

OXFORD



THE
TRIPLE CHALLENGE
FOR
EUROPE



Economic Development,
Climate Change,
and Governance

EDITED BY

JAN FAGERBERG, STAFFAN LAESTADIUS, & BEN R. MARTIN

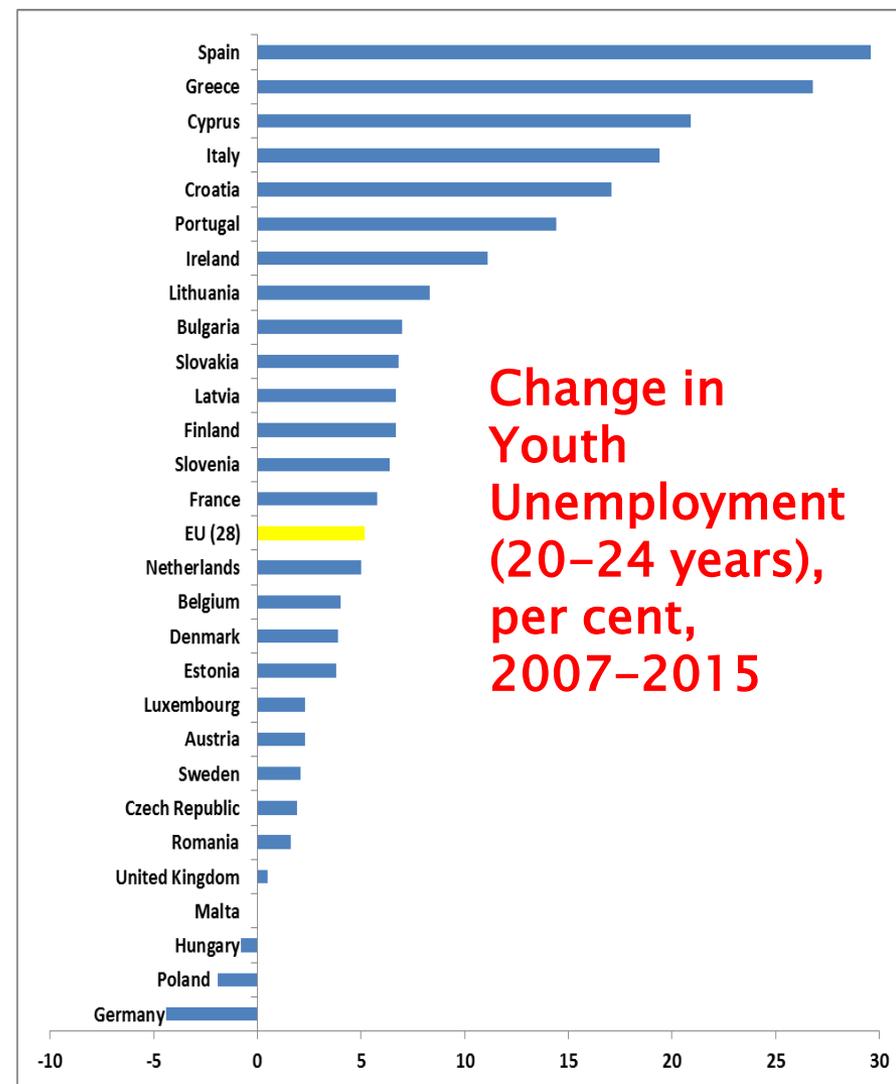
Transforming the economy to sustainability: The role of innovation policy

Jan Fagerberg
University of Oslo
www.janfagerberg.org

NFR, Oslo, 03.03.2017

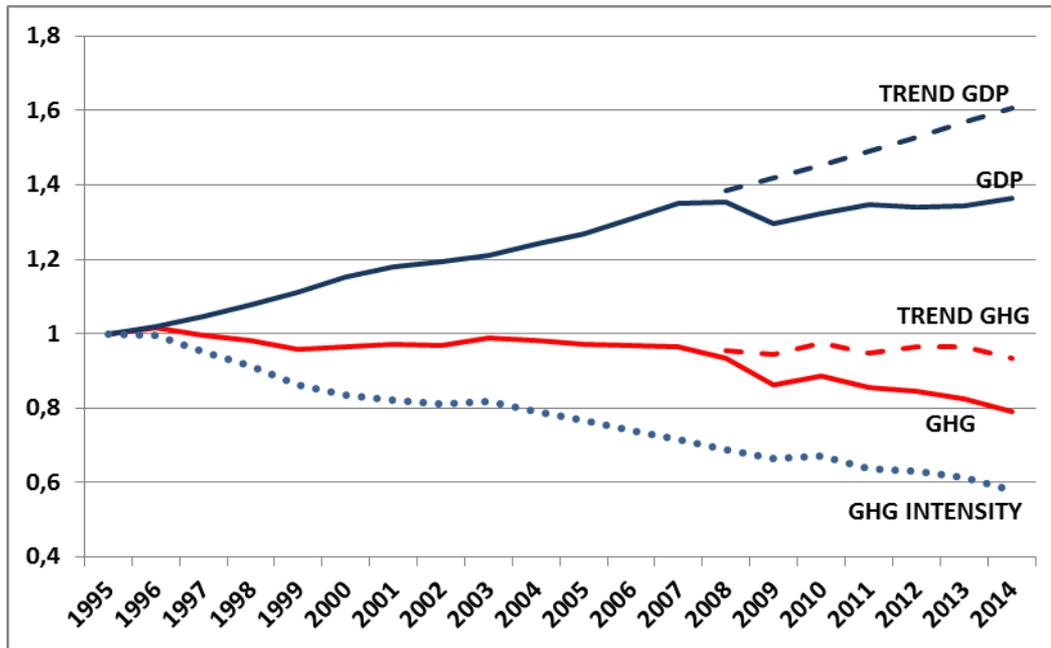
The end of the road for the Lisbon-Barcelona agenda

- Lisbon-Barcelona (2000 -): Make Europe the **most dynamic knowledge-based economy** worldwide
- **Catch up** with the US, improve **convergence/social cohesion**
- Through **increasing R&D investments to 3% of GDP**
- Result: **no catch up** with the US, **stagnation, unemployment, parts of Europe falling behind**



Not working!

Failing to deal with the climate challenge



To reach 2100 goals, the GHG intensity must decline **twice as fast** as in the past (or **GDP must shrink every year**).

GDP growth , GHG emissions and GHG intensity
EU28, 1995-2014

Recent decline in European GHG emissions caused solely by the crisis

A radical transformation of the economy & a new policy stance required

Back to basics: Why (how) is innovation relevant for policy?

- ▶ Innovation is not primarily about **generation of new ideas**, the traditional focus of science and research policies
 - ▶ But about exploiting such ideas **in practice** in order to provide **solutions to problems/challenges** that arise - such as **climate change** - and **enhance economic performance** (welfare & employment)
 - ▶ Relevant not only in «high tech» or «science-based» sectors but **in all parts of society** including services, public sector etc.
 - ▶ **All ministries and government at all levels** need to **engage** with **innovation and innovation policy** in order to fulfill their mandate.
- 

Providing direction to the collective innovation journey

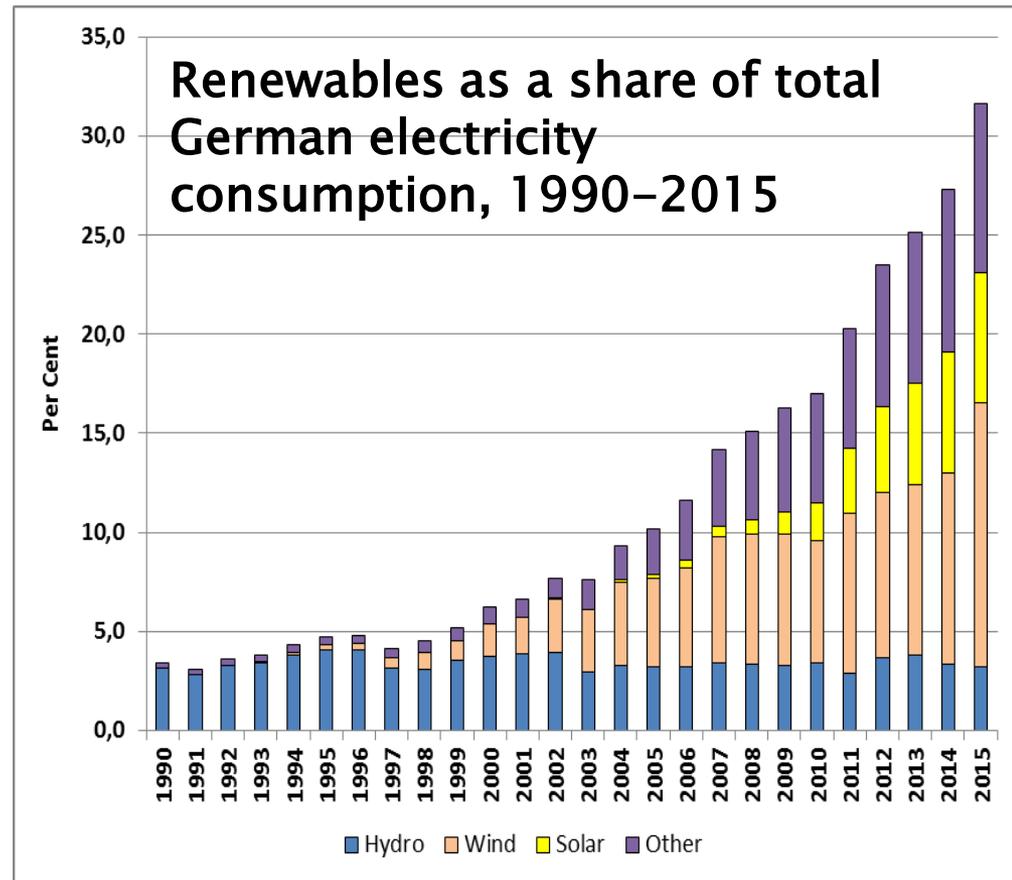
- ▶ The “**problem-solving**” nature of innovation makes it particularly **relevant for dealing with challenges** that are high on policy makers’ agendas
- ▶ Many examples throughout history of “**mission-oriented (innovation) policies**” with great results (internet for example)
- ▶ Such policies are as relevant as ever; responding to challenges, such as **global warming**, and opportunities such as **renewable energy, electrification of transport, ICTs, circular economy ...**
- ▶ Lack of opportunity & uncertainty about (future) demand can seriously constrain innovation. **Credible political goals** for society’s development embedded in policy can lead to higher opportunity & reduced uncertainty, thereby **unleashing innovation**.
- ▶ This requires **leadership, vision & policy coordination**

▶ **Why are we waiting?**

It can be done!

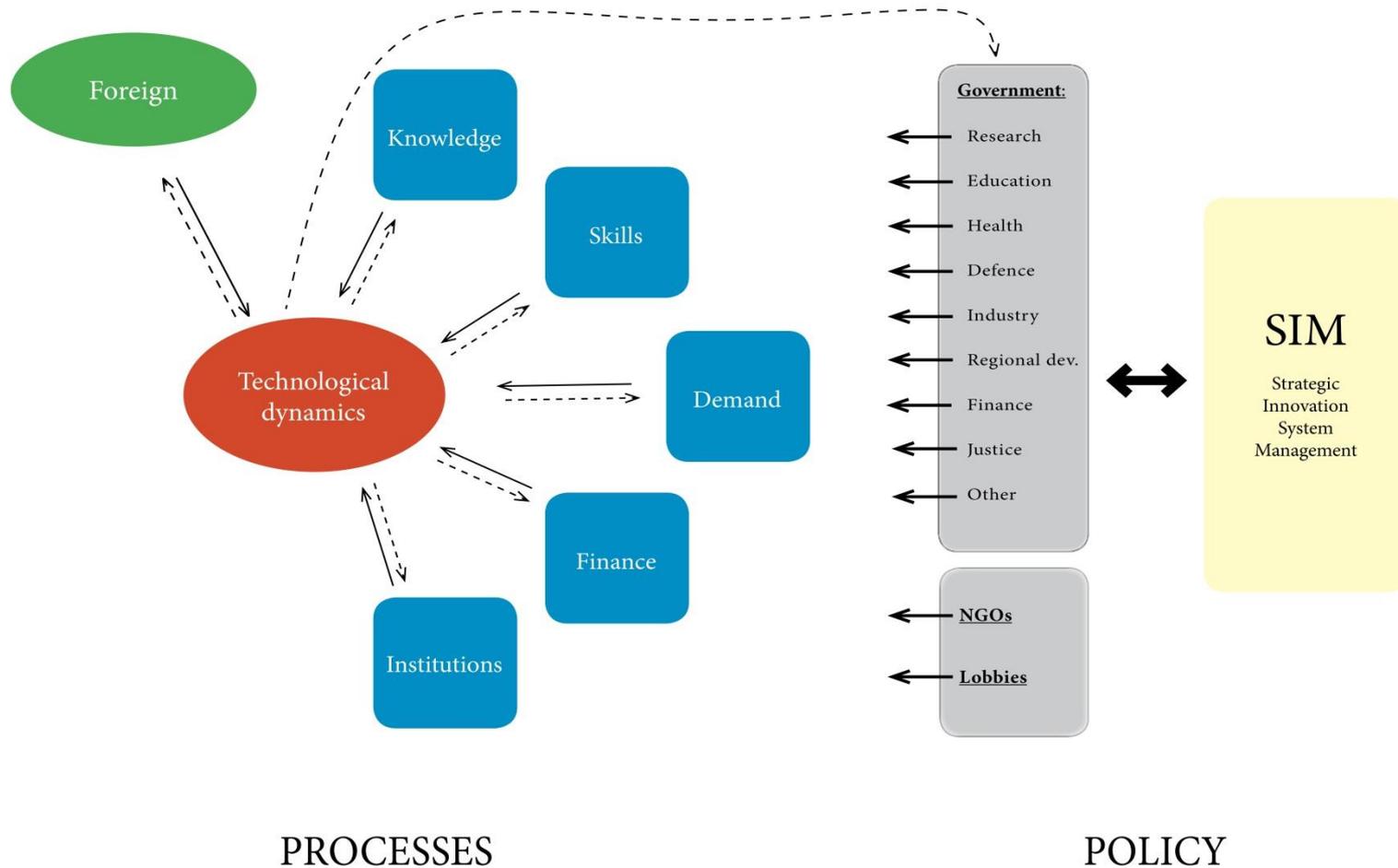
Germany's "Energiewende"

- ▶ Surprisingly rapid transformation
- ▶ Bottom-up initiative
- ▶ Several technologies supported (avoiding premature lock-in)
- ▶ 250 000 jobs creates
- ▶ Thriving capital-goods industry
- ▶ Innovation policy in practice (but not in name?)



Germany's "Energiewende" – supporting innovation, diffusion and transformation

Complementarities, innovation system dynamics & policy coordination



Source: Fagerberg, J. (2016) Innovation Policy: Rationales, Lessons and Challenges, Journal of Economic Surveys (DOI: 10.1111/joes.12164)

Lessons for innovation policy & governance

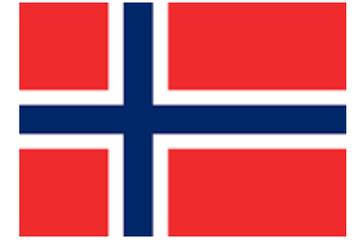
- ▶ Development of a common **vision** and strong involvement of the **political leadership** essential
- ▶ And **close coordination of policies across a number of different domains**
- ▶ As well as development of **new forms of innovation policy governance** (SIM) involving **key actors** in the innovation system including NGOs (as in f.i. Finland)
- ▶ **Continuous upgrading of capabilities in innovation agencies and government** required

Innovation policy must be put to work ...



... to support a transition to sustainability

A vision for the future ?



- ▶ A **vision** for the future needs to be based on a thorough analysis of the **challenges and opportunities** facing **Norway** (such as the ongoing revolution in **renewable energy** technology) on the one hand and the **resources and capabilities** of **Norwegian innovation actors** on the other
- ▶ Such a vision and the analysis underpinning it may provide a better basis for **strategic choices** that policy makers need to make, for example with respect to **goals** for innovation policy, selection of **strategic initiatives** and the **mix of policy instruments**
- ▶ To avoid being too «top down» the process of developing such a vision might profitably engage a **broad range of actors** including policy-makers at different levels, public sector organizations, NGOs, businesses and the wider public.