

Governance strategies for a ZE inland shipping sector in the Netherlands by 2050

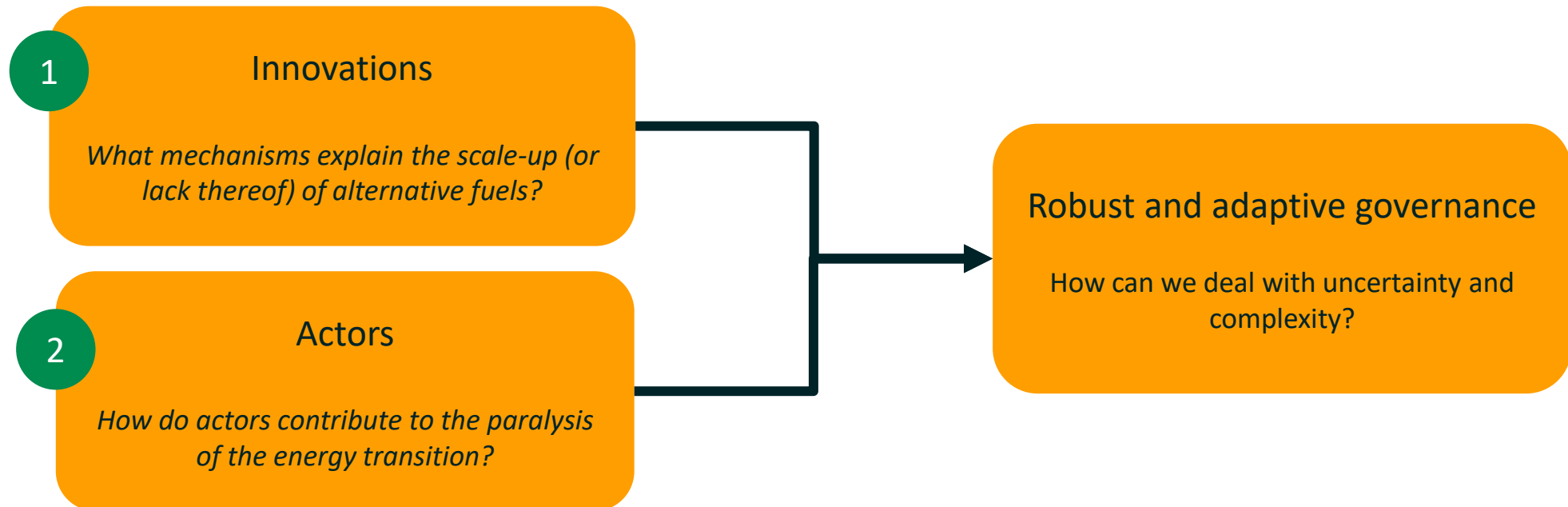
- Work Package of PATH2ZERO: 1 (T1.3: Robust Policy and Action Perspectives Development), 2, 6
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- PhD Supervisors: Prof. Jurian Edelenbos, Dr. Ron van Duin, Dr. Wouter Spekkink
- Starting date: 20/03/2023

Theoretical approach and framework

Governance strategies are needed to facilitate the adoption of innovations and accelerate the energy transition of the sector

> the set of planned actions and instruments deployed by actors to achieve a certain aim

(Klijn & Koppenjan, 2016)



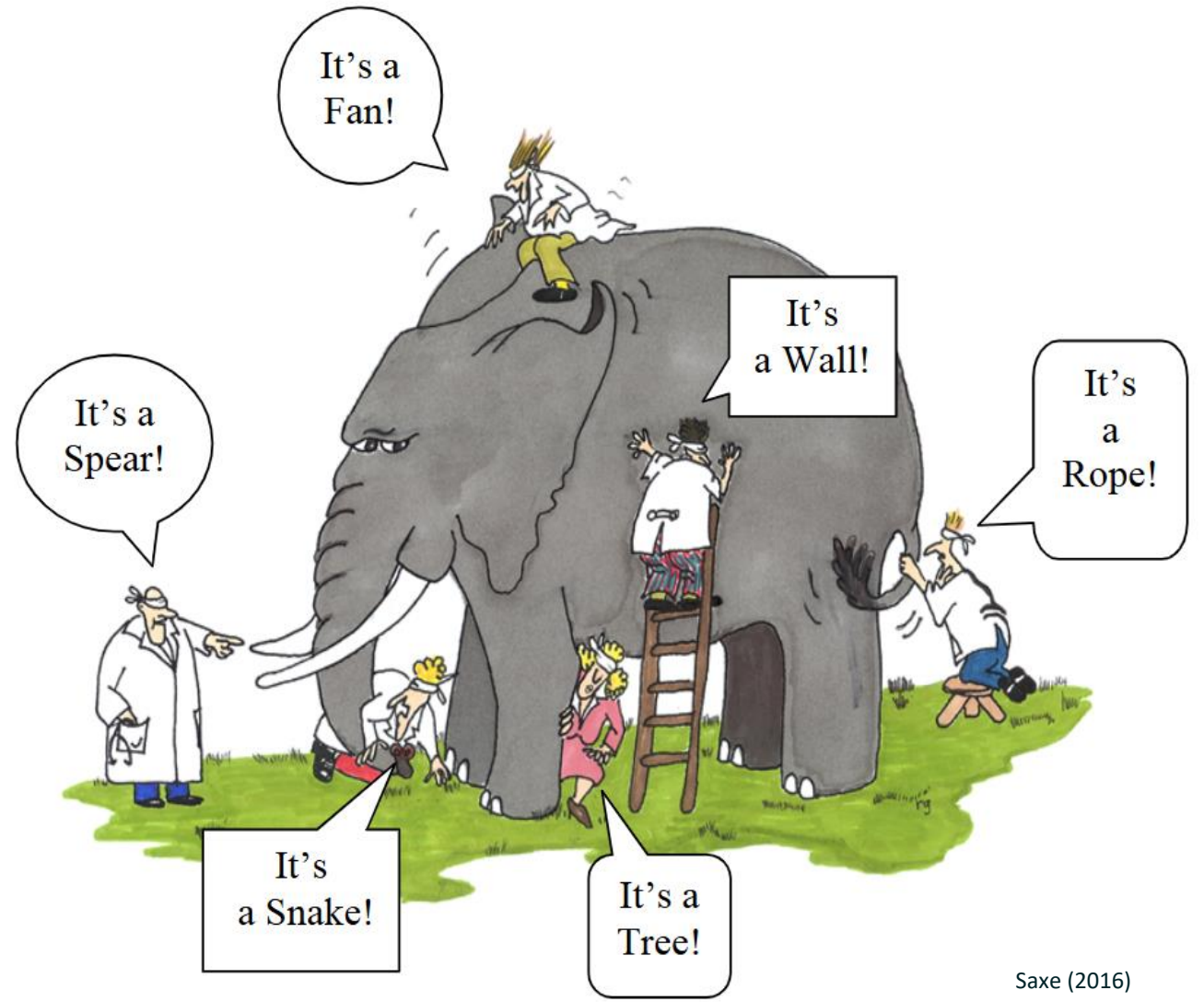
1 What mechanisms explain the scale-up (or lack thereof) of alternative fuels?

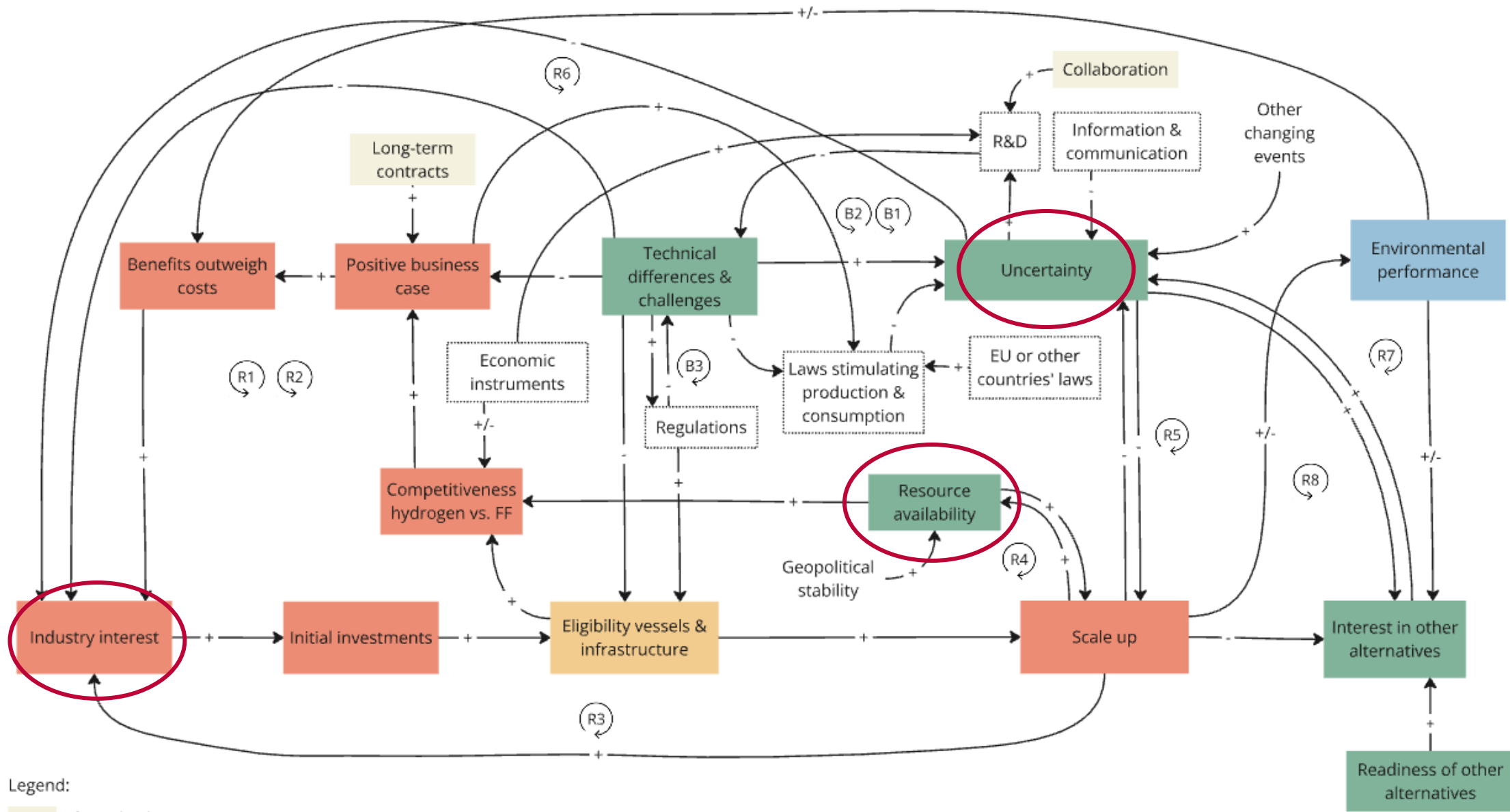
APPROACH

- Go beyond technical and economic factors
- Use a system dynamics approach
- Gain understanding of how these factors interact

METHODS

- Cases: hydrogen, LNG, biofuels
- Data from scientific papers, news articles and expert interviews





Legend:

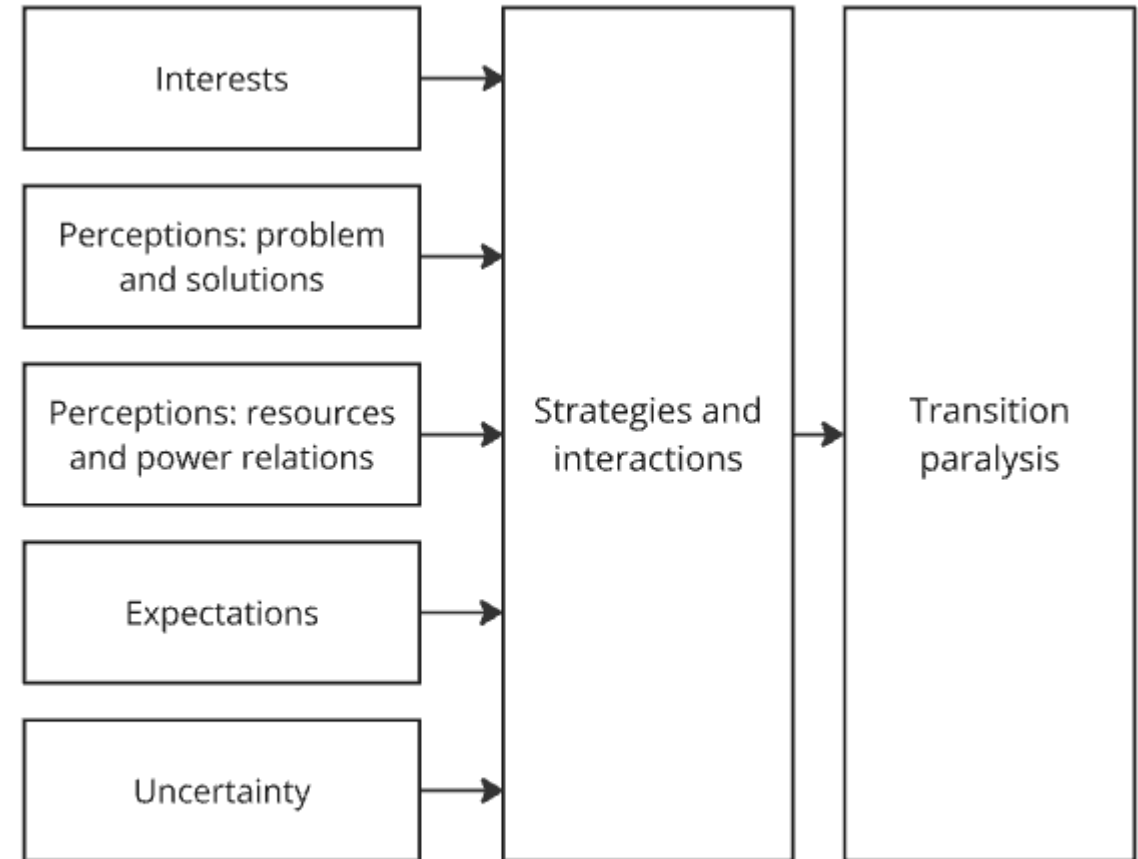
- Organization
- Market economy
- Infrastructure, vessels
- Traits of innovations
- Rationale
- Instruments
- (R) Reinforcing loop
- (B) Balancing loop

Coma-Cros, N., Spekkink, W., van Duin, R., Edelenbos, J. (2024). *Dynamics of sustainable transport innovation: A case study of biofuels, hydrogen and LNG in the Dutch inland shipping sector*. Manuscript submitted for publication.

2 How do actors' interests, perceptions, expectations and uncertainties contribute to the paralysis of the energy transition?

DEPARTURE

- 'Industry interest' & 'uncertainty'
- Transition paralysis
- System-wide changes are deeply linked to the strategic choices of actors



Interests

- Different actors with different (conflicting) interests
- Actors make decision in favour of their interests
- Actors paralyse the transition when it threatens their assets, competencies and business models, favouring less-radical innovations

(Lindberg et al., 2019; Marcon-Nora et al., 2023)





Problems & solutions

- The paralysis is a result of...
 - Financial incentives
 - Lack of guidance
 - No clear dominant alternative
 - Lack of infrastructure
- The most appropriate solution(s) are...
 - Hydrogen, biofuels, ammonia
 - Subsidies, strict regulations, R&D

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Power relations

- Types of resources
 - Financial resources
 - Knowledge
 - Materials: resources, infrastructure
 - Competences: authority & legitimacy
- Resource dependencies
 - What resources do I need?
 - Who has the resources I need?
 - How important is this resource?
 - Can I substitute this resource?





Expectations and uncertainties

Expectation: statement about the future based on assumptions about how likely it is supposed to be.

(Friedrich & Hendriks, 2024; Budde & Konrad, 2019)

Uncertainty: lack of knowledge or inherent variability of future events

(Rescher, 1995; Dewulf & Biesbroek, 2018)

- The problem & the solution
- Other actors
- The process

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Methods

- Trace the strategies of actors since they signed the Green Deal in 2019
 - Central Government
 - Authorities
 - Trade Associations
 - Ports
 - Shippers
 - Banks
 - Knowledge institutions
- Conduct interviews
- Triangulate the information with documents / news



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Green Deal on Maritime and Inland Shipping and Ports

The parties:

1. The Minister of Infrastructure and Water Management, Ms C. van Nieuwenhuizen-Wijbenga, hereafter referred to as: I&W;
2. The Minister of Economic Affairs and Climate Policy, Mr Eric Wiebes, hereafter referred to as: EZK;
3. The State Secretary for Defence, Ms B. Visser, hereafter referred to as: Defence;

Parties 1 to 3, each acting in their capacity as an administrative authority and representing the State of the Netherlands, are hereafter jointly referred to as: **Central Government**.

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Thank you!

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