

**UPDATED REVIEW OF CHARGING PRACTICES
FOR THE MINIMUM ACCESS PACKAGE IN EUROPE
(Annex)**

November 2020
(First version: October 2012)

Introductory remarks

This review on charging practices for the minimum access package covers the following countries for the which the RB is a member of IRG-Rail: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and The Netherlands.

The document provides an overview of charging practices as they stand at the time of writing. IRG-Rail intends to review it as further information becomes available.

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4. Annex: Summary of charging systems by IRG-Rail members

4.1. Austria

The charging system for 2018¹ will also contain a Basic Charge 1 and Basic Charge 2. Both cover direct cost in total and Basic Charge 1 also includes the mark-ups:

Charge	Unit	Differentiation	Cost covered
Basic Charge 1	€/train-km	Route category (5) Market segmentation (traffic) (3)	Marginal cost and part of fixed costs
Basic Charge 2	€/gross-ton km	No market segmentation	Cost for repair and renewal
Incentives and Mark-ups	€/train-km	Incentive for capacity optimisation (1) Corridor-specific Freight Traffic Incentive (2) Engine classification (3) Congestion charge (1)	
Performance regime	€/min delay	To reduce disturbance in the rail network, a charge will be levied for each additional minute of delay on selected trains if the delays are attributable to causes which can be influenced. Unit is by delay in minute (capped) attributable to IM or RU.	

The charging system for 2018 will also contain a Basic Charge 1 and Basic Charge 2. Both cover direct cost in total and Basic Charge 1 also includes the mark-ups:

Charge	Unit	Differentiation	Cost covered
Basic Charge 1	€/train-km	Market segmentation (traffic) (6)	Direct costs plus mark-up
Basic Charge 2	€/gross-ton km	Market segmentation (traffic) (6)	
Incentives and Mark-ups	€/train-km	Engine classification (3) Congestion charge (1)	
Performance regime	€/min delay	Same as 2017	

¹ The approval of the mark-ups was revoked by the Administrative Court and the investigation was referred back to the regulatory body for a new trial.

4.2. Belgium

In Belgium, the implementing act 2015/909 has not yet been implemented. The target of the IM is to implement a new charging system as per 2019. The IM has drafted a new charging system compliant with the implementing act 2015/909. This draft is under review by the office of the Ministry of Mobility and Transport and will be submitted to the RB.

The charges related to the minimum access package are split in the following categories:

- Charge path line "Your move" in order to get a specific path on a line.
- Shunting charge "Your shunt".
- Charge for use of service facilities
- Administrative costs

The IM propose other services beyond the scope of the minimum access package which are the following:

- Traction provision
- Pre-heating service
- Service for exceptional transport and transport of dangerous goods.
- Services beyond opening hours.
- Access to the telecom network
- Provision of additional information

For the provision of those services specific charges are levied.

Charge	Unit	Differentiation	Cost covered
Basic Charge 1 Your Move	€/train.km	There are two kinds of charges: The charges related to the path-line and the charge related to the shunting-line. For this latter, there is differentiation between passengers trains and freight trains	Marginal cost and part of fixed costs
Basic Charge 2 Your Shunt	€/train.km		Marginal cost and part of fixed costs
Incentives and Mark-ups	n/a	n/a	n/a
Performance regime	Regime came into force as per 01/01/2017 but turned down in 2018.		

4.3. Bulgaria

Quick summary of the charging system (it can for instance describe each individual charge, their charging units, the services they are applied to and/or their legal basis).

Answer: The infrastructure charge is a variable charge which depends on the actual kilometers travelled on the railway infrastructure and depends on the gross weight of the train and with which the railway infrastructure manager shall be reimbursed for the costs incurred directly as a result of operation of the train service.

The charge for operating on the railway infrastructure does not depend on the type of the trains and is the same for all categories of railway lines of the railway infrastructure. Preferential charges for combined transport with block trains and for carriage of freight cars by railway transport are provided for.

The rates are: 0.7902 BGN = 0.404 EUR per train-kilometer and 0.0025 BGN = 0.0013 EUR per gross tonne-kilometer; Charge for realized gross tonne-kilometers of combined transport with block-trains – 0.0023 BGN = 0.0012 EUR per gross tonne-kilometer, irrespective of the category and of the type of the railway line. Charge for the realized gross tonne-kilometers from the carriage of freight cars with block-trains – 0.0018 BGN = 0.0009 EUR per gross tonne-kilometer, irrespective of the category and of the type of the railway line. Charge for the realized train-kilometers from combined transport with block-trains – 0.7112 BGN = 0.2828 EUR per train-kilometer, irrespective of the category and of the type of the railway line. Charge for the realized train-kilometers from the carriage of freight cars with block-trains – 0,5531 BGN = 0.2828 EUR per train-kilometer irrespective of the category and of the type of the railway line.

<i>Charge</i>	<i>Charging Unit</i>	<i>Differentiation</i>	<i>Cost covered</i>
Charge for the realized train-kilometers	BGN/train-km	None Market segmentation; there are discounts for combined transport and for the carriage of freight cars with block-trains	the directly incurred costs

Charge for realized gross tonne-kilometers	BGN/gross tonne-km	None Market segmentation; there are discounts for combined transport and for the carriage of freight cars with block-trains	the directly incurred costs
Charge for the requested and unused capacity	BGN/train-km	None Market segmentation; there are discounts for combined transport and for the carriage of freight cars with block-trains	
Price for electricity distribution in the amount of 146.73 BGN/MWh/	BGN/MWh/	None Market segmentation	Full costs of the electricity distribution activity
Performance scheme	BGN/minute	1.40 BGN per minute delay for a freight train and 2.50 BGN per minute delay for a passenger train	

4.4. Croatia

In Croatia charges for minimum package of access services are based on the costs directly incurred as a result of operating the train service and they are applied on non-discriminatory terms to all rail companies. Fee for minimum package of access services is calculated through a formula published in the network statement by the IM. Based on the formula every railway undertakings can calculate the cost of using rail infrastructure.

Track access charges for the minimum access package are calculated considering:

- the number of train kilometres performed on certain line categories;
- type of power car;
- type of towing vehicle;
- weighting of the line category;
- coefficient of the power car category.

The calculation of charges for the minimum access package takes into account the part of the cost which is directly incurred as a result of operating train service, in particular the part of the cost of maintenance and renewal and rail traffic management.

The calculation of charges for the minimum access package does not include cost which are not directly incurred as a result of operating train service, in particular administration cost, financial cost and indirect cost.

Charges depend on train km and they are different on the basis of six different line categories and weight of trains.

Charge	Unit	Differentiation	Cost covered
Minimum Access			
Access	€/train.km	Differentiation between freight and passenger trains. Freight: train km change with weight category. Passengers: train km change with weight category. Line category (7) Main line (3) Regional line (4)	The costs directly incurred for running the railway service (for instance maintenance and renewal, rail traffic management).

4.5. Denmark

Charges for 2016 are levied as laid down in the Danish Railway Act n° 686 of 27 May 2015 § 21 point 1, a national statutory order from the Transport Ministry n° 1379 of 1 December 2015 on payment of use of the state owned rail network and on environmental subsidy to freight transport on railway and a national statutory order from Rail Net Denmark n° 1357 of 27 November 2015 on infrastructure charges for the state owned rail network. The charging scheme is based on direct costs.

In 2016, the IM (Banedanmark) introduced a charge based on direct costs and train.km. The charging system includes a uniform charge (in DKK/train.km) for both passenger and freight trains and a bridge charge.

The charge is calculated on the basis of the direct costs related to maintenance of the tracks for the period 2009-2020. For the period 2009-2013 the calculation is based on real costs and train-km. For the period 2014-2020 the costs and train-km are estimated.

At the moment the IM is not able to separate other expenses concerning the directly use of the tracks.

The IM has calculated the charge DKK 4,80 (0,64 Euro) each Train-km. (2015 price level). This charge is regulated yearly by an index based on the general level for prices and wages.

Charge	Unit	Differentiation	Cost covered
Charge	DKK/train.km	No market segmentation, but some kinds of transportation are free of charge	Direct costs
Incentives and Mark-ups	DKK/train.km	Incentives for capacity optimization No mark-up is levied	
Performance regime	DKK/min delay	To reduce disturbances on the rail network, a capacity charge is levied for delayed trains. The IM has to pay a charge to the railway company for delays attributable to him and under different circumstances.	

4.6. Estonia

Charge	Unit	Differentiation	Cost covered
Charge 1	Train-km	It depends on the passenger/cargo usage ratio. If the passenger train capacity is more than 75%, then it is charged both fixed and variable costs and the cargo trains only variable costs. If the passenger train volume is <75%, then cargo trains are charged fixed and variable costs and passenger trains only variable costs.	Fixed costs
Charge 2	Gross.tonne-km		Variable costs

4.7. Finland

The Finnish Transport Infrastructure Agency (FTIA), as the manager of the state-owned railway network, publishes Railway Network Statements, which describe, among other things, the services supplied to railway undertakings, pricing of these services, as well as the principles for determining the infrastructure charge. There is also a Performance scheme in use.

The basic infrastructure charge is collected for used services in the minimum access package, based on the infrastructure manager's directly incurred costs. The basic infrastructure charge is set using a cost model that calculates, to what extent one transport performance unit (one gross tonne-kilometre) increases the costs of railway infrastructure management. As methodologies, the FTIA uses mainly econometric cost modelling, but for the incremental cost of electrical drive it uses expert evaluation in the context of subtraction methodology pursuant to Article 3 of the Implementing Regulation.

The basic infrastructure charge is given for 3-year periods, the first of which is 1.1.2019 – 31.12. 2021. The IM may notify of changes in the prices of the basic infrastructure charge, if special reasons so require. In this case, advance notice of any such changes is given. However, the Regulatory Body notes that such charge changes should not be made into already published Network Statement.

The IM implements an index adjustment procedure that takes changed infrastructure management costs into account in order to adjust the prices of the basic charge during the 3-year pricing periods.

In June 2019, Finnish RB issued a decision (TRAFICOM/5620/03.06.00/2019) on the infrastructure charges for electric traffic levied by the FTIA in the timetable periods 2019 and 2020. The decision was issued, because VR Group (Finnish incumbent RU) claimed a revised decision on the calculation principles and level of the infrastructure charge levied for electric traffic by the FTIA. In its decision, the RB concluded that the charges do not fully meet the requirements laid down in the Finnish Rail Transport Act (1302/2018) and the more detailed provisions of EU legislation. Furthermore, by its decision, the RB reduced the 2019 and 2020 infrastructure charges for electric traffic by an average of 8 per cent. It also referred the determination of the infrastructure charge for 2021 back to the FTIA.

Charge	Unit	Differentiation	Cost covered
<p style="text-align: center;">Basic infrastructure charge</p>	<p style="text-align: center;">cent/gross tonne.km</p>	<p style="text-align: center;">Electrical drive Non-electrical drive</p>	<p style="text-align: center;">Marginal cost</p>
<p style="text-align: center;">Performance scheme</p>		<p>Railway operators shall compensate the infrastructure manager if the operation of the railway operator essentially differs from the rail capacity allocated to it, for reasons attributed to the operator, and if such a deviation impedes the functioning of the rail system. The infrastructure manager shall compensate the railway operator if, for reasons attributed to the infrastructure manager, the access to the railway network essentially differs from the rail capacity allocated to the operator, and such a deviation impedes the functioning of the rail system.</p>	

4.8. France

In France, the charging system implemented by SNCF Réseau² is based on a three-part tariff regime for activities under a public contract (*e.g.* regional trains) and a two-part tariff for the other activities (*e.g.* high speed trains). An additional charge is applied in both cases but only to trains using electric traction facilities.

As defined in the French Decree No. 97-446 of 5 May 1997(amended), the current charging system includes running charges, reservation charges and access charges (only for activities under a public contract). As of 2016, a charge for the use of electric traction facilities, corresponding to the variable costs of using electrical traction facilities, was added to the charges reflecting the minimum access package.

The following table details the current charges for timetable 2020:

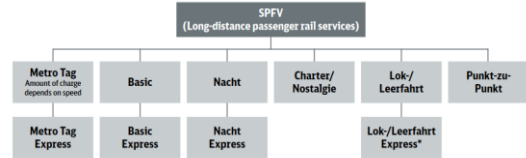
Charge	Unit	Differentiation (as implemented by SNCF Réseau in the Network Statement for 2020)	Cost covered (as laid down in Decree No. 97-446 of 5 May 1997)
Direct cost			
Running charge	€/train.km €/tons.km	Type of service/train Compensated Gross Tonnage Route category The charge is issued only if the reserved path is run	Variable costs for operating, maintenance and renewal
Charge for the use of electric traction facilities (RCE)	€/train.km	This charge is only applied to trains using the electric traction facilities	Charge corresponding to the variable portion of costs for using electrical traction facilities
Mark-up			
Access charge	€/year	Only for activities under a public contract (TER, Transilien and TET)	Fixed costs for operating, maintenance and renewal
Market Segment for PSO	€/ path.km	Conventional vs High Speed Lines Time modulation according to the day and time of departure One segment per region	
Market segment for non-PSO	€/ path.km	Origin-destination Domestic vs International routes Conventional vs High Speed Lines Mass of the train only for high speed line	

² The other infrastructure managers regulated by ARAFER are not considered here.

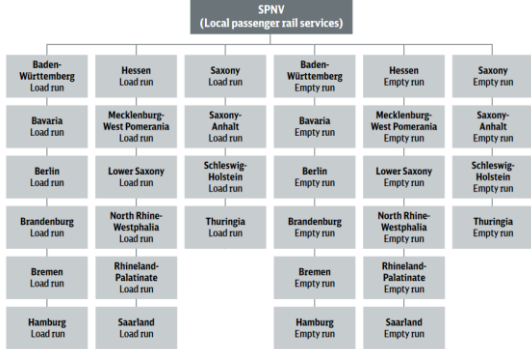
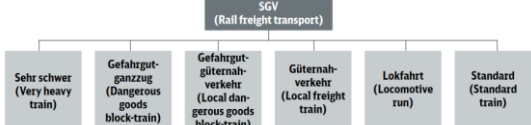
4.9. Germany

The following description is valid for the track access pricing scheme 2018 and in general for the following years. Noise charges will phase out in 2020. For 2018 many elements changed due to the transposition of the recast into German law in 2016.

The charging system for the minimum access package comprises a charging element covering the direct costs of a train run and further components. As the direct costs only cover a smaller part of the total costs, mark-ups are levied. When defining direct cost based charges and the mark-ups users are divided into market segments and charged considering their competitiveness. Further elements of the pricing scheme are the new traffic discount, a charge for issuing an offer, a charge for movements outside line operations and incentives, penalty payments (such as compensations for additional train path costs for work-related rail freight transport diversions in the working timetable, reduced charges for non-contractual conditions/reductions upon request, charging arrangements for diversions due to construction work after conclusion of the individual usage agreement, charging arrangements for rail replacement services or emergency bus services) and charges for amendments of allocated train paths and cancellations. The charging unit is the train path kilometre.

Charge ³	Unit	Differentiation	Cost covered
Charge	€/ train-path.km	Direct costs of train operation + Mark-ups + / - Additional elements	Sum of revenues should cover the costs of the IM (full costs - meaning total cost – minus public payments and plus return on investment)
Direct costs of train operation			
Minimum access package	€/ train-path.km	Train path charge = charge for the minimum access package x train path kilometres	
Market segmentation			
Market segments in long-distance passenger rail services	€/ train-path.km	 <p style="font-size: small;">* Only as part of a train path of the market segments "Metro Tag Express", "Basic Express" or "Nacht Express".</p>	

³ Figures are copied from DB Netz AG (2017), The Track Access Charges 2018 of DB Netz AG; http://fahrweg.dbnetze.com/file/fahrweg-en/14069476/wEJOWHhzkE7IehpKIKZVcG5QccE/15062906/data/track_access_charges_2018.pdf.

<p style="text-align: center;">Market segments in local passenger rail services</p>	<p style="text-align: center;">€/ train-path.km</p>	 <p style="text-align: center;">SPNV (Local passenger rail services)</p>	<p style="text-align: center;">Sum of revenues should cover the costs of the IM (full costs - meaning total cost – minus public payments and plus return on investment)</p>
<p style="text-align: center;">Market segments in rail freight transport</p>	<p style="text-align: center;">€/ train-path.km</p>	 <p style="text-align: center;">SGV (Rail freight transport)</p>	
		<p>“Standard” segment: All train path usages in rail freight transport system that are not assigned to the “Sehr schwer”, “Gefahrgutganzzug”, “Gefahrgutgüternahverkehr”, “Güternahverkehr” or “Lokfahrt” market segments are assigned to the “Standard” market segment.</p> <p>Additional market segments in the rail freight transport sector arise from combining the aforementioned segments with further planning or operational characteristics.</p>	
		<p>Planning characteristics: Planning characteristics include the “Z-Flex” time flexibility and “R-Flex” spatial/geographical flexibility options (except for the segment “Lokfahrt”): “Z-Flex” allows a temporal design-tolerance flexibility of +/- 120 minutes for rail freight train paths in relation to the departure and arrival time and the time of every stop ordered by the customer ie. total timetable construction of 240 minutes.</p> <p>“R-Flex” allows temporal design-tolerance flexibility of +/- 120 minutes for rail freight train paths in relation to the departure and arrival time ie. total design tolerance of 240 minutes, as well as flexibility with regards all possible itineraries when the starting and end point are retained. The only binding geographical factors for constructing the train path are the starting and end points. If the train-path application contains scheduled stops for path construction, there is no geographical flexibility.</p>	
		<p>Operational characteristics: If the applicant requires special operational handling in the event of a fault or malfunction, he can choose either “Express” or “Schnell” in the freight rail transport system. Those operational characteristics can be combined with each of the aforementioned segments except for “Lokfahrt” and „Sehr schwer“ and are available on both the working timetable and ad-hoc services.</p>	

Other charging components		
Noise differentiated track access charge (NDTAC)	Malus in percent of the basic price; bonus in cents per axle-km	NDTAC will consist of an additional 4.0 % surcharge to the train path charge for noisy freight trains and a mileage-specific bonus totalling EUR 0.5 per axle kilometre (maximum of EUR 211 per axle) for the active use of freight wagons that have been converted with low-noise technology. Low-noise freight trains do not pay a surcharge if, depending on the day of service and train number, corresponding formal verification in line with the format template requirements of DB Netz AG is affixed/attached by way of self-declaration by the first business day of the month. A train is regarded as being a low-noise train when at least 90 % of its freight wagons operate at low noise levels by design.
New sector discount	Percentage decrease to the standard usage charge	In order to promote the development of new railway services, DB Netz AG grants all applicants time-limited discount. The applicant must set out that it is a service that has been newly acquired for rail in intermodal competition, or is completely new, and runs on at least 10 train paths in a 12-month period upon the commencement of operations.
Charge for issuing an offer	Timetable costs multiplied by train-path kilometres of the constructed train paths multiplied by the number of days of service	As the costs for processing requests for the allocation of train paths are contained in the train-path charge, a failure to take up a train path once an application already submitted will result in a processing charge levied for issuing the offer. Timetable costs are a part of the direct costs.
Charge for movements outside line operating hours	30 euros/30 minutes or part thereof	Additional charge levied if signal-box occupancy for ad-hoc services exceeds the line operating hours.
Compensation for additional train path costs for work-related rail freight transport diversions in the working timetable	€/ train-path.km	Under the certain conditions (detailed in the network statement), rail freight transport train paths registered in the working timetable are treated like train paths attributed to the "R-Flex" market segment with regard to the calculation of the charges levied for the days of service concerned:
Reduced charges for non-contractual	€/ train-path.km	DB Netz AG itself reduces the payable usage charge in the case of the faults listed in the network statement if these, due to a disruption, have resulted in additional delay minutes.

condition/reduction upon request			
Charging arrangement for diversions due to construction work after conclusion of the individual usage agreement (ENV)	€/ train-path.km		If the route of a contractually agreed train path deviates from the ENV (diversion) due to construction work not taken into consideration for such train path in the ENV, only the train path charge for the route to which the ENV relates is invoiced.
Charging arrangements for rail replacement services or emergency bus services			In cases where the railway infrastructure cannot be used for a specific period of time as a result of planned measures such as construction, unforeseen faults or reasons that the RU must account for from a vehicle equipment and/or personnel perspective, the rules and regulations defined for rail replacement services (see network statement DB Netz AG) or emergency bus services are applied.
Amendments	Amendment charge per day of service = timetable costs × affected train path km		The amendment fee corresponds to the share of costs that are incurred as a direct result of train operation for the processing of requests for the allocation of train paths. It is charged for: <ul style="list-style-type: none"> • Amended speed without amendment to the day of service • Amended time of day without amendment to the day of service
Cancellations	Minimum cancellation fee per day of service = timetable costs × affected train path km		Minimum cancellation fee: For cancellations up to the 31st day prior to the departure of the train, a minimum cancellation fee will be charged for the day of service cancelled depending on the expense associated therewith. The minimum cancellation fee corresponds to the share of costs that are incurred as a direct result of train operation for the processing of requests for the allocation of train paths.
	Increased cancellation fee per day of service = train path km × applicable cancellation fee		Increased cancellation fee: For cancellations within 30 days prior to departure of the train, an increased cancellation fee will be charged for every day of service cancelled in connection with the train path charge of the cancelled train and the time of the cancellation.

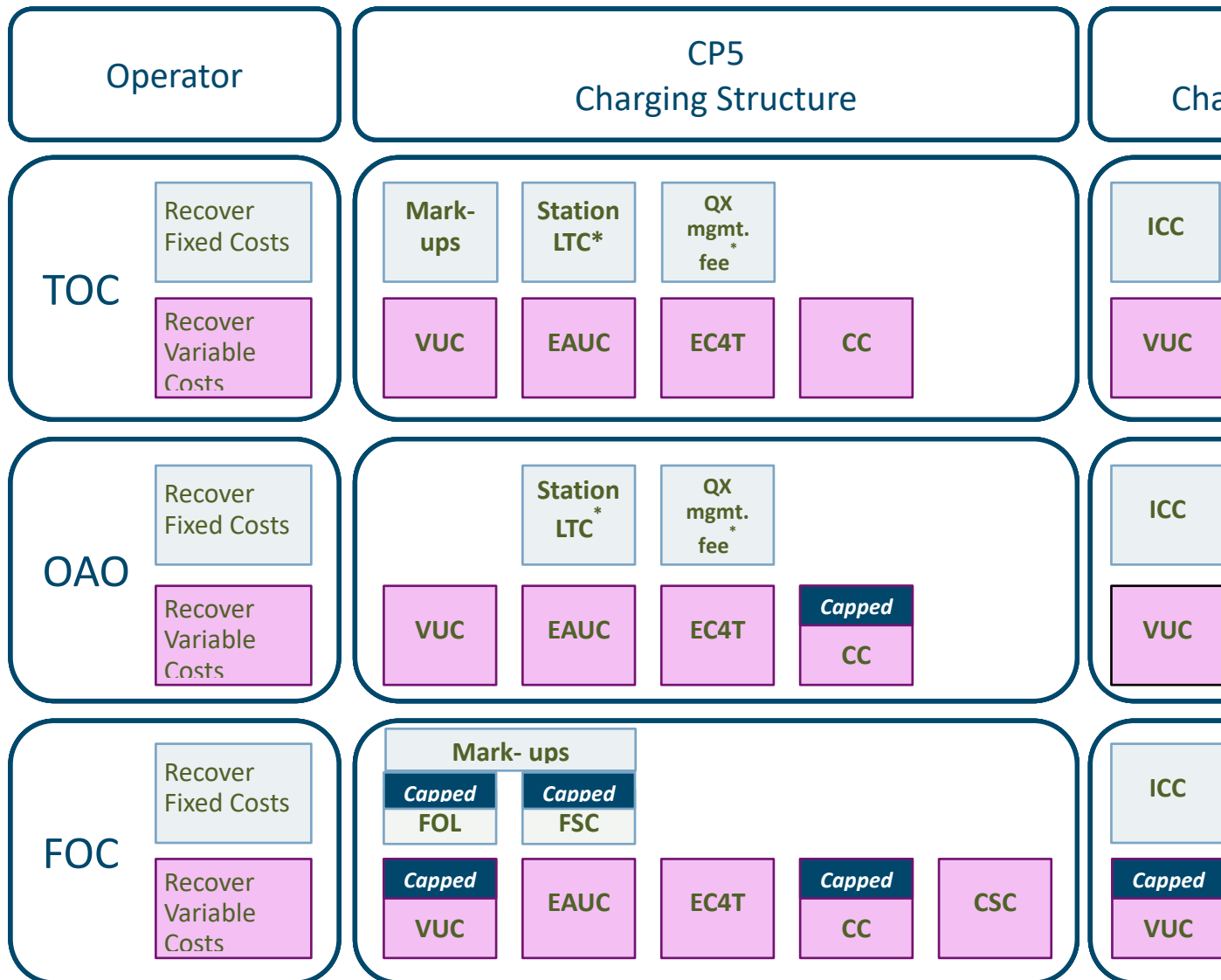
4.10. Great Britain

In the GB, the charging regime for the IM of the national network⁴ has been developed to cover the short-run marginal costs of running services on the network. In addition, for the purposes of full cost recovery, train operators pay various fixed charges to cover a proportion of the IM fixed costs. These charges are recovered as mark-ups. Currently, open access operators do not make contributions towards the IM fixed costs.

⁴ All other infrastructure managers are not considered here.

Charge	Unit	Differentiation	Cost covered
Variable Usage Charge (VUC)	£ per thousand gross tonne mile for freight and £ per vehicle mile for passenger	All services pay this charge but it varies based on the vehicles used and for freight, also the commodity carried.	Covers the maintenance and renewal costs that vary with traffic in terms of the incremental damage the service does to the track, civils and signalling infrastructure
Traction electricity charge (EC4T)	kWh. For services that are not metered, this is modelled per train mile for multiple units, otherwise per kgtm	Operators have option of using modelled consumption rates or metering their use of electricity	Network Rail recovers their costs of providing electricity for traction purposes.
Electrification asset usage charge (EAUC)	£ per vehicle mile (passenger) £ per thousand gross tonne mile (freight)	Applied to all electrically powered services	Recovers maintenance and renewal costs of electrification assets that vary with traffic.
Coal spillage charge (CSC)	£ per thousand gross tonne miles	Only applicable to freight trains carrying coal	Recovers cost of coal spillage
Capacity charge (CC)	£ per train mile	Applied to all types of train operators	Intended to allow Network Rail to recover the performance regime costs that it incurs by allowing additional traffic onto the network
Fixed Track Access Charge(FTAC)	Lump sum charge determined for the control period (5 years)	Applies to passenger services under public service contracts (franchises) only	Determined on basis of Network Rail's revenue requirement after accounting for the income received from variable track access charges, regulated station charges, other single till income and network grant.
Freight only line charge(FOL)	£ per thousand gross tonne mile	Applies to freight services carrying coal for electricity generators, nuclear fuel or iron ore.	Recovers some of the fixed costs associated with freight only lines.
Freight specific charge (FSC)	£ per thousand gross tonne mile	Applies to freight services carrying coal for electricity generators, nuclear fuel or iron ore.	Recovers 'freight avoidable costs' - the costs that would be foregone if freight services were to no longer use the network.

This charging structure will change from 1st April 2019 when we start the implementation of the next control period i.e. CP6. Some charges will be removed (such as capacity charge and coal spillage charge) while others will be grouped together in what will be called Infrastructure Cost Charge (ICC). The figure below compares the current CP5 charging structure and the forthcoming CP6 charging structure.



*refers to station charges and are not part of the MAP

Note:

For CP6, all charges recovering fixed network costs will be known as infrastructure cost charges (ICCs). These are the charges currently referred to as mark-ups. The following freight commodities will be subject to ICCs: ESI coal, iron ore, spent nuclear fuel, ESI biomass. For freight services, we have confirmed that FOL and FSC will be merged in CP6, and only one ICC will be levied, which for billing purposes will be called the FSC. The ICC for

franchised passenger operators will continue to be called FTAC. We will levy ICCs on open access services in the interurban market segment in CP6, as a rate per train mile

4.11. Greece

The infrastructure management charging system is constituted of a basic cost which includes the cost of track maintenance and operational services. Where appropriate, it also includes additional charges such as electrification and special costs.

There are two basic charges, each per train.km, one concerning operation services (0.65 euros per train.km) and the other concerning track maintenance (0.40 euros per train.km). Each one of these charges is to be multiplied by two factors. The first factor for the operation services (for the first quantity) has to do with the relation of the day time period of the route with the peak one and ranges between 0.7 and 1.2 and the second factor for the operation services (for the first quantity) has to do with the relation of the whole time of the route in the timetable in relation with the ideal minimum time that a typical fast train can operate this route without intermediate stops and ranges roughly between 1 and 1.5. The first factor for the track maintenance (for the second quantity) is related to the quality of the track and ranges between 0.53 and 0.90, while the second factor for the track maintenance (for the second quantity) is related to the axial load, the total load and the speed of the train and ranges between 1.0 and 9.61 . The sum of the two quantities gives the charge per train.km.

Charge		Unit	Differentiation	Cost covered
Basic cost	Operation	€ / train.km	Categorization of routes based on peak periods Burdening line capacity	≤ 30% of the actual cost (accrued expenditure) of maintenance and operating
	Maintenance		Maximum speed The train's composition (number of axes) The mean axial load Quality of infrastructure provided	
Additional costs	Electrification	€ / train.km	Whenever using a route which operates under electrification	
	Additional charges depending on the case	No charge per unit : charging on a case-by-case basis	Special- dangerous consignments	

4.12. Hungary

The Hungarian State Railway (MAV Co.) was established in 1992. In 2000, an internal separation of accounts occurred. Different entities were created in order to manage the main activities. In 2003 the first Hungarian Network Statement was released and opened the way to foreign RUs on the network in 2004 (4 freight companies at the end of the year). The same year, the independent Rail Capacity Allocation Body was created. In 2006, the Hungarian Railway Authority was set up. The Hungarian network has a total length of 7700km. It is owned by the State and managed by the Infrastructure Manager that is a separate company, however still part of MAV Group.

The Győr-Sopron-Ebenfurti Vasúti Co. (GYSEV Co.) was founded in 1872 and is owned mainly (94%) by the Hungarian and the Austrian State. The company operates in the North-Western region of Hungary and in Austria. In Hungary GYSEV provides IM (in its geographical area) passenger and traction services and is considered as one of the two national PSO companies and also has a freight company (GYSEV Cargo) legally separated since 2010. The GYSEV network has a total length of more than 400km.

The main principles of the access charge are the following:

- no discrimination between RUs should take place;
- prices set by the IMs must reflect the total justified costs;
- differentiation of the pricing system;
- bottom-up (engineering) approach;
- long term orders are preferred.

Minimum access package	€/train.km €/gross ton.km €/electric train.km	- ensuring of train path - running of trains i) train km performance (passenger, locomotive, standard freight/special freight trains), track section category ii) gross ton km performance (passenger, standard freight, locomotive / special freight trains) - use of catenary performance	MAV Co. is seeking a full cost recovery without profit
Access to service facilities	€/use of stations €/vehicle/day €/vehicle €/litre	- use of stations by passenger trains for stopping performance/ use of origin/destination stations by passenger trains performance/ use of stations by freight trains performance, station category - storage of vehicle performance - use of wagon weigh bridges (scales) performance/ staff ensured for weighing/ exchange of axles - use of refuelling facilities/ensuring of fuel for traction performance	cost of operating the service facility + reasonable profit

	<p>€/person/hour</p> <p>€/cubic meter</p> <p>€/bogie/hour</p>	<ul style="list-style-type: none"> - ensuring of shunting staff for passenger trains performance/ ensuring of shunting staff for freight and locomotive trains performance/ availability of shunting staff for passenger trains performance/ availability of shunting staff for freight and locomotive trains performance/ train preparation performance - ensuring of water for water supply performance - use of bogies 	
Additional services	<p>€/kWh</p> <p>€/litre</p>	<ul style="list-style-type: none"> - ensuring of traction current performance/ ensuring of electric energy used for other train traction purposes (preheating, precooling) performance - ensuring of fuel used for other traction purposes (preheating, precooling) performance 	
Ancillary services	<p>€/train</p> <p>€/ticket</p>	<ul style="list-style-type: none"> - technical inspection of railway vehicles performance - ticketing and reckoning activity performance 	

4.13. Italy

In Italy, the charging system in place applied to all the lines is based on the economic regulation issued by ART in November 2015 (Decision 96/2015), that follows the relevant EU and Italian regulation (in particular, on the EU side, the Recast, Regulation 2015/909 and Regulation 2015/429, while on the national side, the Legislative Decree 112/2015)^[1]. The new regulatory framework includes both costing and charging rules and introduces regulatory accountability obligations on the IM and different verification procedures along the regulatory period that lasts 5 years.

The identification of the perimeter of admissible costs to be recovered by the IM with access charges follows these principles and criteria: (i) only the relevant costs for operating the train service are considered, distinguishing direct costs from other costs; (ii) a full (efficient) cost approach, where a 2% annual efficiency target on operative costs is set for the IM; (iii) the CAPM/WACC methodology for the computation of the cost of capital is adopted.

The charging system established by the RB is modulated in components: (i) A component: direct costs (depending on mass, speed and contact wire related to the rolling stock used by the railway undertaking); (ii) B component: mark-ups; (iii) C component: other elements (for scarcity, environmental incentives, ETCS, etc.); (iv) D component: other elements deriving from specific regulations.

The table below sets out the principal elements of the access charges system according to the regulation issued by ART in November 2015:

Charge	Unit	Charging criteria	Cost covered
Access charges: A component	€/train.km	Depending on the mass, the speed and the use of contact wire by the rolling stock used by the railway undertaking	Direct costs (following Regulation 2015/909)
Access charges: B component	€/train.km	-Market segments -Track category -Slot time	Other costs than direct ones, such as residual operating costs, the cost of capital and depreciation
Access charges: C component	€/train.km	-Scarcity -Environmental effects -ETCS -Regional compensation regimes	External Cost based

In July 2016, the Italian IM adopted the access charges for the regulatory period 2016-2021. The new set of charges successfully passed the verification procedure set by the regulatory body. It foresees 24 different market segments that belong to 8 main categories: technical services, maritime services, PSO regional passenger services, PSO national passenger services, open access international passenger services, open access basic national passenger services, OA national premium passenger services, freight services. The IM has established to use only A component and B component of RB charging scheme.

From November 2015, ART has issued a number of decisions concerning the access charge system:

^[1] Italy implemented the Recast with the Legislative Decree 112/2015 in July 2015.

- (i) In May 2017, ART opened a proceedings (decision 77/2017 in order to review some specific components of the Italian access charges system owing to the introduction of a new service by the incumbent: couple trains running on HS lines. This proceedings ended in December 2017 with Decision No 152/2017 introducing (i) a new market segment pairs (single train/couple train) in order to differentiate the two types of services; (ii) a new differentiation of the component of direct costs (catenary), depending of the number of the pantographs.
- (ii) In September 2017 with decision no. 114/2017, ART has ordered that, for the new railway line AV / AC Bivio Casirate - Bivio / PC Roncadelle, the access charges have to be the same as those already determined by the IM for the routes Turin-Milan, Milan-Bologna, Bologna-Florence, Rome-Naples, previously included in the same AV / AC network. This was meant to guarantee fair access and to prevent discriminatory effects on high-speed service markets.
- (iii) In February 2018, ART issued decision no 17/2018, expressing a favourable opinion on the application by the IM of a differentiated charge regime for rail freight services running on the HS line Bologna-Florence during the night hours. The reduced access charges was allowed for two years.

4.14. Latvia

The main principles of the access charges are developed hereafter⁵:

- the full cost of infrastructure should be covered by accumulated charges and state budget funding if it is available;
- all expenses are traced to particular train category;
- Train-kilometres and gross tonne-kilometres are used as cost drivers.

Charge	Unit	Market segmentation	Cost covered
Operating	Train.km	Differentiation among: <ul style="list-style-type: none"> - Freight trains; - Passenger trains (electric); - Passenger trains (diesel); - Passenger trains with locomotive; - Narrow-gauge trains. 	1/ Costs of maintenance of railway infrastructure objects made by IM; 2/ Costs of railway infrastructure objects development (renewals, reconstruction, building) consists of capital depreciations costs (excluding capital depreciations costs of government, EU funds) and premium costs; 3/ Duties and taxes paid by IM

⁵ In order to transpose Directive 2012/34/EU, currently responsible institutions and stakeholders in Latvia have started to develop new charging scheme. Significant changes are therefore planned.

4.15. Lithuania

The components of the charge for the minimum access package, the tariffs constituting contributions and the procedure for the calculation and the payment of the charge payable by railway undertakings (carriers) approved by the Government of the Republic of Lithuania. Tariffs for the charge for the minimum access package are calculated for a single effective period of the working timetable (annually).

The charge for the minimum access package are set equal to the costs directly incurred as a result of operation of trains, save for the exceptions:

- providing services of transit by railway transport,
- mark-ups for certain market segments.

The direct costs incurred in the provision of the minimum access package do not include depreciation of fixed assets of the public railway infrastructure, investment costs and loan service costs.

The performance improvement system covers the accounting of the information on delays or cancellation of passenger and freight trains, the procedure for calculating, setting and paying penalties for traffic disruptions and compensations for such disruptions to suffered railway undertakings and companies willing to access railway infrastructure.

Charge	Unit	Calculating based on	Cost covered
Train traffic charge rate	EUR/gross tonne km	Costs directly incurred when providing the minimum access package services, operation volume of all trains.	Direct costs (following Regulation 2015/909)
Passenger transit charge	EUR/gross tonne km	State funds, operation volume of passenger trains, operation volume of all trains, operation volume of transit passenger trains.	Sum of revenues should cover the costs of the IM
Cargo transit charge	EUR/netto tonne km	State funds, operation volume of freight trains, operation volume of all trains, transport volume of all freight, transport volume of transit freight.	Sum of revenues should cover the costs of the IM
Market segments cargo carriage charge: - charge for loaded and empty containers, semi-trailers and other containers of different types - charge for dangerous goods carriage, - charge rate for low-value goods carriage, charge rate for other goods carriage	EUR/netto tonne km	Revenue of the railway undertakings received for freight carried, where freight is attributed to a certain segment of the rail freight transport services market, costs of the railway undertakings when carrying freight which is attributed to a certain segment of the rail freight transport services market, volume of the freight transport of the railway undertakings when carrying freight which is attributed to a certain segment of the rail freight transport services market.	Sum of revenues should cover the costs of the IM
Charge for using the contact grid	Eur/train km;	costs of IM, directly incurred when providing the contact grid service, runs of the trains using electric traction	Direct costs (following Regulation 2015/909)

4.16. Luxembourg

Charge	Unit	Differentiation	Cost covered
Minimum service			Equals the cost that can be allocated directly to running the railway service and include a fee for scarcity of access to infrastructure capabilities
Access and request of path	Train path.	Regular train path Pre-arranged extraordinary train path Tailor made extraordinary train path	
Operation of path (track wear)	Train .km	Freight train Combined transport freight train Motor-driven passenger train Passenger train Running locomotive	
Capacity / congestion charge	€/km		

Note: A performance regime is applied with penalties and compensations

4.17. Netherlands

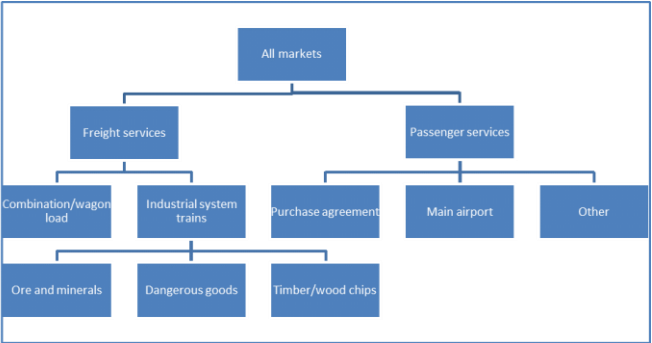
The table below shows the charging system in the Netherlands for the minimum access package, which has been approved by the ACM in 2018. This charging system is valid from 15 December 2019 until 11 December 2022.

Charge	Unit	Differentiation	Cost covered
Access Variable Usage Charge	train.km / tonne.km	Differentiation between freight and passengers Freight: train km by graduated weight category Passengers: train km by graduated weight category	Covers the incremental cost of operating a train on the network. Measured by a percentage of wear and tear cost in total maintenance costs.
Electrification: use of electrical wire	€ per KwH	No segmentation, defined by km per train type/weight, train type and speed (actual usage in case gauges have been fitted)	Covers cost of transport of electricity, and maintenance and renewal costs of wire attributed to traffic.

4.18. Norway

Directive 2012/34/EU has not yet been implemented in Norway. However, the content has mainly been implemented in national regulation.

Charges corresponding with Chapter IV Section 2 (art. 29 -37) in Directive 2012/34/EU in 2019:

Charge	Unit	Differentiation	Cost covered
Charges reflecting direct costs	NOK/ gross tonne.km	Passenger traffic Freight traffic Differentiated for three parts of the network	Estimated average marginal maintenance costs incurred as a result of operating a train service
Capacity / congestion charge	NOK/ passage	Passage through the Oslo tunnel during rush hour	
Discounts	NOK/ gross tonne.km	Freight traffic on "considerably underutilised lines"	
Performance regime	NOK/ minutes delayed NOK/ cancellation	Passenger traffic > 3:59 min, freight traffic and long distance trains > 5:59 min.	Penalties for disrupting the operation of the network and compensation for actors which suffer from disruptions
Reservation charge	NOK/ gross tonne.km (percentage of charges reflecting direct costs)	Cancellation 59 days - 15 days before scheduled departure Cancellation 14 days – 72 hours before scheduled departure Cancellation less than 72 hours before scheduled departure	
Market-segmentation	NOK/ gross tonne.km	 <pre> graph TD A[All markets] --> B[Freight services] A --> C[Passenger services] B --> D[Combination/wagons load] B --> E[Industrial system trains] D --> F[Ore and minerals] D --> G[Dangerous goods] E --> H[Timber/wood chips] C --> I[Purchase agreement] C --> J[Main airport] C --> K[Other] </pre>	

4.19. Poland

In Poland charges for the minimum access package are based on the costs directly incurred as a result of operating the train service and they are applied on non-discriminatory terms to all rail companies.

Polish regulatory authority approves the way of fixing of unit rates of charges ex-ante annually for anyone train timetable in scope of the verification of the charges for the minimum access package.

The unit rates of these charges must be submitted, together with the calculations of their values, to the President of the Office of Rail Transport. The President of the Office of Rail Transport approves the way of fixing of unit rates of charges within 90 days of the receipt or refuses to approve them if there is any infringement of calculation rules. The calculation of charges for the minimum access package takes into account the part of the costs which is directly incurred as a result of operating the train service, in particular the part of the costs of:

- maintenance and renewal;
- rail traffic management;
- depreciation, if it is determined on the basis of the actual wear of the infrastructure attributable to traffic.

The calculation of charges for the minimum access package does not include costs which are not directly incurred as a result of operating the train service, in particular:

- the administration costs;
- infrastructure safety and public order in railway area;
- the financial costs;
- the indirect costs.

The implementing act 2015/909 has been implemented since timetable 2018/2019

In the scope of charges to access service facilities, service facilities operator shall be set the level of charges. Charges can not exceed the cost of sharing the object incurred by the operator with a reasonable profit defined as a rate of return on equity is determined by the operator taking into account the possible risks incurred by the operator, not more than 10% per annum.

President of of the Office of Rail Transport controls the charge ex post. It is possible to order the modification of level of charges including the rules for the calculation of the charges and the amount of charges charged by other operators for sharing and provision of services in the same objects.

Charges depend on train-km and they are differentiated on the basis of different line categories and weight categories of trains. The line categories are determined on the basis of axle load limits and speed limits.

The basic charge may be increased during periods of congestion on a particular rail line or its section with insufficient capacity.

The IM may grant discount on the basic charge. Discounts may be granted for a limited time and on a particular section of the infrastructure:

- to develop new rail services;
- in order to use the railways with a significant unused capacity

Charge	Unit	Differentiation	Cost covered
Operating charge	PLN/ train. km	<ul style="list-style-type: none"> - Freight/passengers services - Weight categories of trains - Line categories 	<p>The costs directly incurred, <i>i.e.</i> the part of the costs of:</p> <ul style="list-style-type: none"> - maintenance and renewal; - rail traffic management; - depreciation, if it is determined on the basis of the actual wear of the infrastructure attributable to traffic
Reservation/ Cancellation Charge	% charge		Depends on the term of cancellation

The IM can levy higher charges (excluding transport for which the minimum unit rate basic charge is used and transport dependent on public funding), if the market can bear it *i.e.* in the case it has been established that the increased charge does not result in a shift to road transport. The IM undertakes 'market can bear tests' no less than once every three years, taking into account the division of the market into at least the following pairs of types of services:

- 1) passenger services/freight services;
- 2) regional passenger service/ sub-regional passenger services ;
- 3) trains carrying dangerous goods /other freight trains;
- 4) domestic services /international services;
- 5) combined transport / direct trains;
- 6) block trains / single wagon load trains;
- 7) regular train services / occasional train services.

4.20. Portugal

In Portugal, the IM (IP⁶) in addition to the daily management, maintenance and further development of the infrastructure, is also responsible for the control and the safety of all train traffic.

According to Decree-Law No. 91/2015 of 29 May, IP aims at the design, construction, financing, maintenance, operation, rehabilitation, enlargement and modernization of road and rail national networks.

The charging system implemented by IP should be in accordance with Directive 2012/34/EU transposed by Decree-law no. 217/2015. Charges for using the minimum access package correspond to the costs directly attributable to the operation of the rail service, as set in section 3 of article 31 of Decree-law 217/2015.

The implementation of Regulation (EU) 2015/909 will most likely require changes in the charging system of the Portuguese IM. The charging system currently in use by the IM has been developed under Regulation IMTT 630/2011, issued by the former regulatory body pursuant to the former legal framework and is not completely in line with Directive 2012/34/EU and the cost methodologies introduced by Regulation 2015/909.

The Portuguese IM is now in the process of analysing and redefining the charging model, so, the information stated bellow will change in a near future.

Charge	Unit	Differentiation	Cost covered
Access charge	€/train.km	Differentiation between freight and passenger trains	Costs directly incurred by train operations, for instance: maintenance and renewal, rail traffic management
Cancellation Charge	€/train.km	In case of partial cancellation, only the unused path will be subjected to penalty	If, for a given Working Timetable, a railway undertaking will not use more than 5% of the requested capacity, when it reaches this percentage, it will pay extra 5% over and above the defined tariff for every additional train-path it had requested and not-used, up to a maximum of 500% of the applicable tariff. VAT will be added to these values

⁶ Infraestruturas de Portugal, S.A. is a state-owned company resulting from the merger of Rede Ferroviária Nacional – REFER, E.P.E. (REFER) and EP - Estradas de Portugal, S.A. (EP, S.A.) through which REFER was merged into EP, becoming a public limited company named Infraestruturas de Portugal, S.A. (IP). The merger became legally effective on 1 June 2015 upon publication of Decree-Law no. 91/2015, of 29 May.

Access to service facilities	Charges for access to service facilities may not exceed the cost of their provision, plus profit established on the basis of Portuguese market values, as set in section 11 of article 31 of Decree law 217/2015.		
Additional services charges	€/unit	These services may comprise: traction current, charges for which shall be shown on the invoices separately from charges for using the electrical supply equipment; tailor-made contracts.	Cost of providing the services, calculated on the basis of the actual level of use
Ancillary services charges	€/unit	These services may comprise: access to telecommunication networks; provision of supplementary information; ticketing services in passenger stations; etc.	Cost of providing the services, calculated on the basis of the actual level of use
Performance Regime	<p>The performance scheme aims at reducing disturbances to a minimum and to promote efficiency in the services, allowing for a better operating performance, in line with the standards foreseen in the allocation of capacity.</p> <p>The performance regime implemented since 2010 in accordance with the IMT Regulation 473/2010 (issued under the former legislation) does not allow a full compliance with the requisites from Annex IV of Decree-Law 217/2015 which transposed the Directive 2012/34/UE. For this reason, at the publishing date of the 2018 Network Statement, IP and the RUs are jointly developing a new process during 2017.</p>		
Noise charge	<p>Decree-Law nº. 179/2014, of December 18, amending Decree-Law nº. 27/2011, transposing Directive nº 2014/38/EU, on the interoperability of the railway system within the Community regarding noise pollution, allows IM to consider a noise charge. IM does not consider it yet. However, since the charging model is being revised it is possible that this component might be considered.</p>		

4.21. Romania⁷

In Romania, the minimum access package shall include the services supplied by the IM (CFR SA) in order to allow at least the transit of a train on the network.

CFR SA shall supply the minimum access package to any applicant/RU, on a non-discriminatory basis, according to the availability of the railway infrastructure.

In order to ensure the minimum package of benefits provided for the national Law⁸ 202/2016 and in access contracts, CFR charges an infrastructure access charge (IAC).

IAC Basic Charging Elements

IAC basic charging elements	Basic charge			
Charging elements depending on train tonnage	Charge per train-km depending on tonnage (lei/train-km)			
Category of traffic section	A	B	C	D
Traffic section	Ttsn	Ttsn	Ttsn	Ttsn
Minimum tonnage	Tmin	Tmin	Tmin	Tmin
Tonnage	Ft	Ft	Ft	Ft
Charging elements depending on distance	Charge per train-km depending on distance (lei/train-km)			
Category of traffic section	A	B	C	D

Classification of Traffic Sections

Category of traffic section	Speed regime (km/h)	
A	from 121	to 160
B	from 91	to 120
C	From 51	to 90
D	From 0	to 50

The charging elements included in the table above have the following meaning:

Ttsn – the charge depending on the tonnage for each category of non-electrified sections;

Tmin – the gross train tonnage starting from which the tonnage factor is applied;

Ft – the tonnage factor represents a correction coefficient to be applied to the gross train tonnage;

Tc – the traffic charge depending on the distance for each section category.

The IAC value for a train circulating on a traffic route shall be calculated as the sum of the charges for each distance run on a traffic section, depending on its section category, by using the following formula:

$IAC = \sum IAC \text{ section}$ where:

$IAC \text{ section} = IAC \text{ tonnage} + IAC \text{ circulation} + IAC \text{ electrification.}$

$Tonnage \ IAC = Km \times Ttsn [1 + (Gross \ tonnage - Tmin) \times Ft]$

$IAC \text{ circulation} = Km \times (Tc + Ttse)$

$IAC \text{ electrification} = Km \times Ttse$

⁷ In Romania has not yet implemented a new charging scheme, based on the Regulation 2015/909. At the moment, CFR SA, the Romanian IM, is in procedure to hire a consultant for a new charging model.

⁸ Transposing Directive 2012/34

Charge	Unit	Differentiation	Cost covered
IAC (infrastructure access charge)	Lei/train.km	The calculation of the charging elements depends on : - distance run by the train; - gross train tonnage; - traffic type: freight or passenger; - traffic route; -category of the traffic section and its electrification systems for supplying traction power.	directly incurred cost
Discounts	Lei/gross tonne.km	CFR grants to the RUs the following access charge discounts: - by 33% for the international block trains in transit without processing on the CFR network; - by 33% for the block trains in intermodal traffic;	
Performance Regime	0,2 lei/1 minute of delay	The penalty fee for one minute of delay in lei /0.2/ minute. The maximum monthly penalty amount owed by one of the parties may not exceed 1% of the total access charge of the respective railway transport undertaking for that month. This limit of 1% of the acces charge value applies in the relationship between the IM and a RU.	Penalties for disrupting the operation of the network and compensation for actors which suffer from disruptions

4.22. Slovakia

The Slovak Republic has a valid regulatory framework since March 2017 and new charging system is valid since January 2019.

	Charge	Unit	Differentiation	Cost covered
Minimal access package	ordering and allocation of capacity	€ per train.km		Variable costs (fixed costs are extracted)
Minimal access package	management and organization of traffic	€ per train.km		Variable costs (fixed costs are extracted)
Minimal access package	operability of infrastructure	€ per 1000.gross tonne.km		Variable costs (fixed costs are extracted)
Minimal access package	use of electrical supply equipment for traction current	€ per 1000.gross tonne.km		Variable costs (fixed costs are extracted)
Track access to service facilities	access to passenger stations, buildings and facilities	€ per stop		Variable costs (fixed costs are extracted)
Track access to service facilities	access to suitable location for ticketing services	€ per m ² per month		Variable costs (fixed costs are extracted)
Track access to service facilities	access to marshalling yards and freight terminals	€ per stop		Variable costs (fixed costs are extracted)
Track access to service facilities	access to storage sidings	€ per wagon per day		Variable costs (fixed costs are extracted)

4.23. Slovenia

In February 2013 the Public Agency for Railway Transport (the allocation and safety authority), who is competent for determining and collecting track access charges, implemented a new charging methodology, based on direct costs. Track access charges for the minimum access package are calculated considering:

- the number of train kilometres performed on certain line categories
- type of power car;
- weighting of the line category;
- the coefficient of the power car category;
- cost of supplement / deduction for the type of transport.

User charges for the minimum access package are based on costs, which are directly incurred by train operations. The difference with full costs is subsidized by state funding. To date Slovenia has not taken the decision to introduce mark-ups.

In accordance with Railway Transport Act the allocation authority may establish higher access charges for congested infrastructure under following conditions:

- Allocation authority defines track section as congested;
- IM envisaged this situation and published in the network statement;
- IM prepares enhancement plan;
- regulatory body approves higher access charge.

By amending Railway Transport Act on 6th November 2015, which implemented Recast Directive, all essential functions (included determination of track access charges) were transposed from Public Agency for Railway Transport to Infrastructure manager. We are in the process of audit of new methodology for track access charges. It is planned to be finished by the end of this year.

Charge	Unit	Differentiation	Cost covered
Access	€/train.km	Line category (7): - 3 main lines (G1-G3) - 4 regional lines (R1-R4)	Costs directly incurred by train operations
Operating	€/train.km	Factor of power car's (3): (A,B,C) Factor of transport type (18): - Cargo trains up to 1000 t gross weight - Cargo trains from 1001 to 1500 t gross weight - Cargo trains from 1501 to 1750 t gross weight - Cargo trains from 1751 to 2000 t gross weight - Cargo trains more than 2000 t gross weight - Cargo trains – empty (less than 100 t net weight) - Cargo trains (circular, collecting) - Locomotive trains (empty multiple units, solely running power cars) - Tilting passenger trains - Classic passenger trains - Multiple units - Motorail through the Bohinj tunnel - Other motorails - Empty classic passenger trains - Heritage trains - Service trains (scheduled maintenance) - Service trains (unscheduled maintenance) - Other trains	
Congestion / Scarcity	€/train.km	(In 2018 IM declared Divača-Koper as congested line)	
Late cancellation fees	% of user charge for allocated train path (+25 € for ad-hoc train paths)	Cancellation: - up to 6 hours before scheduled time of departure – FREE - less than 6 hours before scheduled time of departure – 50% of user charge - not cancelled / train does not run – 100%	

4.24. Spain

In Spain, since the beginning of July 2017, the new charging system has been implemented following the Directive 34/2012

For the rail network, the minimum access package is based on train-kilometres and includes operating charges and reservation charges. According to the new railway law, the reservation charge will provide incentives for efficient use of capacity, foreseeing a penalization for the capacity reserved and not used.

The IM's cost accounting model is based on a *top down* fully distributed cost, because the main goal of the charging system is full "cost recovery". However, nowadays, this objective is only feasible for high speed lines due to the operational deficit of the conventional network.

Charge	Unit	Differentiation	Cost covered
Capacity allocation charge	€/train.km allocated	Type of line and type of service	Cost of capacity allocation, traffic management, traffic safety and renewal of safety and traffic control facilities.
Rail track use charge	€/ train.km circulated	Type of line and type of service	Maintenance and conservation cost of the railway infrastructure.
Use of electric energy transformation and distribution facilities charge	€/train.km circulated	Type of line, service and traction	Cost of maintenance, conservation and renewal of the electrification facilities.

4.25. Sweden

The charging system for the minimum package of access services consists of two direct cost-based charges, and one mark-up as of the 2020 Network Statement (valid 15 December 2019 through 12 December 2020).

The direct cost-based charges consist of a track charge and a train path charge. They are based on the short-term marginal cost of operation, maintenance and reinvestments.

The **track charge** is based on gross tonne-kilometres, and is imposed at varying amounts for both freight traffic and service trains, and for passenger traffic. Between 2016 and 2018, track charges were levied in different amounts depending on the maximum admissible axle load (STAX) of the train. As of the 2019 network plan, the differentiation is based on the average axle load of the train. Trains with a higher average axle load thus pay a higher track charge. Axle load is an important parameter that reflects the wear and tear that is caused by a train. Differentiated track charges reflect variations in wear and tear between different trains. The charge reflects the wear and tear on equipment affected by the weight of trains, such as the tracks.

The **train path charge** is levied at three levels. The levels are based on the capacity utilisation, where lines with a higher capacity utilisation are charged at a higher level. The charge is based on train-kilometres and is meant to capture the marginal cost of wear and tear. Unlike the track charge, the train path charge does not vary with the weight of the train. It is designed to capture the wear and tear on equipment not affected by the weight of the train, such as catenaries. The differentiation by capacity utilisation is motivated by the fact that amount of traffic affects the Swedish Transport Administration's costs for maintaining the infrastructure. However, starting with the 2021 Network Statement, the charge will only be charged in two levels: a base level and a high level. The base level will only reflect the marginal cost of wear and tear. The high level will include a mark-up on lines with a high capacity utilisation.

The **passage charge** is a mark-up are levied in the cities of Stockholm, Gothenburg and Malmö during mornings and afternoons on weekdays. The charge is only levied on passenger trains.

A performance scheme with charges based on cumulative delay and cancelled trains compared with the timetable is employed. Charges are levied based on a delay attribution code that identifies the party responsible for causing the delay. The performance scheme consists of four charges. Two **delay charges** are imposed based on cumulative delay minutes. A double-directed charge sees IMs and RUs pay a charge to the other party depending on who is responsible for the delay. In the single-directed charge, the IM pays a fixed charge to RUs for longer delays (>30 minutes for passenger trains and >60 minutes for freight trains). Two **cancellation charges** are also levied. For the double-directed cancellation charge, RUs and IMs pay a charge to the other party for trains cancelled less than 24 hours before departure (so-called acutely cancelled trains). In the

single-directed charge, the IM pays a charge to the RU when the IM cancels a train between 83 days and 24 hours before departure.

A **reservation charge** is imposed when allocated capacity for train paths is cancelled by railway undertakings or traffic organisers. Cancellations made later than 24 hours before departure are handled within the performance scheme (double-directed cancellation charge).

	Charge	Unit	Differentiation	Cost covered
Track access charges	Track charge	gross tonne km	Segment (passenger and freight/service trains); Average axle load (4 levels for freight and service trains, 2 levels for passenger trains)	Maintenance, operation and reinvestment cost.
	Train path charge	train km	Capacity utilisation of line (3 levels)	Maintenance, operation and reinvestment cost.
	Passage charge	passage	Segment (passenger trains only)	Mark-up
Performance scheme	Delay charge, double-directed (IM↔RU)	cumulative delay minutes		
	Delay charge, single-directed (IM→RU)	occasion	Segment (passenger and freight); number of delay minutes (two levels)	
	Acute cancellation charge, double-directed (IM↔RU)	occasion	Cause of cancellation (RU or IM)	
	Cancellation charge, single-directed (IM→RU)	fixed charge + SEK/km/train	Time before planned departure (two levels)	
	Reservation charge		48–15 days prior to departure: 20% of train path charge for passenger, 10 % for freight 14 days–24 hours prior to departure: 40% of train path charge for passenger, 20% for freight	

4.26. Switzerland

This is the Swiss charging system valid from 1st January 2017. The existing scheme of 2016 will be extended by a wear and tear factor by this date.

The charging for the minimum access package covers the standard marginal costs considering the different costs of infrastructure in the network, the demand and the environmental impact of the vehicles. Contribution margins are levied in the passenger transport segments, considering if it is a franchised or non-franchised service.

Note: Switzerland as non-member of the EU has not fully adopted the different European Railway reform steps. The legal structure of the Swiss charging system as well as the prices for the minimum access package are defined by State (and not the IM). However the prices for additional services are fixed by the IM.

	<i>Charge</i>	<i>Charging Unit</i>	<i>Differentiation</i>	<i>Cost covered</i>
Variable minimum train-path price	Minimum train-path price	CHF/path km	3 categories of routes on the network	The revenue for each traffic segment should cover the standard marginal costs considering the different costs of infrastructure in the network, the demand and the environmental impact of the vehicles
	Peak-hour demand coefficient	Factor 1 or 2	Factor is applied, when the train-path is used during peak-hours on Mo to Fri between 6.00 to 8.59am and/or 16.00 to 18.59.	
	Train-path quality	4 different factors	The applied factors consider the priority rules for the different traffic segments based in the railway act	
	Stop surcharge	CHF/stop	Surcharge for sections with mixed traffic	
	Basic price by wear	CHF per unit	Differentiation of the various trains on infrastructure in relation to speed, path layout, vehicle type and vehicle design.	
	Basis price by weight	CHF/gross ton kilometre	For historic vehicles. For regional transport segment in 2017 only.	
	Surcharge for trains hauled by combustion-based move	CHF/gross ton kilometre	Trains with thermic traction on electrified lines	

	Dangerous goods surcharge for freight traffic	CHF/axle kilometre	Specific costs arise in connection with the transport of dangerous goods (security or restrictions on operation)	
	Low-noise bonus for freight traffic	CHF/axle kilometre	For freight vehicles with disk, drum or composite brakes	
	Discount for the ETCS train control system	CHF per year	Granted for vehicles not travelling on specific new lines and brought into service before 1 st January 2013.	
	Discount for traction assisted transalpine freight trains	CHF/powerful axle and train-path kilometre	The discount is applied for the entire route travelled with more than four powered axles on the Lötschberg-Simplon and Gotthard-line section	
	Cancellation fee	Factor	Depending on the deadline of cancellation	
	Contribution margin for passenger trains	% of traffic revenues or CHF/kilometre offered	Differentiation between franchise-holders' and non-franchise holders' passenger trains	
	Ex-catenary energy	CHF/kwh x Factor	The „network load factor“ takes account of varying demand and the resulting production costs throughout the day	Price is fixed in the manner, that no uncovered costs arise