

Green Industrial Transformation: Challenges in Transformative Policies

The purpose of the special session is to advance the discussion on the green transition of manufacturing industries and the role of and the challenges for industrial policy therein. Driving the manufacturing industries and energy sector out of the carbon lock-in requires the development and adoption of new technologies, the establishment and repurposing of infrastructure, reforming institutions and regulations, and changing consumption patterns – *and all in conjunction* (Köhler et al., 2019). To do so, there is a need for industrial policy (Aiginger & Rodrik, 2020; Altenburg & Rodrik, 2017), normative innovation policy and transition governance (Schot & Steinmueller, 2018), and mission-oriented policy interventions (Mazzucato, 2018).

The special session features a panel with contributions addressing key challenges for transformative policies to make carbon-intensive manufacturing industries sustainable. Hereby, the emphasis is on the following topics. Firstly, the transformation of carbon-intensive industries requires a **multi-industry perspective** that considers the current and future supply chains, the infrastructure, the energy sector, as well as the complementary industries that contribute to the transition itself. Of interest is how to create ‘green’ windows of opportunity in emerging industries (e.g., green tech, carbon capture sector) and resolving conflicts with and resistance in phase-out sectors (e.g., phase-out coal mining, lobbying for subsidies by hard-to-abate industries). How can policy create these windows of opportunity? How can risks and failures be mitigated? How realistic is it to reconcile exploitation of key resources for energy transition with the objectives of just transition, inclusive growth and reduction of inequality? Secondly, an integrated **system of policies** on climate, innovation, energy, and industry is required to orchestrate the change in the range of industries, institutions, and infrastructure. The design and implementation of such a system of policies has itself a range of challenges, including the alignment of policies and overcoming the counteraction.

As such, the special session contributes to several key scholarly debates. Firstly, it highlights the rise of new policy paradigms. Importantly, there is a revival of industrial policy, notably for sustainability (see Kastelli et al., 2023; Aiginger & Rodrik, 2020; Altenburg & Rodrik, 2017) and a ‘third generation’ of innovation policies (Schot & Steinmueller, 2018) targeting normative technological change (Mazzucato, 2018), with a prominent role for governance, participation, and learning. Secondly, considering that also these policies suffer from a variety of ‘failures’ (Weber & Rohrer, 2012; Mathews et al., 2023), it is time to take stock of solutions and formulate a further research agenda. Thirdly, in practice, policy makers are readily devising integrated systems of policies (e.g., the European Green Deal) and seeking progressive alignment of policies (e.g., the German climate plan attuning policies on energy, industry, hydrogen, etc.). However, given their experimental nature, there is a need for academic analysis thereof and further underpinning for their design. This includes notably also how to attune them to the place-specific and regionally fragmented industrial, infrastructural, and institutional challenges.

Guest speaker: Tilman Altenburg of German Institute of Development and Sustainability (TBC).

Submissions to this special session at this year’s EAEPE conference in Bilbao shall be done through the homepage of EAEPE: https://eaepe.org/?page=events&side=annual_conference&sub=eaepe_2024_cfp

The **deadline for submission is 5th of April 2024.**

For additional inquiries, please contact the organizers:

Ben Vermeulen (RA[D]) – Department for Resilient Energy Systems, Sustainability Research Center (artec), Faculty of Production Engineering, University of Bremen, Germany. ben.vermeulen@uni-bremen.de

Ioanna Kastelli (RA[E1]) – Department of Business Administration, School of Economics and Business Administration, University of Thessaly, Greece. ikastelli@uth.gr

Andreas Pyka (RA[D]) – Chair of Innovation Economics, Department of Economics, University of Hohenheim, Stuttgart, Germany. a.pyka@uni-hohenheim.de

Lukasz Mamica (RA[E1]): Department of Public Economics, Krakow University of Economics, Krakow, Poland. mamical@uek.krakow.pl

Bibliography

Aiginger, K., & Rodrik, D. (2020). Rebirth of industrial policy and an agenda for the twenty-first century. *Journal of industry, competition and trade*, 20, 189-207.

Altenburg, T., Rodrik D. (2017). Green industrial policy: accelerating structural change towards wealthy green economies. In: Tilman Altenburg, Claudia Assmann (eds.), *Green industrial policy: concept, policies, country experiences*, Geneva; Bonn: UN Environment; German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE), 1-20

Andreoni A, Chang H-J (2019). The political economy of industrial policy: Structural interdependencies, policy alignment and conflict management. *Structural change and economic dynamics* 48: 136–150.

BMWK (2023). Industry policy in changed times. Safeguarding our industrial base, renewing our prosperity, boosting our economic security. <https://www.bmwk.de/Redaktion/EN/Publikationen/Industry/industrial-policy-in-changing-times.html>

Crisuolo C, Gonne N, Kitazawa K, Lalanne G (2022) An industrial policy framework for OECD countries: Old debates, new perspectives. OECD.

Geels, F., Hekkert, M.P., Jacobsson, S. (2008). The dynamics of sustainable innovation journeys. *Technology Analysis and Strategic Management* 20 (5): 521–536.

Heinrich Böll Foundation, (2022). Making the Great Turnaround work – Economic policy for a green and just transition. Volume 27 of the Publication Series Economic & Social Issues. Heinrich Böll Foundation, ZOE – Institute for Future-Fit Economies, and Finanzwende Recherche 2022 .

Kastelli, I., Mamica, L., Lee, K. (2023). New perspectives and issues in industrial policy for sustainable development: from developmental and entrepreneurial to environmental state. *Review of Evolutionary Political Economy* 4(1): 1-25.

Mathews J., Thurbon E., Kim S-Y, Tan H. (2023). Gone with the wind: how state power and industrial policy in the offshore wind power sector are blowing away the obstacles to East Asia's green energy transition. *Review of Evolutionary Political Economy* 4(1): 27-48.

Mazzucato, M. (2018). Mission-oriented innovation policies: Challenges and opportunities. *Industrial and Corporate Change*, 27(5), 803–815.

Roberts C, Geels FW, Lockwood M, Newell P, Schmitz H, Turnheim B, Jordan A (2018) The politics of accelerating low-carbon transitions: towards a new research agenda. *Energy Res Soc Sci* 44:304–311

Sandhu M. (2021). What is industrial policy for?: some questions for advocates to ponder to avoid counterproductive results. Financial Times.

Schot, J., & Steinmueller, W. E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research Policy*, 47(9), 1554–1567. <https://doi.org/10.1016/j.respol.2018.08.011>

Sovacool Benjamin K. (2016). How long will it take? Conceptualizing the temporal dynamics of energy transitions. *Energy Research and Social Science* 13: 202-215.

Weber, M., Rohracher, H. 2012. Legitimizing research, technology and innovation policies for transformative change: Combining insights from innovation systems and multi-level perspective in a comprehensive 'failures' framework. *Research Policy* 41(6), 1037-1047.