# Online Resource Allocation and Its Applications

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# Outline

1 Introduction

2 Online Resource Allocation with Multidimensional Substitutions

3 Risk-Aware Multi-Armed Bandit

# Section 1 Introduction

#### Motivation

Questions about Germany's Climate Action Plan 2050

(BMUB 2015/16)

1. How

# Perspective

Disciplines for investigating energy topics

#### **Physics**

Theoretical feasibility (Natural laws)

# Engineering

Technical feasibility (Technologies)

#### **Economy**

Economic feasibility (Funding)

#### Society

Social feasibility (Decision space)

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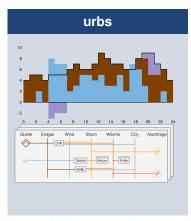
**Techno-economic modelling** 

How much energy? For how much?

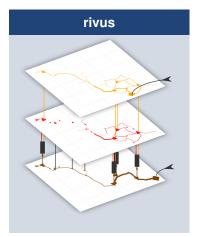
#### Section 2

# Online Resource Allocation with Multidimensional Substitutions

### Model overview



https://github.com/tum-ens/urbs



https://github.com/tum-ens/rivus

# Section 3 Risk-Aware Multi-Armed Bandit