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Borderstep Institut für
Innovation und Nachhaltigkeit

Governance of rapid socio-technical transitions in the energy sector

A case study based contribution to transformation research

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Borderstep Institute for Innovation and Sustainability

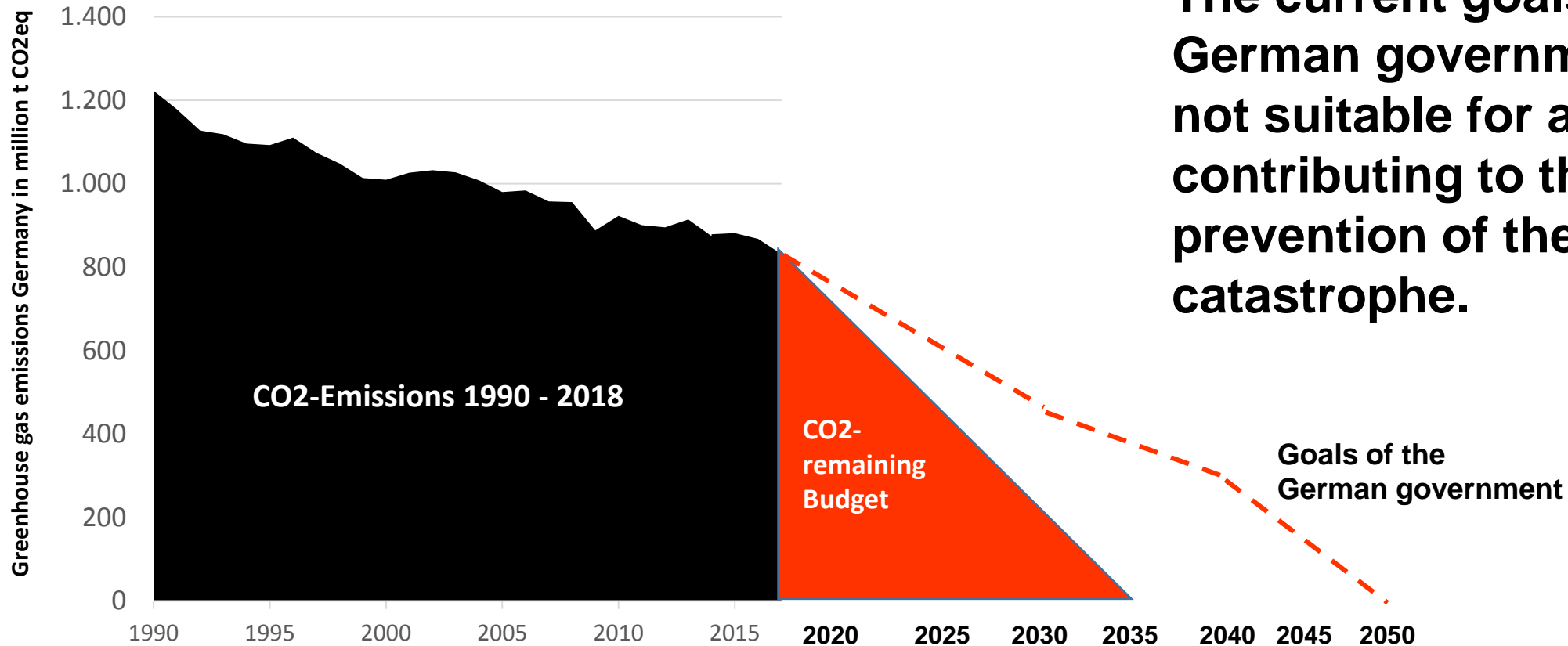
Workshop From Innovation to Acceptance, October 21st 2020



Introduction



What is the challenge?



The current goals of the German government are not suitable for adequately contributing to the prevention of the climate catastrophe.



What is the problem?



Foto: © Jens Clausen

- **The dissemination of environmental innovations is often slow, too slow to achieve the climate and environmental protection goals set!**
- **The diffusion problem arises above all with radical system innovations.**

What did we want to find out?

- **What can be learned from previous attempts by states to activate radical environmental system transformations?**

7 Case studies

- **Which policy strategies and policy mixes are used in successful transformation cases?**

Regional test case

- **What can be learned from the cases for building-related heat supply in Germany?**

Discussions and workshops

Empirical bases: 7 case studies



Case studies of successful transformation

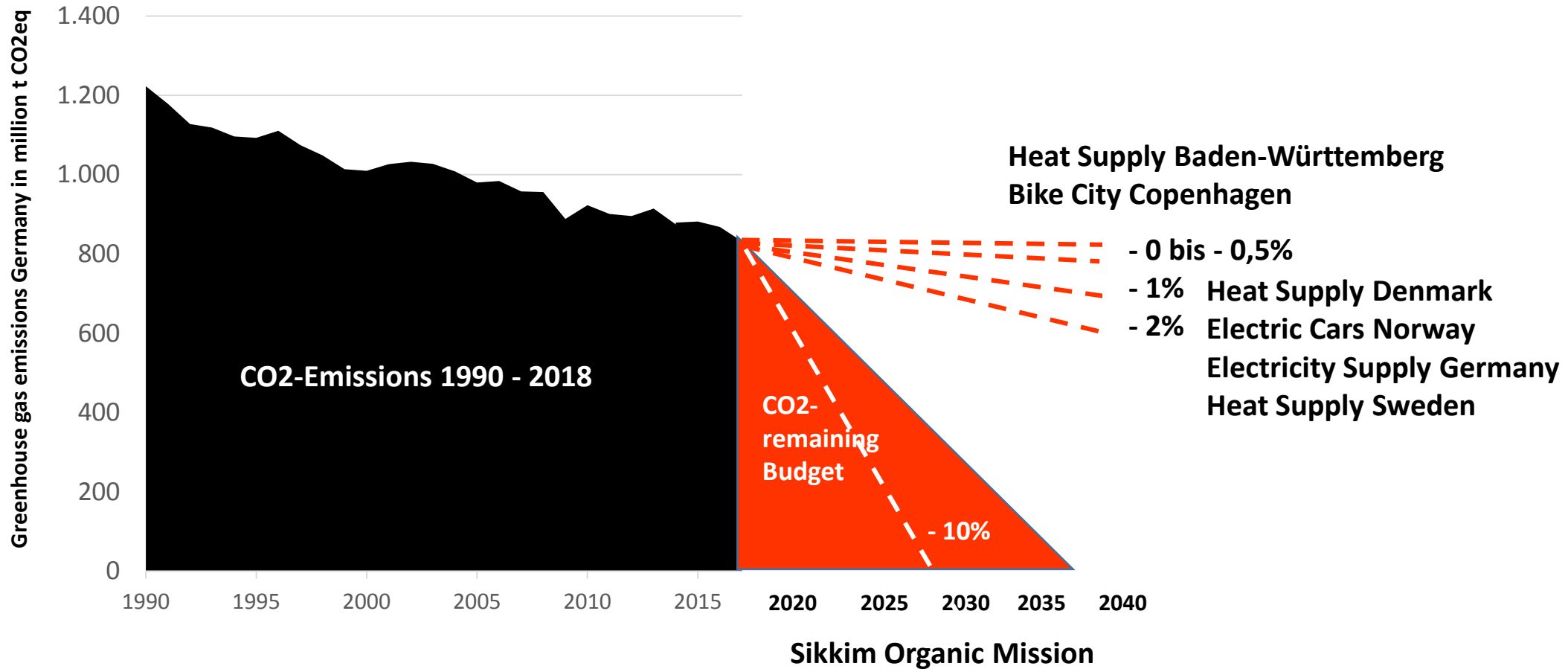
- **Power generation from renewable energies in Germany (Clausen, 2019)**
- **Heat supply Sweden (Clausen & Beucker, 2019)**
- **Heat supply Denmark (Clausen & Beucker, 2019)**
- **Car electromobility in Norway (Clausen, 2019)**
- **Conversion of the city of Copenhagen into a bicycle city (Clausen, Warnecke & Schramm, 2019)**
- **Promotion of the expansion of renewable heat supply in Baden-Württemberg (Clausen & Warnecke, 2019)**
- **Organic farming in the Indian federal state of Sikkim (Clausen & Olteanu, 2019)**

All case studies are available in German language on

www.borderstep.de



What was the speed of the transformation?



Four for governance strategies
targeting the synchronisation of
innovation and **exnovation**

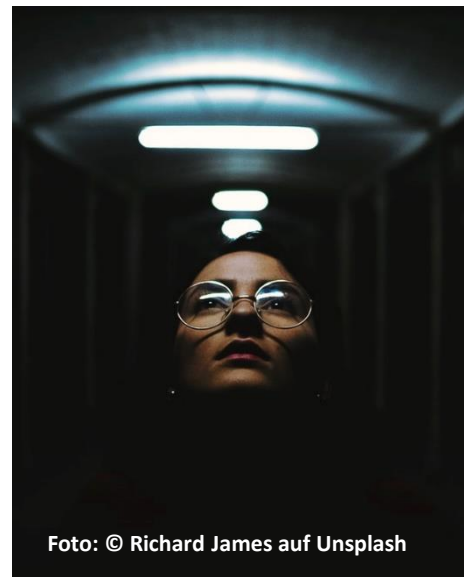


Which basic strategies are required?

Creating and maintaining directional stability



Innovation policy and niche development



Infrastructure development



Synchronization of Diffusion and Exnovation



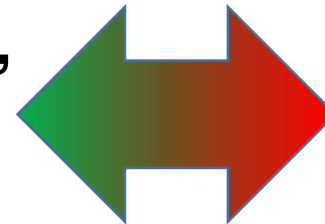
Creating and maintaining directional stability



Foto: © Niedersächsische Staatskanzlei/ Holger Hollemann

Consensus on goals and plans

Legitimation,
Support,
Coalitions

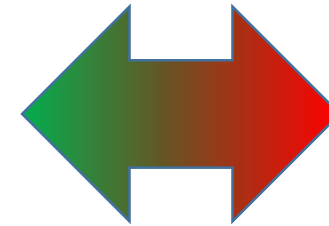


Dealing with
opponents and
their networks
Dealing with
lobbies, fake news,
myths

Innovation policy and niche development

Creating niche markets

Research and development for green products



Termination of R&D support for unsustainable products

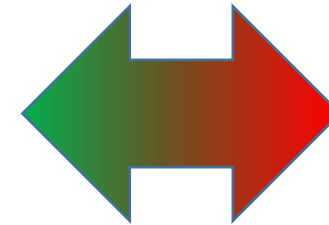
Support of green entrepreneurship

Infrastructure development



Foto: © Fran Hogan auf Unsplash

**Deploying
infrastructures
which are
required for a
sustainable
society**



**Dismantling of
infrastructures
that stand in
the way of
sustainability**

Synchronization of Diffusion and Exnovation

Provision of resources and funding

Business Development for green growth

Improving the cost-benefit ratio

Gearing taxes, charges and subsidies to speed up change

Regulatory requirements, bans

Creation and destruction

„Creation (niche support)“	„Destruction „regime destabilisation“
C1: Goals and influence on search and development strategies	D1: Changes in network structures and players
C2: Resource mobilisation	D2: Fundamental institutional changes
C3: Research and dissemination of knowledge	D3: Taxes and subsidies
C4: Entrepreneurship and start-up support	D4: Regulation
C5: Legitimation of new technologies and visions	D5: Reduction of R&D-Support for sustainable technologies
C6: Establishment of standards and market formation	
C7: Infrastructure development	
C8: Improvement of cost-benefit ratio	

nice

Innovation

not so nice

Exnovation

Kivimaa, P. & Kern, F. (2016). Creative destruction or mere niche support? Innovation policy mixes for sustainability transitions

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 Borderstep Institut



Governance of Radical System Transitions

Effects of political strategies and instruments
on the transition of socio technical systems

Evaluation of the case studies from work package 1

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Full study: Clausen, J.; Fichter, K. (2020). Governance of radical System Transitions. Borderstep. Berlin.
www.borderstep.de