1. Traction current services

1.1 Calculating the energy consumption

The consumption recorded on the on-board meters is used as the basis for invoicing. The measured consumption is determined based on the energy delivered to the pantograph reduced by the energy which was returned during regenerative braking.

The document "Requirements for the fitting of an on-board Energy Management System on traction units running on the Infrabel network", available on the *Business Corner* (documentation → clients info → Your Power), contains additional information regarding the energy measurement system. This document is based on the European standards as determined in the LOC & PAS TSI and EN 50463: 2017. TSI LOC & PAS makes the addition of such an energy measurement system mandatory for every renewed and upgraded traction unit. If the railway undertaking itself is not a vehicle keeper, it shall ensure that the traction units it uses comply with European regulations. The railway undertaking should be aware that the infrastructure manager has no contractual or other relationship with the vehicle keeper. If a problem arises with an energy measurement system, its readout or data transmission, the railway undertaking remains the single point of contact for the infrastructure manager. The railway undertaking can then turn to the vehicle keeper.

For energy meters which do not comply with the accuracy defined in EN 50463 (see document "Requirements for the fitting of an on-board Energy Management System on traction units running on the Infrabel network"), a surcharge of 1% will be added to measured consumption.

Rolling stock equipped with energy meters can pass through various countries. Following validation (see point 2), the data can be assigned and exchanged with the network on which the consumption took place.

These meter values must be linked to the information on the trains, which means that the railway undertakings shall declare the composition of all trains to Infrabel (European Vehicle Numbers). This applies in particular to the used traction units. This is preferably done before the departure of the train. This information can be modified in *Fill In* or Train Traction up to 3 days after the departure of the train . The data regarding the train path are also validated (see point 2). Measured consumption for parked trains or shunting will also be assigned.

The consumption for a train path without metering data or supposed incorrect metering data will be assessed based on average specific consumption per category (passengers, freight, or high speed).

On average, a cargo train consumes far fewer kWh per tonne-km travelled, as its average speed is lower and a cargo train stops less frequently along its route. A high-speed train consumes more kWh on average per tonne-km travelled.

Infrabel uses the following formulae[1]:

***Passengers:* (34 + 0.60 * D1 + 0.8 * D2) Wh/tonne-km**

***High speed:* (41 + 0.60 * D1 + 1.0 * D2) Wh/tonne-km**

***Freight:* 4 kWh/km + 11,5 Wh/tonne-km**

[1] Formulae as of 1 January 2024.

The number of degree-days D1 and D2 by day is based on the average temperature measured by the weather stations of Infrabel. For the calculation of D1, each degree below 16.5˚C is counted as one degree-day. This means that a day with an average temperature of 6.5°C results in D1 equal to 10. For the calculation of D2, each degree above 20°C is counted as one degree-day.

We have sufficient measured values for the following types of traction units. The measured specific consumptions are significantly lower than the general estimation formulae. If measured values are missing, adjusted estimation formulae[2] are applied:

Passengers (T18/T19): ***(30,5 + 0,60 * D1 + 0,8 * D2) Wh/ton-km***

Passengers (Desiro): ***(32 + 0,60 * D1 + 0,8 * D2) Wh/ton-km***

Freight (Traxx/Vectron): ***3,5 kWh/km + 10,5 Wh/ton-km***

An energetic reconciliation will take place at the end of each month. The total of metered and estimated consumption is compared with the measurement of the consumption injected in the overhead contact line. We consider 4% of transport losses (purchased by Infrabel). The difference will be distributed (via adjustment of the estimated consumptions). This method allocates an advantage of at least 3% to the metered consumptions and supports thus the installation of on-board meters.

If Infrabel discovers large differences between estimated and actual consumption, it has the right to change these estimation formulae during the validity period of this appendix in order to eliminate these differences.

In the energy market, the transmission system operator is responsible for maintaining the balance between injection and extraction. As the rail sector is also part of the energy market, electricity injection and extraction on the rail traction network must also be calculated on a quarterly basis and per applicant. Trains braking or descending a gradient inject electricity into the rail traction network. From 2025 onwards, Infrabel will calculate the overall consumption and injection separately for each applicant.

1.2 Validation rules

The metering data from the energy meters on the rolling stock also contain GPS positions. Positions missing for up to 60 minutes are detected and automatically filled in by interpolation. They are treated as 'estimated' values. If the positions are missing for a longer time, the data are not exchanged and therefore no longer used in the allocation process.

The metering data are not used for allocation and the energy consumption is estimated if:

- more than two consecutive metering periods are missing;
- the consumption is greater than that permitted for the particular type of traction unit;
- the consumption when stationary is greater than that permitted for the particular type of traction unit;
- the GPS positions of the meter change without measuring consumption.

The data relating to the train path are also validated. No energy consumption is assigned to the path if:

- the distance between two detection points is greater than 200 km;

[2] Formulae as of 1 January 2024.

- the speed is higher than permitted;
- an unknown traction unit is used.

No energy consumption is assigned to a part of a path with a mass of the train less than 50 tonnes or greater than 5000 tonnes.

For some errors, the metering data cannot be linked to a path, and the energy consumption is always estimated. This is the case if unpermitted combinations of traction units are indicated.

The validated positions of the path are compared with the metered positions from the energy meter. If these positions don't match for a part of the train path, the energy consumption of the train for that part of the path is estimated.

The energy consumption of a metered or partially metered train is always compared with the estimated consumption. The metered consumption should lie between 25% and 250% of the estimated consumption. Otherwise, the charge for the path is calculated based on its estimated consumption.

1.3 Rates for traction current supply

Infrabel considers two charging periods for the *Your Power* service:

Normal hours	Working days (excluding public holidays) from 07.00 to 22.00
Off-peak	Public holidays, Saturdays, Sundays Working days from 22.00 to 07.00

Infrabel will use the actual unit price that it pays to its energy supplier.

<u>For the calendar year 2024:</u>

75% of the price was fixed at the end of 2023. The remaining 25% is determined based on the average day-ahead price for the current month.

The following formula is used:

- for normal hours: € 123.17/MWh + 0.31 * Monthly Belix Base
- for off-peak: € 92.15/MWh + 0.23 * Monthly Belix Base

Infrabel has the right to change these rates during the validity period of this appendix in case of any change to the legal or regulating framework.

<u>For calendar year 2025:</u>

Infrabel will buy part of the traction power on the forward market and part on the spot market. The forward market share is estimated at 70 per cent. Infrabel will organise mini-competitions to purchase this on a regular basis. To supply the difference between actual consumption and forward blocks, Infrabel will contract with one energy supplier. Settlement will be based on hourly prices on the day-ahead market. If off-take is greater than the forward volume, it is a purchase of electricity. If off-take is lower than the forward volume, it relates to a sale.

The resale price includes all costs invoiced by suppliers to Infrabel with the exception of grid costs which are included in the rates for other transmission and distribution services for traction current supply. The resale price also includes the costs of the external consultant.

Rebilling to the applicant is based on a price for normal hours (NH) and a price for idle hours (IH) and according to the applicant's consumption. The selling price is in €/MWh. Infrabel calculates the reinvoicing price on a monthly basis for normal hours on the one hand and silent hours on the other. This price is the same for each applicant. Infrabel takes into account all costs and revenues linked to the purchase of the forward blocks, the purchase and sale of the hourly blocks on the spot market, the compensation for energy losses on the Elia grid and the balancing costs charged and the supplier's management fee. The total costs for NH and IH respectively are divided by the respective consumed volumes to obtain a different price for NH and IH. This price is increased to cover the cost of the external consultant, additional local power (e.g. from PV production not yet known in June 2023) and the certificate obligation. The latter three costs are re-invoiced on the basis of an average cost per MWh on an annual basis. Infrabel takes no margin on the selling price.

1.4 Rates for other transport and distribution services for traction current supply

Electricity also uses the transport and distribution networks of public network operators. The infrastructure manager pays the costs of using these networks. The infrastructure manager must pass on these costs to the end users, i.e. the applicants using the electricity, regardless of whether they purchase traction power from the infrastructure manager or from a supplier of their choice. This rate also includes the cost of purchasing electricity to cover energy losses in the Rail Traction Network, the cost of metering and allocating energy in the Rail Traction Network, taxes and charges and costs associated with storage facilities.

The unit price for other transport and distribution services

- is € 24.5/MWh for the period from 01/01/2024 to 31/12/2024
- for the period from 01/01/2025 to 31/12/2025 will be determined at the end of 2024 (the unit price will be multiplied by the net consumption).

Infrabel has the right to change these rates during the validity period of this appendix in case of any change to the legal or regulating framework.

From 2025, this rate will be calculated on the net consumed energy.

1.5 Billing arrangements

Advance payments

Infrabel creates a table showing the monthly advance payments. These are based on past and/or expected consumption, as well as on the expected unit prices.

The table with the advance payments is incorporated into the track access agreement or the capacity agreement by means of an addendum. This table may be revised by Infrabel, possibly at the request of an applicant, if it turns out that the advance payments have been under- or over-estimated.

Advance payments are only requested if the expected annual consumption is greater than 3 GWh.

The invoice for these advance payments is sent on the first day of the month of use and must be paid within 30 days. From April 2024, the remittance of the invoice for advance payments will be brought forward to the 25th of the month preceding the month in which consumption occurs (the first invoice that meets this criterion will therefore be sent on 25 March 2024).

Definitive invoices

Definitive invoices are issued in the month following the use and are payable within 30 days.

When drawing up the definitive invoice, account shall be taken of the advance payments already invoiced and paid.

Infrabel may charge interest on arrears in line with the legal interest rates on the amounts billed but unpaid within the deadlines set out above. The requisition and collection costs are payable by the user.

2. Services for exceptional transports

Each exceptional transport must be preceded by a study.

The railway infrastructure manager performs this study in various phases:

- A technical analysis of the load and/or the equipment;
- A study of the train path;
- An optional additional study if the load exceeds the nominal dimensions or the maximum allowed weight;
- Whether or not issuing of a provisional autorisation;
- Invoicing for this study.

The amount to be invoiced is determined as follows:

Amount = unit price x multiplier x connections

2.1 Unit prices

The indexed unit prices (excluding VAT) for 2024 are:

Transport of exceptional height	€266.49
Transport of exceptional width	€266.49
Transport of exceptional length	€266.49
Other exceptional transports	€266.49
Transport of exceptional height + additional study	€325.70
Transport of exceptional width + additional study	€325.70
Transport of exceptional weight with instructions	€325.70
Transport of exceptional weight + additional study	€325.70

2.2 Period of validity of the provisional authorisation

The period of validity for a provisional authorisation for exceptional transport is at most, according to the choice of the applicant:

- 100 calendar days, starting from the date of issue of the authorisation (in any case, the authorisation ends at the latest on 31 December of the calendar year, even if it is for less than 100 days) or
- one year, which corresponds to a timetable (in any case, the annual authorisation ends on the second Saturday of December).

In the second case, i.e. in the case of the annual authorisation, the multipliers in point 2.3 below apply.

2.3 Multipliers

For transports with a recurrent nature, the provisional authorisation can be issued and renewed per timetable. As the study of these latter takes longer, the following multipliers are applied to the unit prices mentioned in point 2.1:

Annual renewal of authorisation	2
Annual authorisation study	3

2.4 Connections

For invoicing an exceptional transport, "connections" means:

- For inland transport: the number of arrival stations with the same departure station
- For inland transport: the number of departure stations with the same arrival station
- For international transport: the number of departure and arrival stations in Belgium multiplied by the number of border points.

The number of connections is multiplied by two if the request for special transport involves a return route.

2.5 Prices for the modification of an authorisation

A modification of an existing authorisation will be treated as a new request in the following cases. Consequently, the request will be invoiced in accordance with the applicable prices (see table unit prices above):

- Study of a new or additional train path
- Study due to the addition of a departure station, an arrival station and/or a border point
- Additional load / modification of the load
- Modification of the wagon.

A modification due to unavailable Belgian rail infrastructure (works, disturbances …) will not be charged for.

Remark:

For requests for which the study will take longer than 1 day, an adapted offer will be made.

2.6 Indexing of unit prices

The unit prices applied by Infrabel are indexed annually on 1 January. This indexing corresponds to a weighting of the consumer price ‘health’ index (65%) and ‘service’ index (35%). The reference index is that of the month of November preceding the indexing.

3. Technical inspection of rolling stock

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3.1 Applicable rates

These rates apply to the technical inspection of rolling stockwithout the use of train paths. The basic rates for personnel do not apply during the weekend or during the night. These unit prices exclude VAT.

Rates per hour - personnel	Value 1 January 2024
Industrial engineer	€11.58
Head of technical sector	€103.11
Deputy head of technical sector, technician mechanic	€96.53
Administrative employee	

Description of fixed-rate charges	Value 1 January 2024
Fixed administrative charge per dossier: issue of documents for (re-)testing, extension or in case of loss	€96.53
Type D, shunter with 2 axles and 1 driver's cab	€446.32
Type D, On Track Machine autonomous, max. 4 axles and 1 driver's cab	€557.88
Type G, On Track Machine towed: wagon max. 4 axles	€334.73
Type J, rail-road traction unit	€446.32
Type K&S, rail-road crane standard type, elevating platform, spraying/mowing tractor - including work authorisation	€386.10
Type R, heavy trolley	€289.58

Fixed-rate supplements	Value 1 January 2024
Per extra axle (from 2 or 4 axles)	€55.79
Second component of a dual rig (e.g. locomotive with tender, packing machine consisting of two units)	€167.36
Radio-controlled shunting	€111.58
Radio-controlled works (equipped with AWI, fall protection, …)	€56.24
Second driver's controls, extra man-basket for elevating platform	€83.68
Work authorisation On Track Machine crane car, rotation and/or uplift limits, emergency pump, gantry clearance, track loading	€167.36

Fixed-rate supplements	Value 1 January 2024
(Auto)function test of the safety systems (memor, TBL 1+)	€55.79

Call-out costs	Value 1 January 2024
Domestic network: fixed call-out cost	€223.10
Abroad: number of kilometres in €/km + per hour worked (see rates per hour - personnel)	€0.43

Extra costs	Value 1 January 2024
Vehicle not ready for testing (still work to do, safety equipment to be supplemented, or to be positioned on another track)	Rates for personnel per hour of delay
Unfavourable conditions for testing (not above inspection pit, ...)	€313.56
Urgent testing (day of request – day of testing < 5 days)	€96.53
Overnight charge (travel, hotel, parking, meals, Infrabel day/night work pay)	On request
Test drives on-site for journeys off route	On request
Electromagnetic Compatibility and detection tests Compatibility study based on examination of the dossier and practical tests on test site I-AM)	On request

3.2 Indexing of unit prices

The unit prices applied by Infrabel are indexed annually on 1 January. This indexing corresponds to a weighting of the consumer price 'health' index (65%) and 'service' index (35%). The reference index is that of the month of November preceding the indexing