



# Forschungskolloquium | Research Seminar

*Vortrag im Rahmen dieses Seminars*

Titel:

**Energy Infrastructure Planning for Europe's Hydrogen, Import and Carbon Management Strategies**

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Abstract:

The past few years have witnessed the publication of various European and national strategies addressing hydrogen, imports, and carbon management in support of the energy transition. These decisions are highly entangled, requiring coordinated planning of energy infrastructures to achieve climate action goals and reach net-zero emissions cost-effectively by mid-century. The presentation will showcase recent research conducted at our department in support of these efforts.

The talk will explore how Europe could achieve a balance between green energy and material imports versus domestic production -- addressing import volumes, locations, and carriers (electricity, hydrogen, ammonia, methanol, steel) -- and their implications for domestic infrastructure requirements and industrial value chains. It will also examine the potential advantages of carbon network infrastructures for cost-effective carbon management in Europe, managing spatial mismatches between carbon capture (of fossil or biogenic origin in Europe's industrial centres), carbon utilisation (for synthetic fuels and chemical feedstocks), and sequestration (where the geology permits it).