Pods4Rail
Final Even

Is the “Pods4Rail” scenario realistic?

Vienna, 24. June 2026

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Key Outcomes - Stakeholder and economic analysis

Preliminary points:

- *A Pods System is in its essence deeply versatile*
  - *Many different application scenarios possible*
- *A Pods System is in its essence deeply innovative*
- *Evaluation requires „hypothetical“ applications*
  - *This provides contextuality*
  - *Close to realistic assumptions*
- *Innovativeness and Versatility mean the hypotheticals are poor representations of possible futures of the Pods System*
- *Prediction of costs is more realistic than of use*

Choices made:

- *Use existing Operational Application Scenarios to align with project*
  - ⊕ *Alignment and data in project*
  - ⊖ *Limited coverage of possibilities*
- *Work from cost assessment to required use, rather than estimate demand*
  - ⊕ *No unreliable demand estimate*
- *Estimates and stakeholder analysis with transport innovation analogies*
  - ⊹ *With limited data analysis possible*
  - ⊖ *Selection of possible analogues key*

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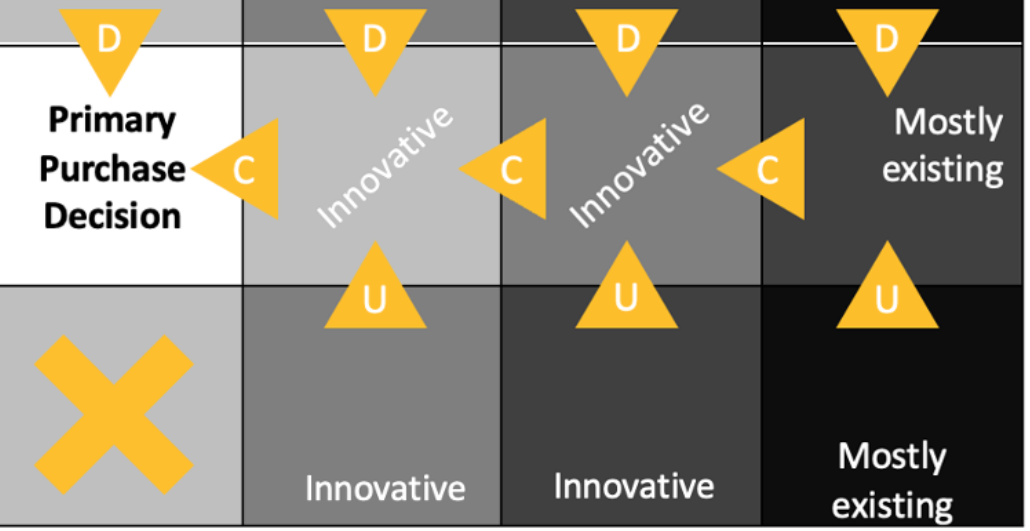
Primary Purchase Decision

	Cost items	Transport Service	Transport Unit	Carrier Unit	Infrastructure
Development (and Production)	Staff Materials Energy Area Compute	Mostly existing	Core Innovation	Core innovation	Mostly existing
Operation	Staff Materials Energy Area Compute	**Primary Purchase Decision**	Innovative	Innovative	Mostly existing
Maintenance	Staff Materials Energy Area Compute		Innovative	Innovative	Mostly existing



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Landscapes of actors

Why landscapes?

- The landscapes represent separate interaction environment is which those developing, constructing and operating a Pods System will have to engage with different stakeholders for different reasons.
- Governance of these landscapes is all very different.
- Stakeholders might show up in varies landscapes in various roles.
- Understanding the landscapes is key of progress in Pods System development.
- Also, the wide range of applications male these landscapes more divers

Which landscapes?

- Transport landscape
  - Who will be transported
- Regulation landscape
  - Who will certify
- Competition landscape
  - Who will compete against
- Innovation landscape
  - Who will fund investment
- Population landscape
  - Who will accept and support
- Governmental landscape
  - Who will fund operation

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Analogues

	Transport landscape	Regulation landscape	Competition landscape	Innovation landscape	Population landscape	Government landscape
Actors*	Customers	Regulators	Operators	Investors	Population	Government
Pods4Rail OAS 1 Passenger Regional Transport**	Mostly private car-oriented environments, with some alternatives in public transport	European regulation frameworks with national implementations, layered and complex but could support system standardization	Self-driving car technology could offer similar solution on road, missing the existing rail infrastructure advantage	European implementations could be helped by standardisation and hindered by limited investment climate in transport	Highly dependent on particular location and value to population, including dependency on the use of existing infrastructure	Regional support is likely needed for operation, national support for infrastructure, both likely related to carbon emissions and accessibility
Pods4Rail OAS 2 Freight Regional Transport**	Classic truck transport likely the most relevant, with some rail transport also competing on the longer distances	European regulation frameworks with national implementations, layered and complex but could support system standardization	Self-driving truck technology could offer similar solution on road, missing the existing rail infrastructure advantage	European implementations could be helped by standardisation and hindered by limited investment climate in transport	Highly dependent on particular location and value to population, including dependency on the use of existing infrastructure	Regional and national support is likely needed for (transfer) infrastructure, both likely related to carbon emissions and accessibility
			system			
					expectations high	accessibility

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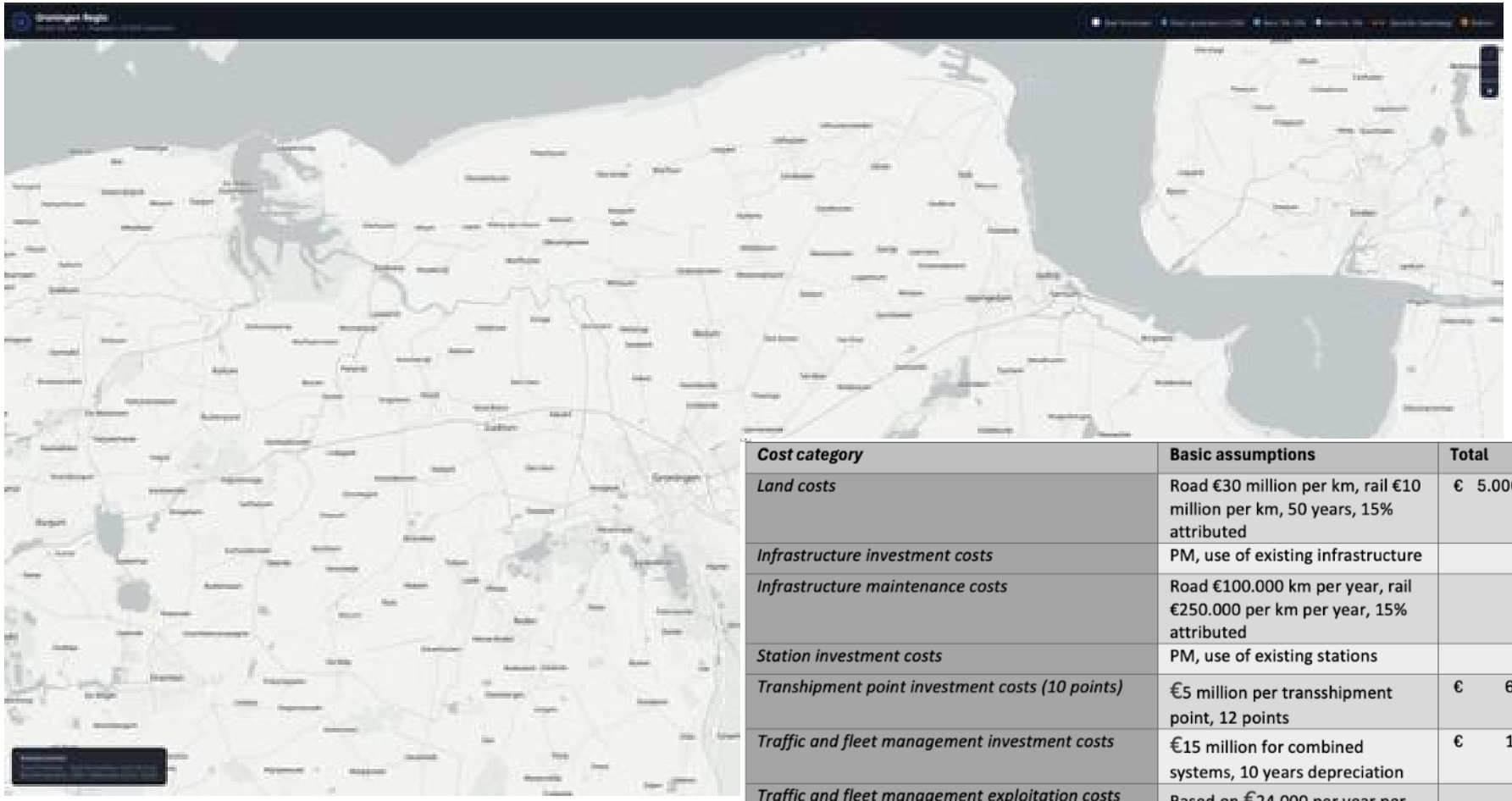

Cost category	Basic assumptions	Total	Per year	Attributed
Land costs	Road €30 million per km, rail €10 million per km, 50 years, 15% attributed	€ 5.000,0	€ 100,0	€ 15,0
Infrastructure investment costs	PM, use of existing infrastructure			
Infrastructure maintenance costs	Road €100.000 km per year, rail €250.000 per km per year, 15% attributed		€ 27,5	€ 4,1
Station investment costs	PM, use of existing stations			PM
Transhipment point investment costs (10 points)	€5 million per transshipment point, 12 points	€ 60,0	€ 1,2	€ 1,2
Traffic and fleet management investment costs	€15 million for combined systems, 10 years depreciation	€ 15,0	€ 1,5	€ 1,5
Traffic and fleet management exploitation costs	Based on €24.000 per year per pod		€ 48,0	€ 48,0
Pod investment	Based on €250.000 per pod, 15 years depreciation	€ 500,0	€ 33,3	€ 33,3
Equipment maintenance	15% of the purchase costs	€ 75,0	€ 75,0	€ 75,0
Exploitation costs	Energy, labour, insurance: 20.000 Euro/year per pod		€ 40,0	€ 40,0
Total annual costs OAS 1				€ 218,2

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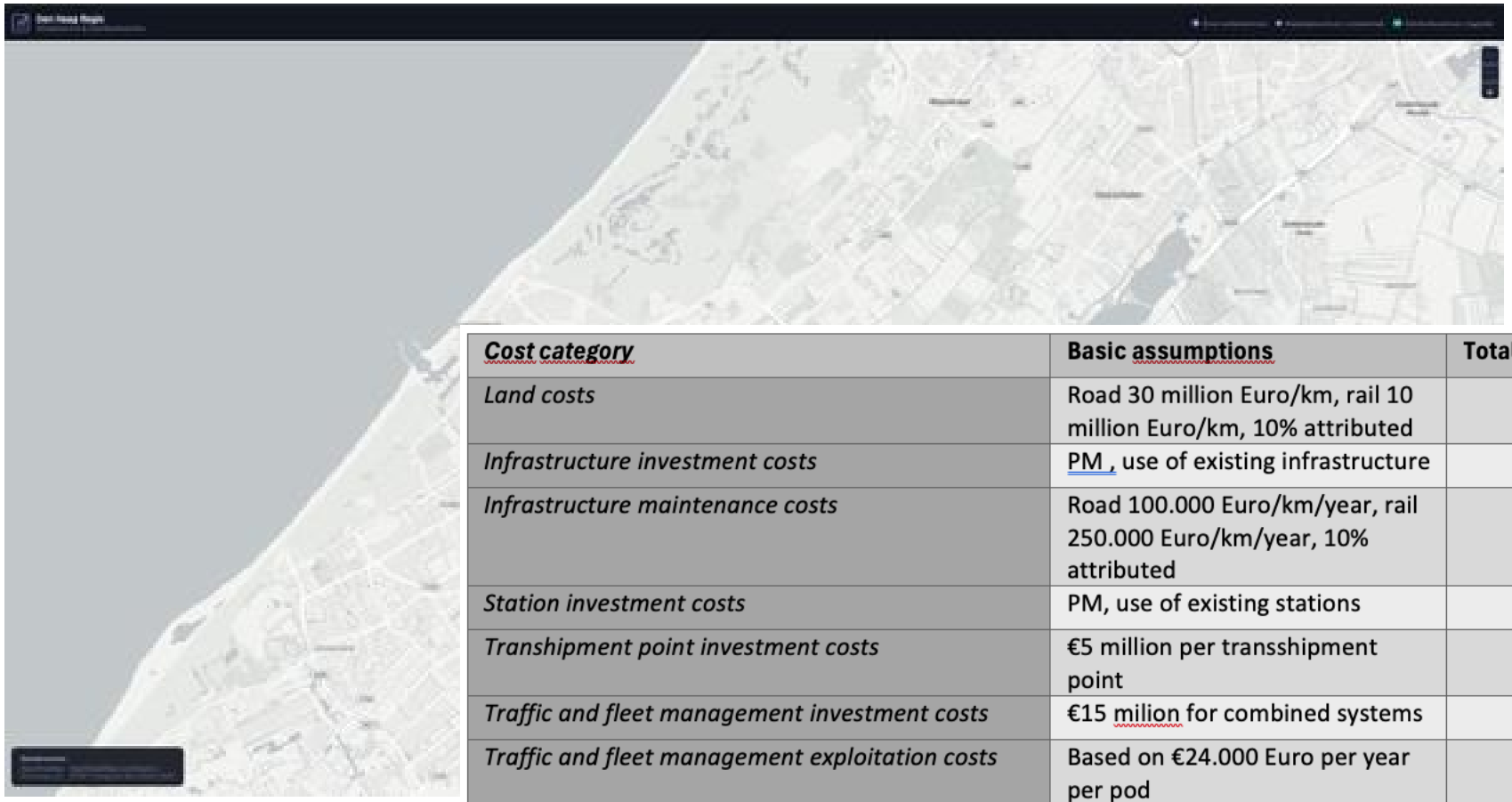

Cost category	Basic assumptions	Total	Per year	Attributed
Land costs	Road 30 million Euro/km, rail 10 million Euro/km, 10% attributed	€ 1.800	€ 36	€ 3,60
Infrastructure investment costs	PM , use of existing infrastructure			
Infrastructure maintenance costs	Road 100.000 Euro/km/year, rail 250.000 Euro/km/year, 10% attributed		€ 19	€ 1,90
Station investment costs	PM, use of existing stations			PM
Transhipment point investment costs	€5 million per transshipment point	€ 50,00	€ 1,00	€ 1,00
Traffic and fleet management investment costs	€15 milion for combined systems	€ 15,00	€ 1,50	€ 1,50
Traffic and fleet management exploitation costs	Based on €24.000 Euro per year per pod		€ 21,60	€ 21,60
Pod investment	Based on €250.000 per pod	€ 225,00	€ 15,00	€ 15,00
Equipment maintenance	15% of the purchase costs	€ 33,80	€ 33,80	€ 33,80
Exploitation costs	Energy, labour, insurance: €20.000 Euro per year per pod		€ 18,00	€ 18,00
Total annual costs OAS 2				**€ 96,50**

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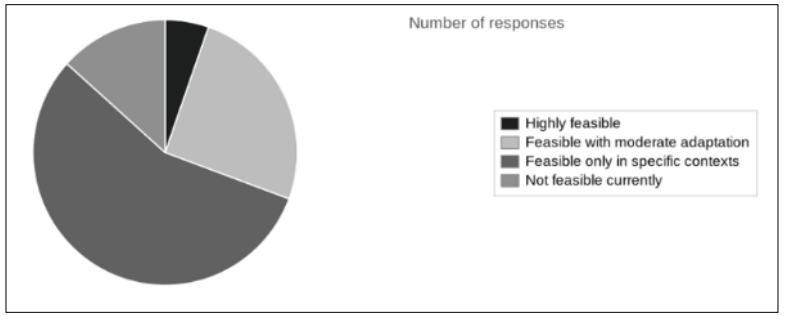
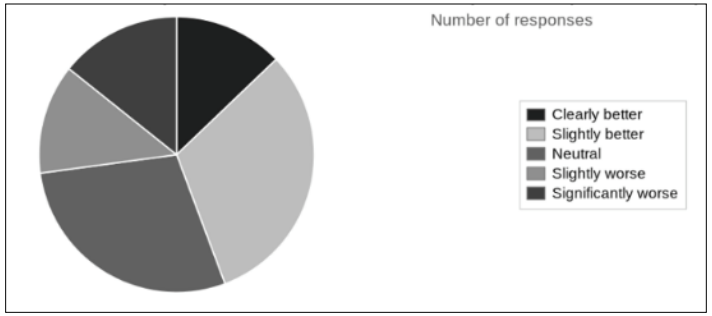
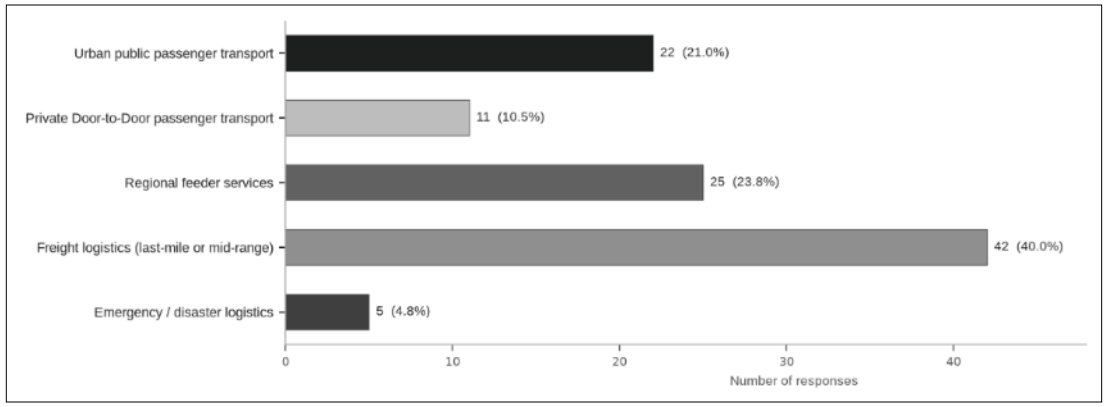
Stakeholder survey

		Answers	Ratio
Railway operator		10	14.29 %
Infrastructure manager		4	5.71 %
Logistics provider		1	1.43 %
Vehicle manufacturer		10	14.29 %
Passenger transport operator		2	2.86 %
Research or technology organisation		41	58.57 %
Public authority / Policymaker		8	11.43 %
No Answer		1	1.43 %







		Answers	Ratio
Coupling/Interface technology		18	25.71 %
Energy management (battery, HVAC, charging)		11	15.71 %
Communication and control (MMS integration)		18	25.71 %
Safe handling / transfer process		34	48.57 %
Safety and certification		37	52.86 %
No Answer		3	4.29 %

Thank You for Your Attention!

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LEARN MORE ABOUT THE PROJECT

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