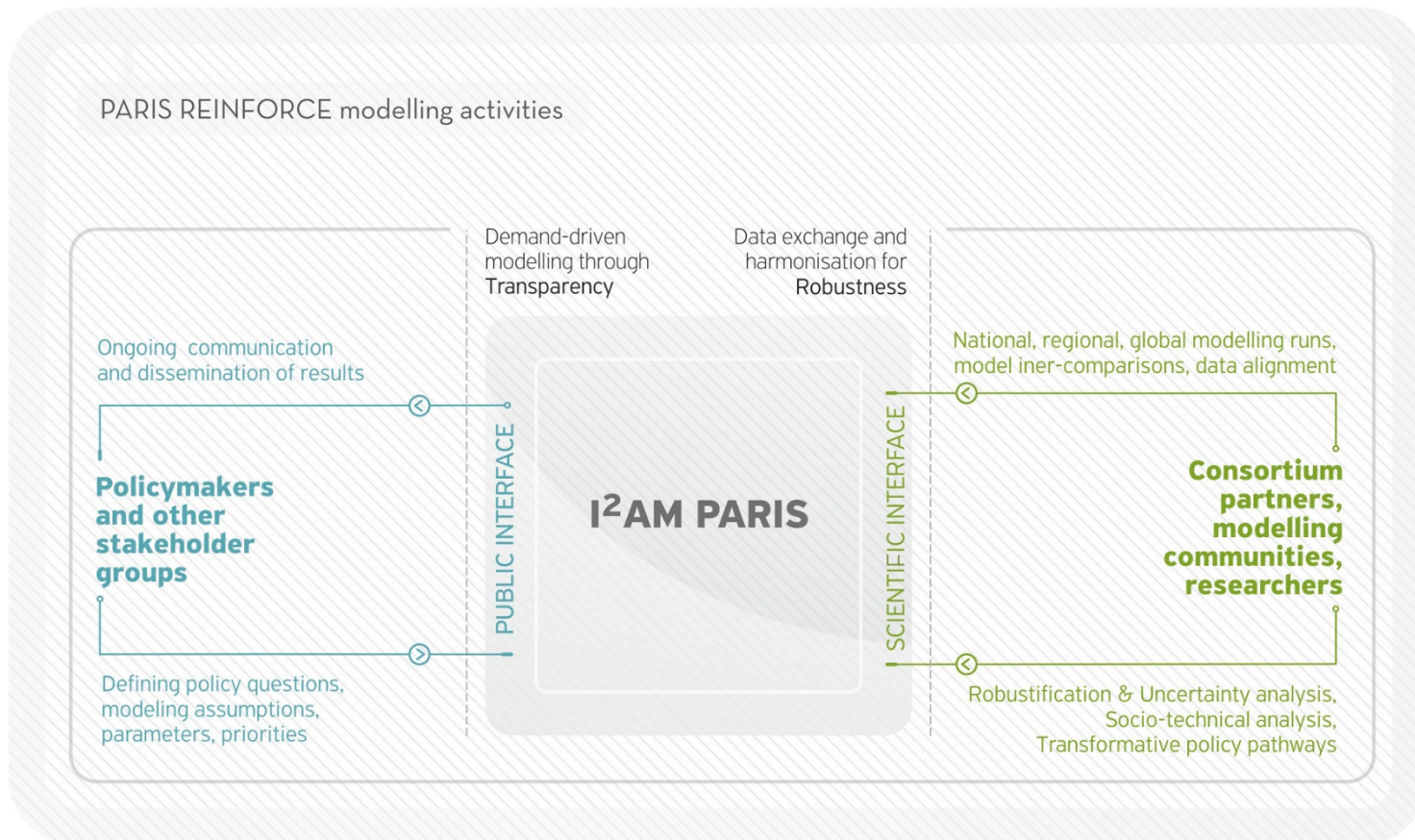
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A set of **complementary**-in terms of mathematical structure, geographical, sectoral and focus coverage-**integrated assessment, energy system** and **sectoral models**

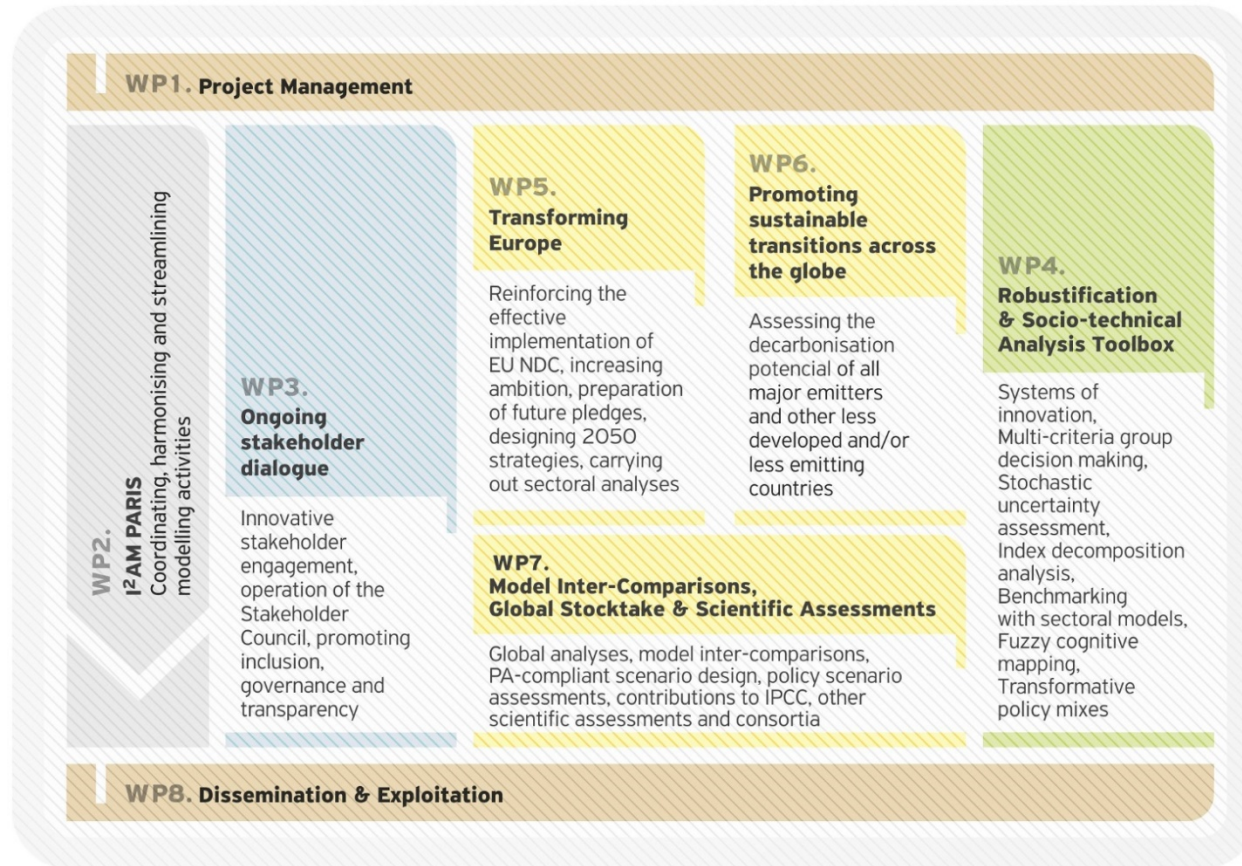


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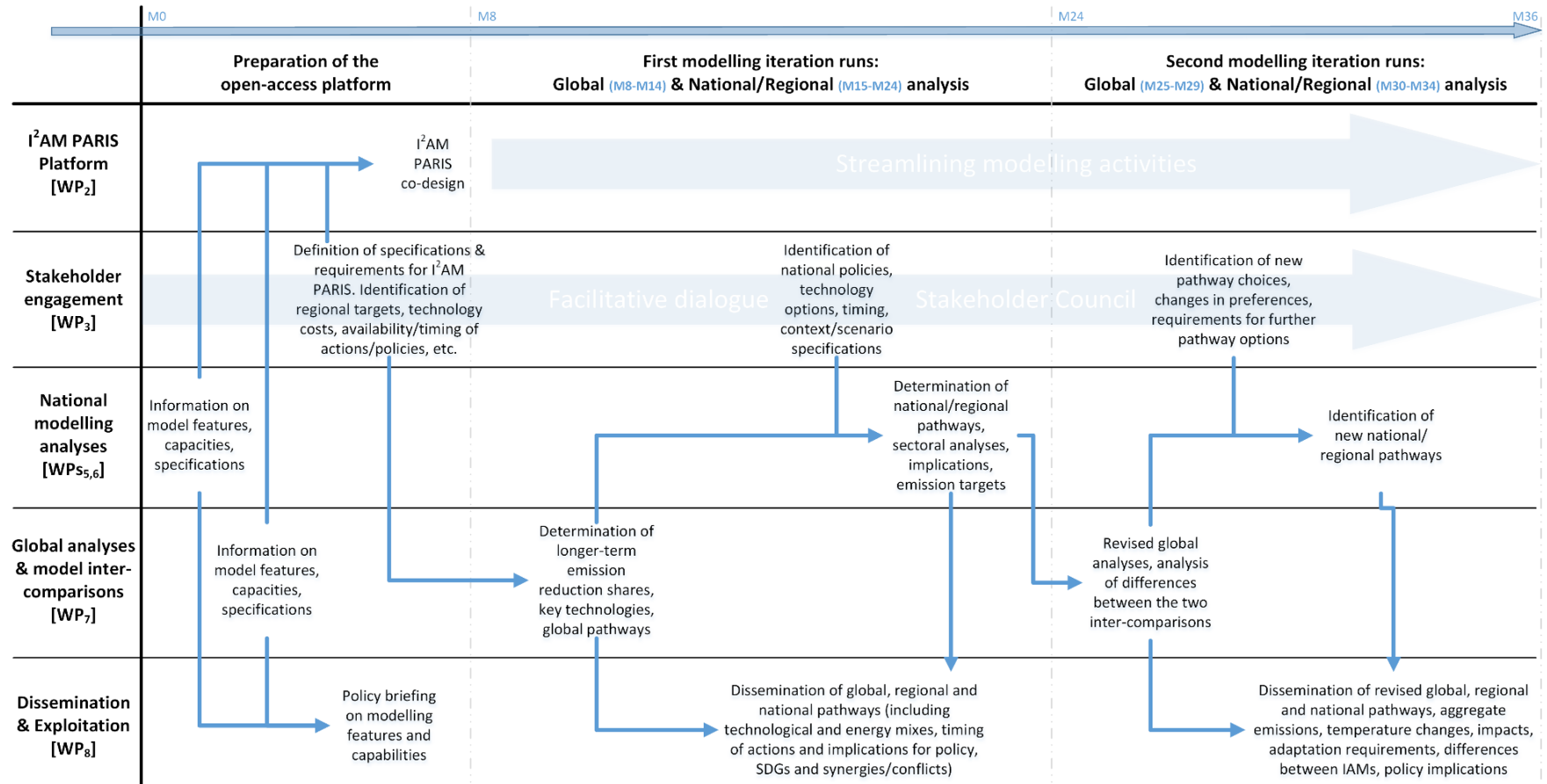
All **modelling activities**, including scenario inputs and assumptions, datasets, modelling outputs, and visualisation will be streamlined in an **open-access data exchange platform**



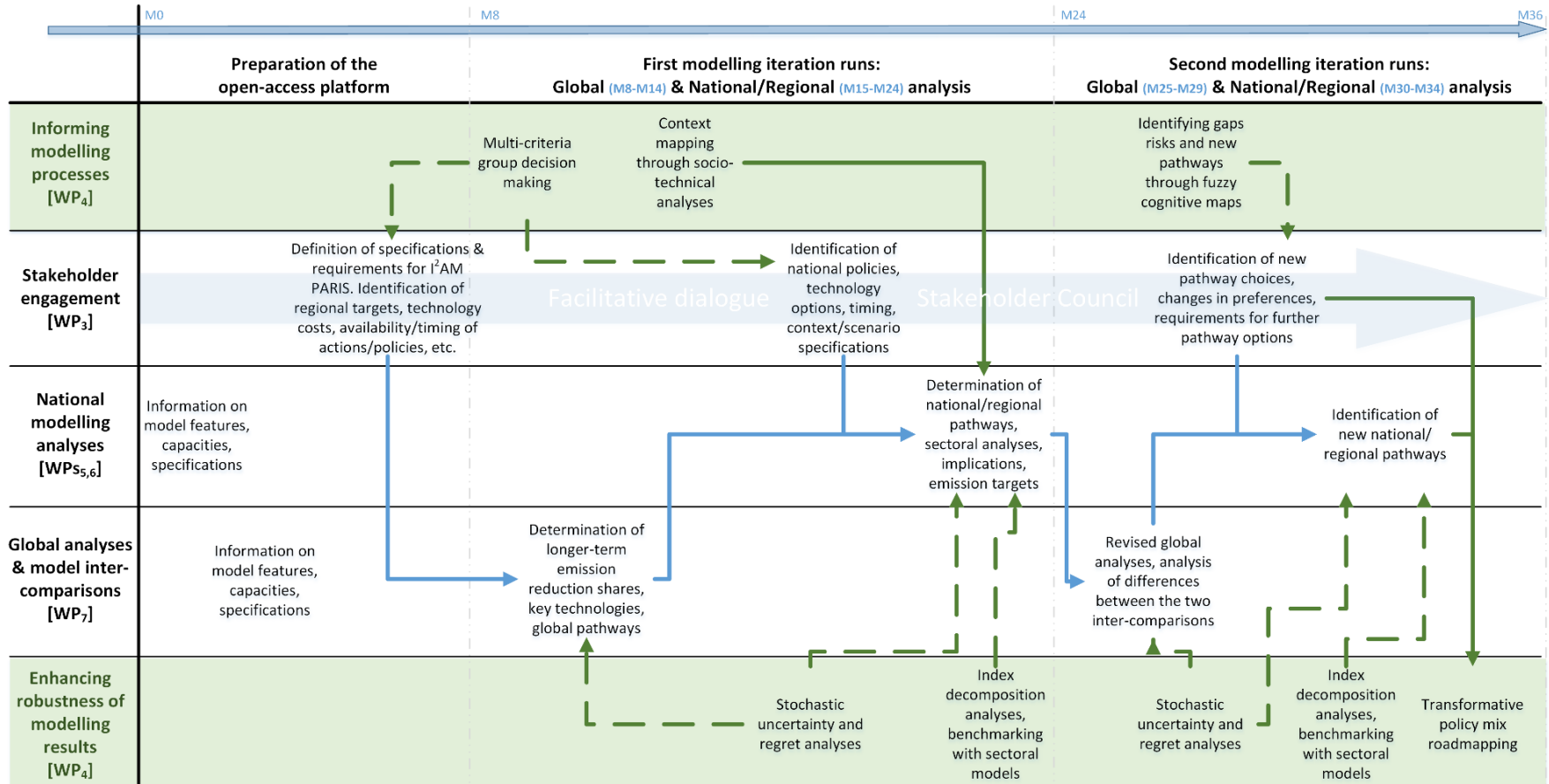
The PARIS REINFORCE work structure comprises **eight fully-interlinked work packages**, with the cross-cutting I²AM PARIS platform at its core.



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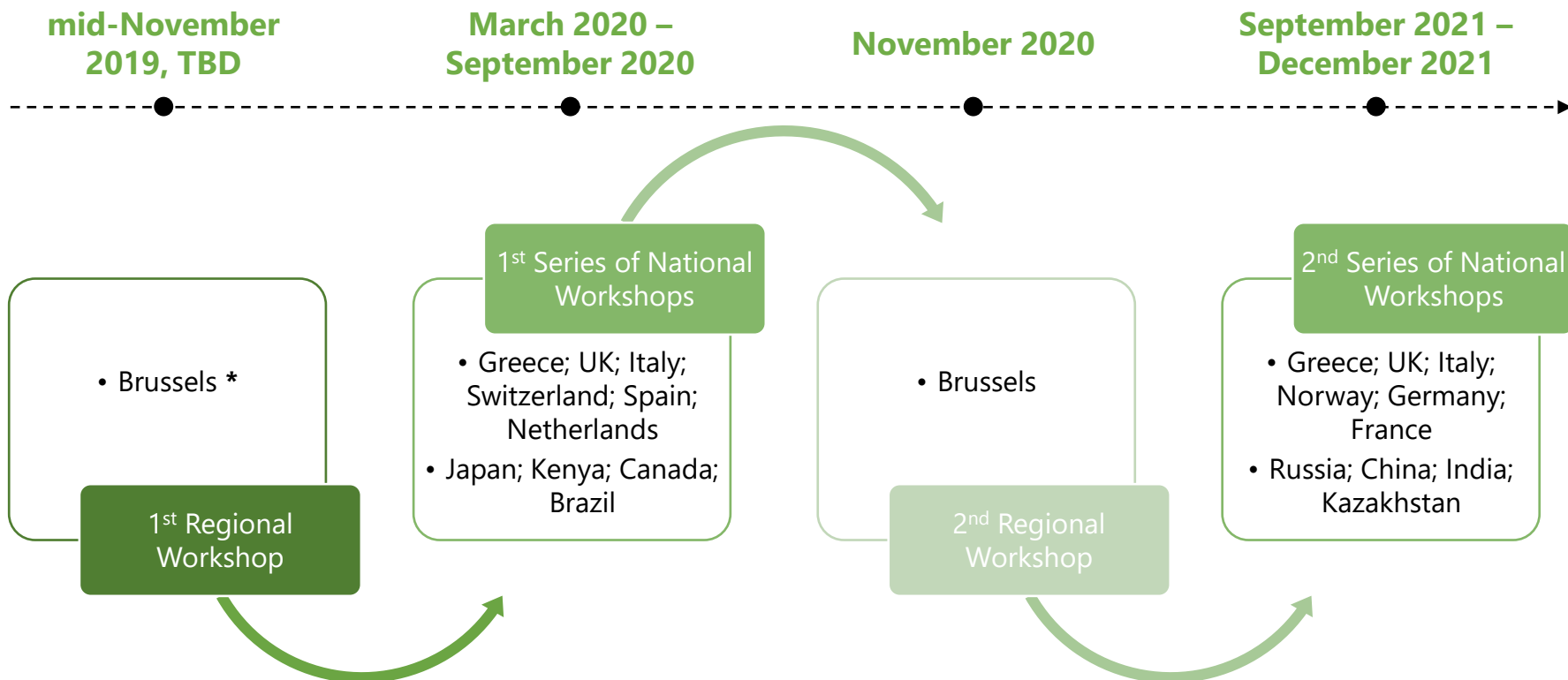
Key messages:

1. To deliver the Paris Agreement goals, **stakeholders must understand** how pathways and plans are created using IAMs, energy models and other analytical tools
2. It is only in this way can they have a **stake in the choices** and trade-offs
3. This is why **co-creation** is vital, supported by an **interactive platform** (I²AM PARIS) that enables deep engagement with pathways, choices and trade-offs.

Knowledge gaps:

- What are IAMs and energy models? How do they formulate pathways?
- How can they be augmented and made more real-world relevant to encompass stakeholder preferences and policy processes?
- How do we choose between pathways given large numbers of them, so as to minimise risk and maximise opportunity?





* This will focus on giving stakeholders the floor, understand their demands and promote ownership. It will include a short presentation of our capabilities to frame the debate, followed by a moderated roundtable to explore the modelling needs:

i) distributional effects, ii) trade-offs, iii) timing of mitigation/adaptation measures, iv) prioritising sectoral sequencing, (v) decision points, vi) feasibility/implications of different temperature rise levels (including 1.5°C and increased ambition), vii) interactions with SDGs, viii) co-benefits/synergies and conflicts with other policies.

It will serve as a platform to determine the specifications of the I²AM PARIS platform, based on mock-ups and state-of-the-art.



Since June 2019, we have made progress on

- Enhancing **transparency**: detailed, easy-to-digest description of all models to be used in the project, aimed at policymakers and other stakeholder groups
- Developing **policy support tools** on stakeholder-driven climate (policy) risk analysis against multiple criteria, evaluating consensus, and policy/technological uncertainty assessment
- Developing **methods** to be employed, in terms of informing models based on socio-technical analysis, analysing robustness of modelling outcomes, and exploiting stakeholder knowledge, e.g.:
 - *van de Ven, D. J., Sampedro, J., Johnson, F. X., Bailis, R., Forouli, A., Nikas, A., ... & Doukas, H. (2019). Integrated policy assessment and optimisation over multiple sustainable development goals in Eastern Africa. Environmental Research Letters, 14 (9).*
 - *Song, L., Lieu, J., Nikas, A., Arsenopoulos, A., Vasileiou, G., & Doukas, H. (2019, in press). Contested energy futures, conflicted rewards? Examining low-carbon transition risks and governance dynamics in China's built environment. Energy Research & Social Science.*
 - *Kanellou, E., Stamtsis, G., Nikas, A., & Doukas, H. (2019, under review). What would Greece look like in a post-lignite era? A systems of innovation analysis of the dominant technology phase-out. Energy Sources: Part B.*



We have kicked-off!



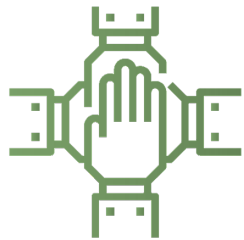
The PARIS REINFORCE **Kick-Off Meeting** has taken place in Athens, in June 10 & 11, 2019. There we discussed:

- The **role** of each partner
- Our **vision** and strategic aspects
- A first series of **CDE material** and suggestions
- The initial specifications of the **I2AM PARIS** platform
- A detailed schedule and presentation of work and **first deliverables** expected by December 2019



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We will establish synergies with the three sister projects of the topic LC-CLA-01 (**ENGAGE**, **LOCOMOTION**, and **NAVIGATE**), relevant projects & initiatives such as under topic LC-SC3-CC-2-2018 (e.g. **SENTINEL**), and projects with relevant international stakeholder networks (e.g. **EU-GCC Clean Energy Technology Network** and **CLIMA MED Acting for Climate in South Mediterranean**).



Joint **CDE activities** and policy **events**



Joint academic and policy **publications**



Sharing inputs/outputs in **I2AM PARIS platform**



Special Issue in **Energy Sources: Part B**

**“Transdisciplinary science in energy transitions:
thinking outside strictly formalised modelling boxes”**

Guest editors: Haris Doukas (NTUA); Annela Anger-Kraavi (Cambridge)

Submissions open until January 15, 2020





Thank you!

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