



# Working Group on System Dynamics for System Innovation

**Second meeting, 6 May 2024, 9:00-17:30, Hybrid (Seville and online)**

**Venue:** Picasso Room, JRC Seville, Edificio Expo, c. Inca Garcilaso 3, 41092 Seville, Spain

**WEBEX link for online participants: [Join the meeting](#)**

## [Meeting purpose and scope](#)

The Working Group brings together academic experts and policy practitioners interested in systems thinking, measurement and modelling and provide a space for collective learning, reflection, and co-creation. The aim of the second meeting of the Working Group is to present and discuss an early version of the POLYTRoPOS (POLYvalent model for the ex ante evaluation of TRansformative Policy Scenarios) System Dynamics model by the JRC, applied to the case of renewable energy in the EU27 and to the twin challenge of effective deployment and production capability development through innovation. The meeting will include a dialogue with practitioners and policy analysts on adapting the model to the realities of policy-making. This dialogue will be a stepping stone to the planned cases in specific domains and places.

## [About the JRC project “System Dynamics for System Innovation.](#)

There is mounting interest in innovation policy approaches that can lead to transformative societal outcomes which include rapid economic development, environmental sustainability and an inclusive society. These theoretical developments have inspired widespread experimentation by policy practitioners. However, the growing popularity of transformative innovation policy has not yet been matched with suitable developments in measurement and evaluation frameworks and tools. Existing tools for measuring, modelling and evaluating innovation policy inputs and outcomes are unable to capture crucial features of transformative innovation policy, including synergies, tipping points, sequences, multi-level interactions and rebound effects.

A new exploratory project by the European Commission's Joint Research Centre (JRC) aims to test the feasibility and demonstrate the potential policy applications of a System Dynamics (SD) model suitable for the *ex ante* impact assessment of transformative innovation policy scenarios. The overall aim is to create the knowledge base necessary for a framework suitable for the *conceptualisation, measurement, modelling and evaluation* of transformative innovation policies.

## AGENDA, 6 May 2024

### [Webex link](#)

#### 09:00-09:05 **Opening address**

- Carlos TORRECILLA, Head of Unit B7, *Innovation Policies and Economic Impact, Joint Research Centre (JRC), European Commission*

#### **SESSION 1**

*Chair:* Edurne MAGRO, University of Deusto/Orkestra (ES)

09:05-09:15

#### **System Dynamics for System Innovation: JRC Project update**

- Dimitrios PONTIKAKIS, *Joint Research Centre (JRC) B7, European Commission*

09:15-09:30

#### **Review of literature underpinning POLYTRoPOS**

- Matthijs JANSSEN, *Utrecht University (NL)*

09:30-09:45

#### **Key indicators of system innovation in renewable energy**

- Hedvig NORLEN, *Urbanstat (IT)*

09:45-10:00

Q&A

#### 10:00-10:05 **Welcome address**

- Mikel LANDABASO, Director JRC B, *Fair and Sustainable Economy, Joint Research Centre (JRC), European Commission*

#### **SESSION 2**

*Chair:* Michal MIEDZINSKI, *JRC B3, Territorial Development, European Commission*

*Rapporteur:* Dimitrios PONTIKAKIS, JRC B7

#### 10:05-10:20 **POLYTRoPOS in renewable energy: Causal Loop Diagrams (CLDs) and next steps**

- Georgios PAPACHRISTOS, *Eindhoven University (NL)*
- Q&A

10:20-10:30

*Discussant:* Pål Ingebrigt DAVIDSEN, *University of Bergen (NO)*

10:30-10:40

*Discussant:* Steve SMITH, *University of Exeter (UK)*

10:40-11:00

Q&A

11:00-11:30

#### **COFFEE BREAK**

#### 11:30-12:00 **Keynote Address: The economics of system change**

- Simon SHARPE, *Director of Economics, UN High-Level Climate Action Champions and World Resources Institute (USA)*

#### **SESSION 3 - ROUNDTABLE POLICY DISCUSSION**

#### 12:00-13:15 **Developing the policy layer of model: interventions and scenarios**

*Chair:* Daria CIRIACI, *JRC B7, European Commission*

*Rapporteur:* Michal MIEDZINSKI, JRC B3

- Bianca CAVICCHI, DG Research and Innovation, European Commission (online)
- Fabienne CORVERS, SG, European Commission (online)
- Luis GOÑI, SODENA, Navarra (ES)
- Göran MARKLUND, VINNOVA (SE) (online)
- Josefina MONTEAGUDO, DG GROW, European Commission (online)
- Matthias WEBER, Austrian Institute of Technology (AT) (online)

13:15-13:30

Q&A

13:30-14:30

#### **LUNCH at the club (self-paid)**

14:30-14:45 **Keynote Address: System Dynamics modeling for technology diffusion**  
• Mauricio URIONA, *Universidade Federal de Santa Catarina (BR)*

**SESSION 4**

*Chair: Nuno VIDEIRA, Center for Environmental and Sustainability Research, FCT NOVA (PT)*

*Rapporteur: Dimitrios PONTIKAKIS, JRC B7*

14:45-16:00 **In-depth review and validation of POLYTRoPOS**

Structured collective feedback and discussion on:

- (1) Causal loops: *improvements within system boundaries?*
- (2) Exogenous variables: *how (else) to count/estimate them?*
- (3) Policy outcomes: *how (else) to count them, how to bring them about?*

16:00-16:10 **COFFEE BREAK**

16:15-16:30 **New expectations on STI policy: The OECD's Transformative Agenda for STI policies**

- Carolina RESENDE HADDAD, *OECD, Science, Technology and Innovation Directorate*
- Q&A

16:30-17:30 **Advisory Board meeting (*by invitation only*)**

*Moderator: Dimitrios PONTIKAKIS, JRC B7*

17:30 **END**