

# German Regional Railway Transport after 2031

How can Regional Railway be Funded at Federal and State Level?



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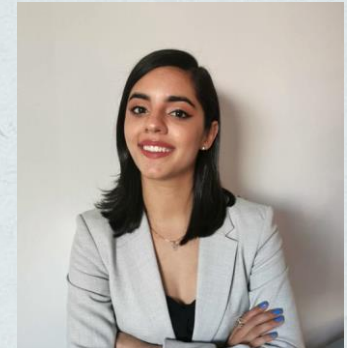
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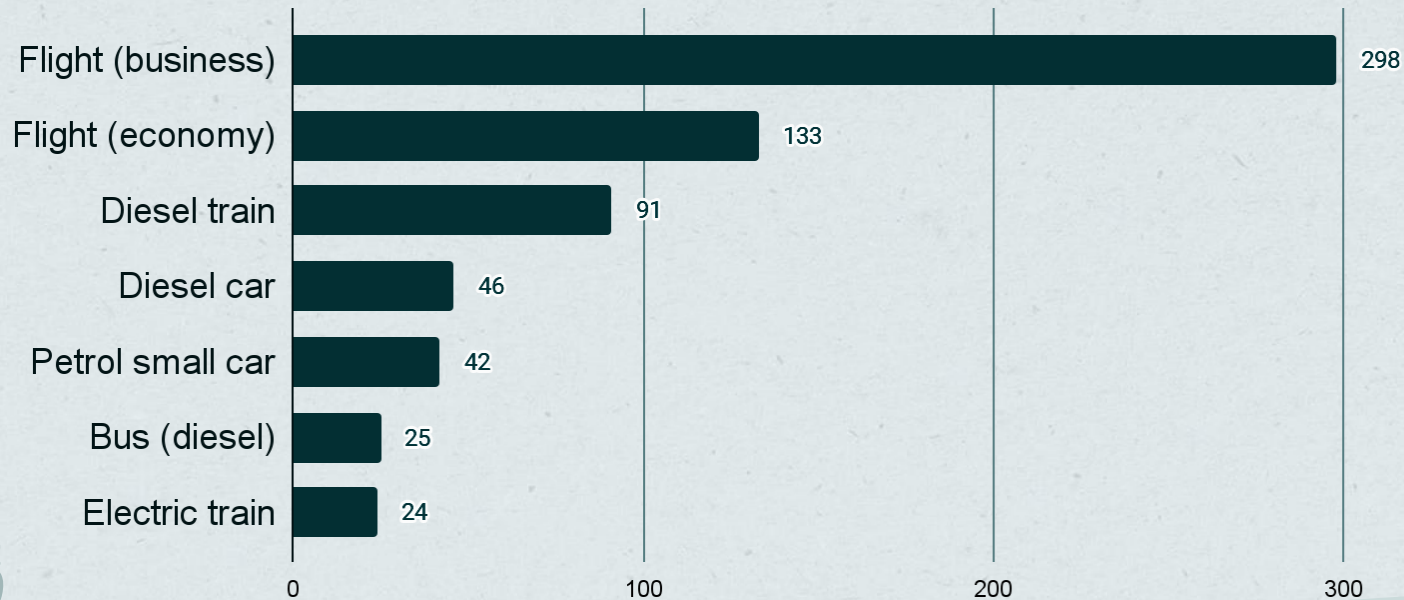


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# Motivation

## Summary of CO<sub>2</sub> emission of transport modes [g/pkm]



Source: Travel & climate (n.d.)

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- Future policy and financing

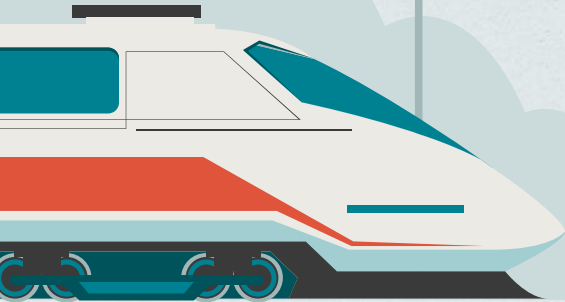
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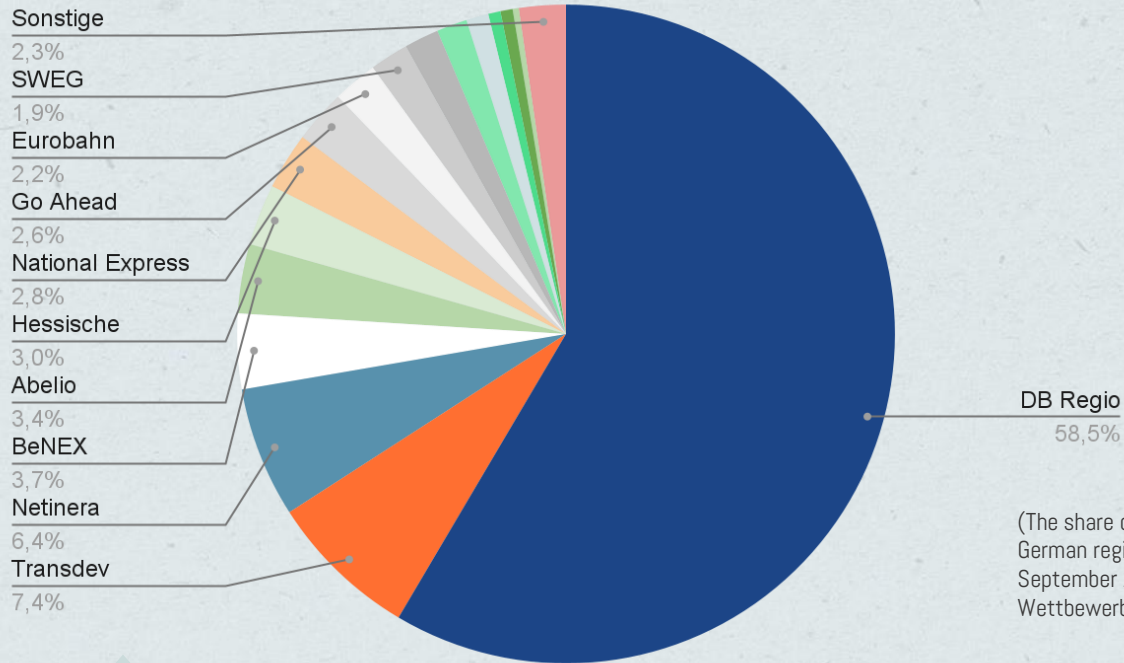
# 01

## How Does Germany Finance its Regional Railway?

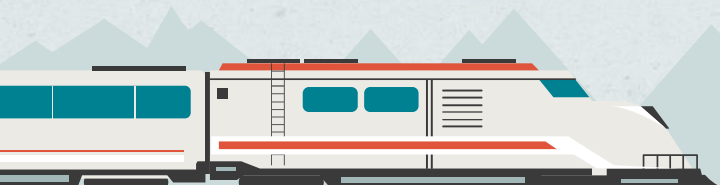
- Players in transport sector
- Financial streams in regional railway sector



# Players in Regional Railway Transport



(The share of DB Regio and competitors in German regional passenger rail in September 2023 (km of track), 8th Wettbewerber-Report Eisenbahnen)



# Government Aids for Regional Railways

## EU Packages

Railway packages are introduced for further market liberalisation (Dehousse & Mariscola, 2015).

## Changes in rail regulation

One example is the Regionalisation Act. (Bundesministerium für Digitales und Verkehr, 2022)

## Direct Contract Awarding

Direct contracts are awarded in certain exceptional cases (Wettbewerbsfahrplan, 2020).



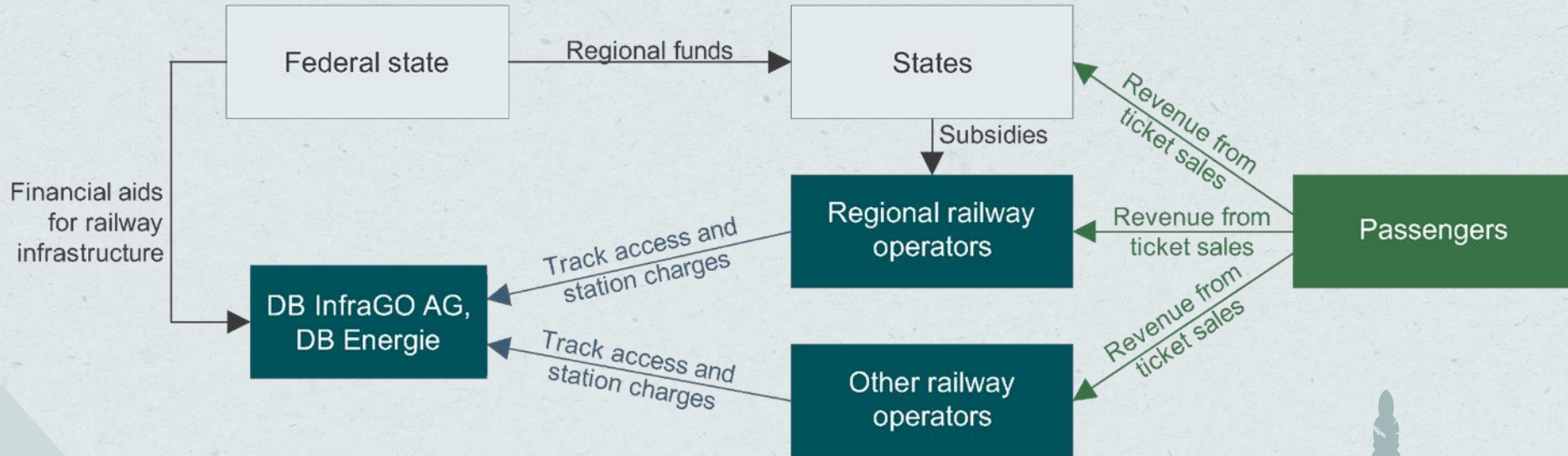
# Other player comparison

<b>Player</b>	<b>Principle of Autonomy</b>	<b>Financial Subsidies</b>	<b>Non- Financial Aids</b>
<b>Long - Distance Trains</b>	Yes	No	Yes
<b>Freight operators</b>	Yes	No	Yes
<b>Open-Access Operators</b>	Yes	No	No
<b>Passenger Regional Railways</b>	No	Yes	Yes

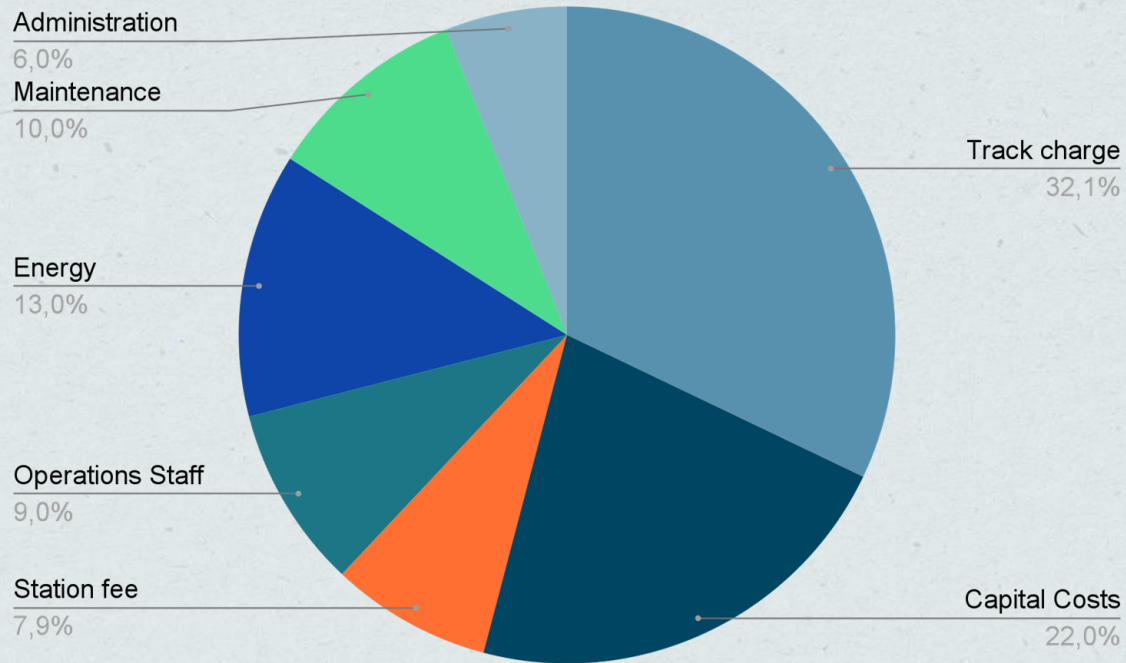
Sources: Forschungsinformationssystem, 2021; Neuhetzki, 2023; CBU, 2023; Grand Central by Arriva, n.d.; Burroughs, 2019; Schwietering & Wüpper, 2021



# High-level summary of financial streams in regional railway sector



# Costs per train kilometer



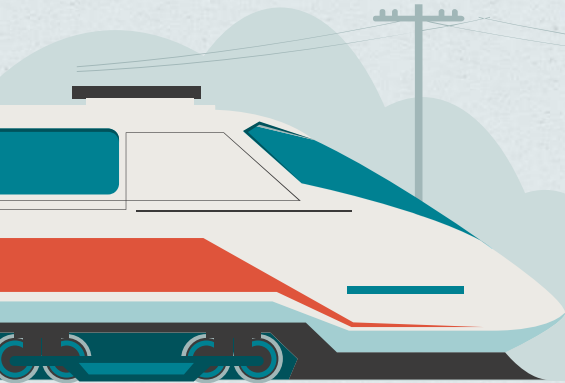
Source: Landesnahverkehrsgesellschaft Niedersachsen (n. d.)



## 02

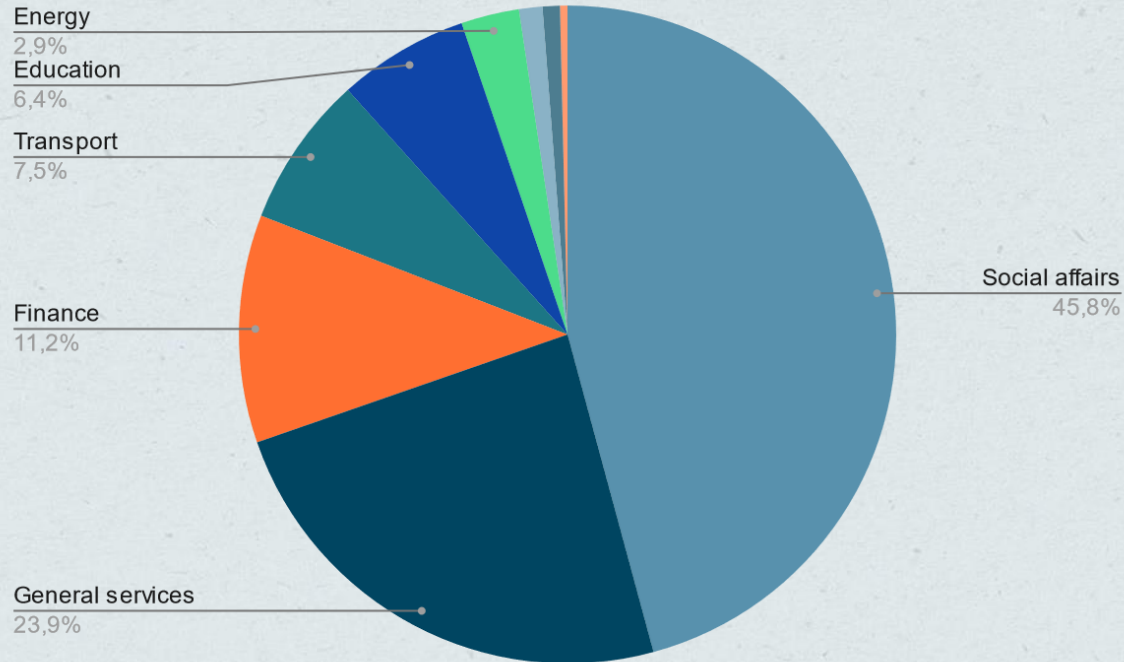
### ***How will Germany Finance its Regional Railway After 2031?***

- Government budgets
- Ticketing structure
- Infrastructure works
- Operating cost developments
- Future policy and financing



# Federal budget 2024

(Bundeshaushalt)



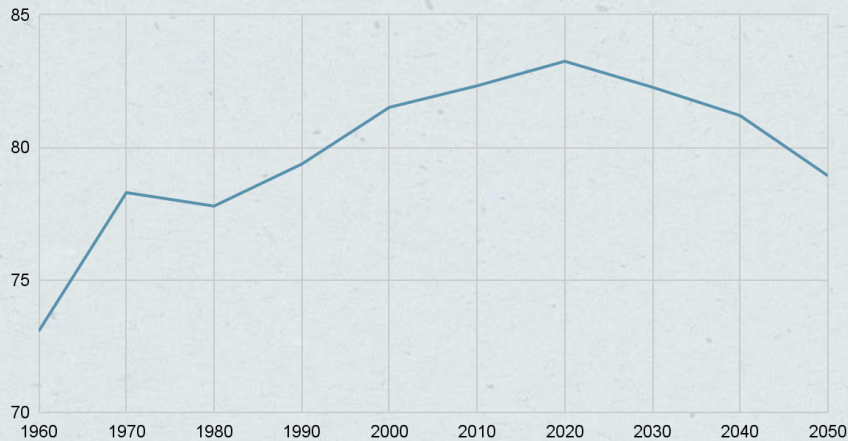
# Federal budget forecast

Year	2023	2024	2025	2026	2027
<b>Expenditures</b>	476.3	445.7	451.8	460.3	467.2
<b>Change to previous year (in %)</b>	-0.9	-6.4	1.4	1.9	1.5
<b>Regional funds (in million euro)</b>	463.7	472.05	480.54	479.19	498
<b>Inflation forecast (in %)</b>	5.75	2.9	2.23	2.0	-

Sources: Bundesministerium der Finanzen (n.d.), International Monetary Fund (2024), German Bundesbank (2023), European Central Bank (2024), OECD (2024), Verband deutscher Verkehrsunternehmen (n.d.-c)

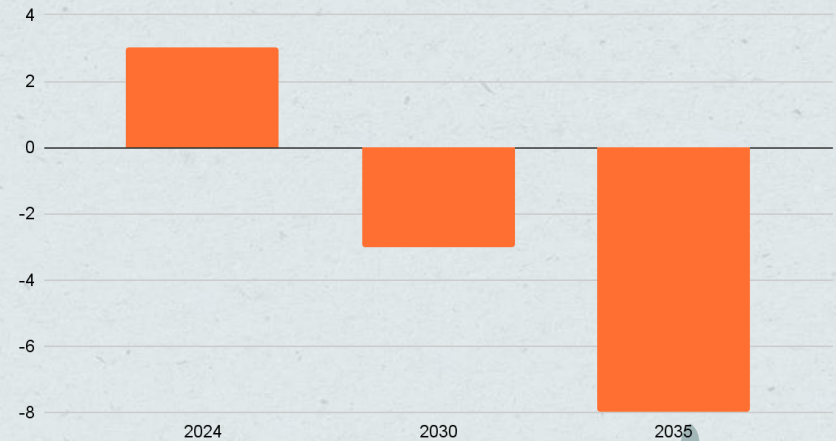
# Potential implications for 2031: Demographics and Taxation

Population of Germany (In millions)



Sources: Population Pyramid Network, 2024

Income tax revenue (In billion EUR)



Sources: Benozka & Hentze, 2017



# Potential implications for 2031: Regionalization Act

Planning horizon of around 15 years depending on the region.

5 amendments in the last 4 years.

5.2 billion euros in regionalization funds were increased (Bundesministerium für Digitales und Verkehr, 2022).

Then in 2031...

- Increased competition
- Revenue changes
- Cost Management



# Potential implications for 2031: Expansion Projects

What other financial implications could be there for the federal budget?

- **VRR Zielnetz 2040:** The goal is to make the connection times shorter, (VRR, 2023).
- **ÖPNV-Strategie 2030 für Freistaat Bayern:** The goal is to expand the train and bus network (BSWV, 2023).



# Likely trends for the ticketing structure

## Widely used ticketing structures: (Schmöcker et al., 2016)

- Flat fare
- Distance-based
- Zonal

## Integration or differentiation? (Schmöcker et al., 2016)

- Trade-off between simplifying the fare structure and revenue maximization
- Economic perspective: pricing is efficient, if everybody pays a price which is proportional to the external costs they are imposing - price differentiation
- Social-welfare perspective: simpler fare structures are favorable

# Likely trends for the ticketing structure

## Deutschlandticket: a cheap monthly pass (Loder et al., 2024)

- Reduces the average cost for a season ticket (but with upgrades user costs can even increase)
- Simplifies the complex structure of transport authorities and fare zones
- Provides more travel opportunities
- Generates induced demand besides modal shift

# Likely trends for the ticketing structure

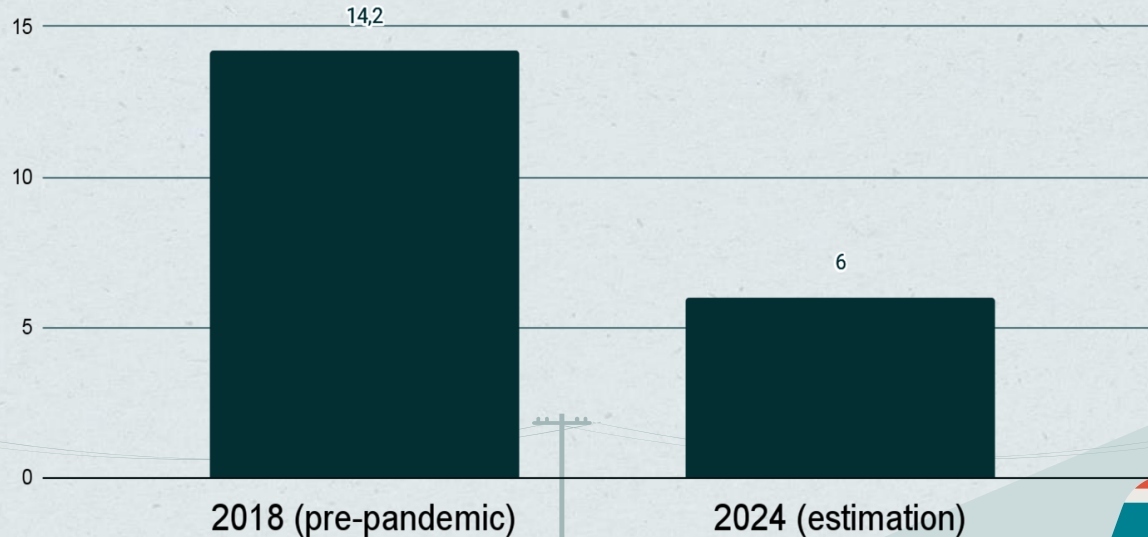
## Deutschlandticket: a cheap monthly pass (Loder et al., 2024)

- Forces public transport companies to agree on a new approach for revenue sharing
- Uncertainty: Deutschlandticket ownership, further subsidized tickets and their compensation

# Likely trends for the ticketing structure

Deutschlandticket: a cheap monthly pass (Loder et al., 2024)

Annual revenue of local and regional public transport companies  
(billion euro)



20



# Likely trends for infrastructure works

- Used by long-distance passenger, regional passenger, and freight transport: difficult to predict costs and benefits for regional transport only
- Sometimes, the reality is different from the plans (see: City-Tunnel in Leipzig)

## Planned infrastructure renovations

(DB Netz AG, 2023)

Line	Year
Frankfurt - Mannheim	2024
Hamburg - Berlin	2025
Lübeck - Hamburg	2027
Bremerhaven - Bremen	2027
Hagen - Unna - Hamm	2028
Köln - Bonn - Koblenz	2028
Weddel - Magdeburg	2030

# Likely trends for operation costs

## Energy prices:

- Increase in electricity prices in Europe over the last decades (Statistics explained, n.d.-a)
- Based on the sources: 10% decrease in energy prices until 2031 (Zhou et al., 2023; Statista, 2023; Cornwall Insight, 2023)

## Personnel costs:

- Regional and local railways: increasing personnel cost index (Bundesverband SchienenNahverkehr, 2023)
- Based on the sources: annual increase of approximately 5% in labor costs until 2031

# Public Transport: Future Policy and Financing Trends (2025-2035)

## Legislative Trends

## Outlook

- Continued focus on sustainable transport with increased funding for electrification, infrastructure expansion, and innovative mobility solutions.
- Integration of digitalization to enhance public transport efficiency and user experience.
- Regulations anticipated to facilitate public-private partnerships
- Possible continuation/enhancement of subsidies for public transport,
- Commitment to sustainable and efficient public transport = key priority



# Politics and Law in Public Transport Funding

- Politics determine public transport funding and project scale.
- The Paris Agreement & the European Green Deal motivate sustainable transport investment.
- Legal frameworks support sustainable transport development.
- Impact: Political and legal mandates (e.g. Paris Agreement and European Green Deal) guide investment towards sustainable, efficient public transport.

Sources: United Nations Framework Convention on Climate Change (n.d.); European Commission (n.d. - a); European Commission (n.d. - d); European Commission (n.d. - e).





# Financing German Rail: Legal Obligations

## Responsibilities

- Federal States: Oversee local rail passenger transport, determining frequencies and service standards (DB Regio, n.d.).
- Municipalities (cities and districts): Manage public road-based local transport.

## Federal Support

- The Municipal Transport Financing Act enables federal co-financing for rail infrastructure projects (Bundesministerium für Digitales und Verkehr, 2023).
- Focuses on infrastructure upgrades.

## Funded Projects

- Federal financial aid for municipalities' rail-bound public transport investments (DB Regio, n.d.).
- Funding for new tram, light rail, or subway construction and support for rail track electrification/reactivation.

# 03

## *Future scenarios*



# German Regional Railways: Future Outlook

Scenarios:

1. Enhanced Federal and State Investment in Green Mobility
2. Public-Private Partnerships (PPPs) Drive Infrastructure Development
3. Digitalization and Smart Mobility Integration
4. Deutschlandticket with higher price
5. Pre-Deutschlandticket ticketing structure with price caps
6. Best fare calculation

**Overall Trend:** Strong likelihood of increased investment in green mobility, aligning with EU and German sustainability goals.



# Scenario 1: Enhanced Federal and State Investment in Green Mobility

**Assumptions:** Boosting Sustainable Transport and Green Deal Expansion

**Impacts:**

- Funding boosts for rail infrastructure
- Electrification projects and rail network expansion.
- Connectivity between urban and rural areas.

**Likelihood:** High



## **Scenario 2:** Public-Private Partnerships (PPPs) Drive Infrastructure Development

**Assumptions:** Innovative Financing and Private Investment in Public Projects

**Impacts:**

- Infrastructure development/modernization through private capital.
- Improved efficiency and service quality due to private sector involvement.

**Likelihood:** Moderate because of growing recognition of the need for substantial investment in infrastructure (The Federal Government, n.d.).



## Scenario 3: Digitalization and Smart Mobility Integration

**Assumptions:** Technological advancements and policy in mobility integration

**Impacts:**

- Enhanced passenger experience.
- Improved operational efficiency and capacity management.
- Cybersecurity and data privacy challenges.

**Likelihood:** Moderate to high because of the increasing role of technology (Federal Ministry for Economic Affairs and Energy, n.d.).



## Scenarios 4-6: Ticketing structure

### Summary of expected trends:

- Increasing costs of service provision (energy, labor costs)
- Regional funds and subsidies are not expected to get higher
- Reducing expenditures by lowering service quality is not an option (climate goals, etc.)

**A ticket-sale revenue increase is needed!**



## Scenarios 4-6: Ticketing structure

### Deutschlandticket

- Higher price
- Results in less users - net outcome ambiguous
- Conflict with the initial goals - PT accessible for everyone

### Pre-Deutschlandticket pricing with price caps

- Enables revenue increase
- Price caps prevent overspending, increase the acceptance of complexity
- Caps adjusted to incomes: accessibility to everyone

### Best fare calculation (UITP, 2020)

- Passengers always pay the most favourable price for their journey
- Can be combined with fare capping
- Costly and difficult to implement





# Conclusion

**Policy Predictions:** Commitment to lowering mobility's carbon footprint with green targets and funding.

**Law Predictions:** Legislative support for sustainable and digital transport.

**Ticketing Predictions:** Deutschlandticket is financially not sustainable.

**Financing:** Tighter budget, increasing provision costs.

**Overall:** Sustainability, digitalization, and private sector roles shape regional railways.



***Thank you for your attention!***



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