METHODOLOGY

of the Infrastructure Manager for establishment of compensations of the RUs for the restrictions of capacity allocation due to SE NRIC, which are not announced in the Network Statement or are beyond the indicated time intervals and are related to the Performance Scheme, adopted by both the RUs and the SE NRIC

I. Introduction and general definitions

1. The present methodology is elaborated and agreed according to the decision made in a joint meeting held on 21 November 2016 between the RUs and the Infrastructure manager (SE NRIC) pursuant to Directive 34/2012/EU and Ordinance 41 on access to and use of the railway infrastructure.

2. According to the Performance scheme adopted and published in the Network Statement of SE NRIC, the company compensates some additional costs related to:

- additional costs for work time of the locomotive staff
- additional costs for work time of the traffic staff
- additional costs for distributed electricity
- additional costs for consumed electricity
- additional costs for diesel fuel

3. Offered methodology allows taking into account:

- The specifics of the transport of each RU;
- Equal treatment of the RUs regarding the principle of determination of the cost rates.

4. The main used parameters, on the grounds of which the costs of the RU are determined, are as follows:

- Train kilometers;
- Gross ton kilometers;
- Train hours;
- Man hours of the staff depending on the number of the locomotives executing the train traffic;
- Cost rates - KWh/grtkm for electricity, litre/grtkm for fuel different for each RU.
- Single costs - BGN /man-hour for the staff, BGN/KWh for electricity, BGN/l for the fuel.

5. The objective of the present methodology is calculation of the compensations due to occurred overheads of the RU, caused by some restrictions of allocation of capacity by SE NRIC, which are not announced in the Network Statement or are beyond the specified time periods.

6. The compensations for the RU regarding item 5 are for trains with changed routes (redirected trains), additionally assigned trains and isolated locomotives, which has incurred overheads due to the traffic interruption in some sections of the railway network according to the conditions agreed upon between the parties in the Performance scheme, published in the SE NRIC Network Statement.

7. All prices and infrastructure charges applied in the present methodology for calculations of the compensations are according to the values effective by the moment of occurrence of the event until the moment of its expiration.

8. Upon agreement of both parties the unit rates of the prices for paid diesel fuel and electricity (allocated and consumed) might be averaged for the respective period.

9. The calculation of hour and cost rates, unit costs etc. is described in the present methodology.

10. Approved scheme (AS) of the train traffic - this is the train route developed by SE NRIC with the respective annual TT accepted by the RU and approved with a List of regular trains for the respective RU.

11. The changed scheme (CS) of the train traffic - this is the route of the train developed by SE NRIC due to some restrictions of the capacity allocation and a needed change of the agreed route, when the origin and destination stations coincides, which scheme is accepted and approved with a telegram agreed with the respective RU/RUs and issued by SE NRIC.

12. The calculations of the compensations are made as a difference between the costs made by the RU under the CS and the costs that would be made in case of train traffic according to the AS, referred to as costs, calculated under AS.

13. The calculations are made for each train separately for AS and CS depending on the specifics of its movement - change of the rolling stock, change of the number and/or traction of the service locomotives and other specifics related to the costs agreed with the Performance scheme, which are subject to compensations.

14. Amendments of and supplements to the Methodology are made according to the order of its issuance. Changes are agreed upon with the signatures of the representatives of the IM and RUs.

15. The unit cost of one man-hour per person of the locomotive staff.

The cost of one man-hour of the locomotive staff calculated according to the accountancy data provided by BDZ Cargo EOOD and approved by the RAEA. A reference for the last fiscal year generated by the corporative software for personal costs is used. The reference is used as grounds for calculation of an hourly rate and insurance installments charged over it, formed by the listed elements of the personnel costs. It is determined according to the following formula and includes the following components:

$$Ц^{ччлп} = \frac{ОЗ+ПСПО+НТ+ГОКТ+ПКМ+ТВОП}{ГНРЧ} * К_{ов}^{лп}, (BGN/h)$$

where:

$Ц^{ччлп}$ - unit cost of one man-hour per person of the locomotive staff

$ОЗ$ - annual amount of a basic salary of a person from the locomotive staff

$ПСПО$ – annual cost of a fringe for length of service and professional experience in compliance with the labour code of a person of the locomotive staff.

$НТ$ – annual fringe for night work

$ГОКТ$ – fringe for annual leave according to the Collective Labour Agreement

$ПКМ$ – fringe for annual travel kilometers

$ТВОП$ - labour remuneration for work during official holidays

$ГНРЧ$ - annual rate of the work hours

$К_{ов}^{лп}$ – ratio reflecting percentage of insurance installments paid by the employer per person from the locomotive crew

$$К_{ов}^{лп} = 1 + П_{ов}^{лп}$$

where:

$П_{ов}^{лп}$ – percentage of insurance installments paid by the employer per person from the locomotive crew

The personnel costs shall be formed according to the effective regulations (Labour code and Ordinance on the structure and organization of the personnel costs), which regulates the additional labour remunerations as mandatory payments.

Exception for passenger services: In view of the reduced work time duration (7,8hrs) of the locomotive staff the cost received under the formula unit cost per one man-hour shall be multiplied by ratio K = 8/7,8 =1,0256

15.1. Unit cost of one man-hour per person of the locomotive staff in freight services

$$Ц_{тп}^{ччлп} = Ц^{ччлп}\text{ , (BGN)}$$

15.2. Unit cost of one man-hour per person of the locomotive staff in passenger services

$$Ц_{пп}^{ччлп} = Ц^{ччлп} * К\text{ , (BGN)}$$

where:
К – ratio different duration
К=1,0256

16. Unit cost of one man-hour per person of the train crew.

The cost of one man-hour of the train crew is determined according to the accountancy data provided by BDZ - Passenger services EOOD and approved by RAEA. The reference is used as grounds for calculation of an hourly rate and social insurance charged over it, formed by the listed elements of the personnel costs. It is determined according to the following formula and includes the following components:

$$Ц^{ччпп} = \frac{ОЗ+ПСПО+НТ+ГОКТ+ПКМ+ТВОП}{ГНРЧ} * К_{ов}^{пп}\text{, (BGN/h)}$$

where:

$Ц^{ччпп}$ - unit cost of one man-hour per person of the train crew

ОЗ - annual amount of a basic salary of a person from the train crew

ПСПО – annual cost of a fringe for length of service and professional experience in compliance with the labour code of a person of the train crew.

НТ – annual fringe for night work

ГОКТ – fringe for annual leave according to the Collective Labour Agreement

ПКМ – fringe for annual travel kilometers

ТВОП - labour remuneration for work during official holidays

ГНРЧ - annual rate of the work hours

$К_{ов}^{пп}$ – ratio reflecting percentage of insurance installments paid by the employer per person from the train crew

$$К_{ов}^{пп} = 1 + П_{ов}^{пп}$$

where:

$П_{ов}^{пп}$ – percentage of insurance installments paid by the employer per person from the train crew

The personnel costs shall be formed according to the effective regulations (Labour code and Ordinance on the structure and organization of the personnel costs), which regulates the additional labour remunerations as mandatory payments.

II. RU Compensation

The RU compensation is the difference between the costs for the given train service made by the respective RU according to the changed scheme and the costs of the same train according to the approved scheme. The costs subject to compensations are approved and signed between the RUs and SE NRIC and are published in the Network Statement in the Performance scheme

1. General compensation

$$КОМ = Р_{пс} - Р_{ус}\text{ , (лв)}$$

where:

КОМ - compensation
$Р_{пс}$ – costs of the RU made according to the changed train traffic arrangement
$Р_{ус}$ – calculated costs of the RU according to the approved train traffic scheme

2. – costs of the RU made according to the changed train traffic arrangement

$$Р_{пс} = Р_{пс}^{рвлп} + Р_{пс}^{рвпп} + Р_{пс}^{ре} + Р_{пс}^{ке} + Р_{пс}^{дг}\text{ , (BGN)}$$

where:
$Р_{пс}^{рвлп}$ – work time costs of the locomotive crew

$Р_{пс}^{рвпп}$ - work time costs of train crew

$Р_{пс}^{ре}$ - costs for distributed electricity

$Р_{пс}^{ке}$ - costs for consumed electricity

$Р_{пс}^{дг}$ - costs for diesel fuel

2.1. Work time costs of the locomotive crew according to the changed scheme.

Costs for increased working time of the locomotive crew means the multiplication of the unit costs of one man-hour for the respective position and additional man-hours of the locomotive crew for the same position along the by pass route and by the additionally assigned trains in comparison with the route approved with the List of the regular trains.

$$Р_{пс}^{рвлп} = Ц^{ччлп}(ЧЧЛП_{пс}^{ов} + ЧЧЛП_{пс}^{дназ} + ЧЧЛП_{пс}^{ил} + ЧЧЛП_{пс}^{яо})\text{ , (BGN)}$$

where:
$Ц^{ччлп}$ - unit costs of one man-hour of a person of the locomotive train for respective position
$ЧЧЛП_{пс}^{ов}$ - man-hours of the locomotive staff of the main train when traveling along by pass routes in comparison with the route approved with a List of the regular trains
$ЧЧЛП_{пс}^{дназ}$ - man-hours of the locomotive staff due to the assignment of additional trains
$ЧЧЛП_{пс}^{ил}$ - man-hours of the locomotive staff due to the traffic of isolated locomotives for supplying or which have supplied auxiliary traction.
$ЧЧЛП_{пс}^{яо}$ - man-hours of the locomotive crew from the moment of arrival before departure of the train and release after arrival of the train are formed as an amount of the respective times occurred in the railways along the bypass route with change of the locomotive staff or in case of assignment of an additional train, including isolated locomotives for auxiliary traction.

2.2. Work time costs of the locomotive crew according to the changed scheme.

Costs for increased work hours of the train crew means the multiplication of the unit costs of one man-hour for the respective position and additional man-hours of the locomotive crew for the

same position along the by pass route and by the additionally assigned trains in comparison with the route approved with the List of the regular trains.

$$Р_{пс}^{рвпп} = Ц^{ччпп}(ЧЧПП_{пс}^{ов} + ЧЧПП_{пс}^{дназ}+ЧЧПП_{пс}^{ил}+ЧЧПП_{пс}^{яо}) , (BGN)$$

where:

$Ц^{ччпп}$ - unit costs of one man-hour per person of a train crew for respective position

$ЧЧПП_{пс}^{ов}$ - man-hours of the train crew of the main train when traveling along by pass routes in comparison with the route approved with a List of the regular trains

$ЧЧПП_{пс}^{дназ}$ - man-hours of the train crew due to the assignment of additional trains

$ЧЧПП_{пс}^{ил}$ - man-hours of the train crew due to the traffic of isolated locomotives for supplying or which have supplied auxiliary traction.

$ЧЧПП_{пс}^{яо}$ - man-hours of the train crew from the moment of arrival before departure of the train and release after arrival of the train are formed as an amount of the respective times occurred in the railways along the bypass route with change of the locomotive staff or in case of assignment of an additional train, including isolated locomotives for auxiliary traction.

2.3. Costs for allocated electricity according to a changed scheme

Costs for allocated electricity under the changed scheme means multiplication of the unit costs for allocation, unit cost rate of electricity and the gross ton kilometers realized with electricity traction under the changed scheme.

$$Р_{пс}^{ре}=Ц^{ре} * С^{ел} * БРТКМ_{пс}^{ел} , (BG)$$

where:

$Р_{пс}^{ре}$ – costs for allocated electricity according to a changed scheme

$Ц^{ре}$ - unit cost for allocation of electricity

$С^{ел}$ - unit cost rate of electricity

$БРТКМ_{пс}^{ел}$ - gross ton kilometers realized with electric traction according to the changed scheme

2.3.1. - unit cost for allocation of electricity.

The unit cost for electricity distribution is determined as a quotient between the cost of the invoice (invoices) for allocation of electricity of a RU from all trains for the period of interruption of the traffic and quantity of electricity consumed by all trains of the same RU for the same period and it is determined according to the following formula:

$$Ц^{ре} = \frac{СФ^{ре}}{КЕ} , (BGN/MWh)$$

where:

$СФ^{ре}$ - total cost of the invoice(s) for distribution of electricity of the respective RU for the respective period of interruption.

$КЕ$ - quantity of electricity consumed by the respective RU for the period of traffic interruption (MWh). To be determined according to the data provided by the electricity distribution company of SE NRIC.

The calculated unit cost is an average unit cost of the distribution of electricity of all trains with electric traction of any RU for the respective period.

2.3.2. Unit cost rate of electricity

Unit cost rate of electricity is the ratio between the quantity of electricity consumed by a RU for the period of traffic interruption and total gross ton kilometers realized with electricity by the same RU for the same period of traffic interruption and it is determined according to the following formula.

$$С^{ел} = \frac{КЕ}{РБТКМ^{ЕТ}}, \text{(MWh / gtkm)}$$

where:

$РБТКМ^{ЕТ}$ - total cost of gross ton kilometers realized by all trains with electricity traction of a RU for the respective period of reporting of the traffic interruption. It is determined according to SE NRIC data based on the annual reports on the work executed by a RU upon calculation of the infrastructure charges.

The calculated unit cost rate is an average unit cost rate for electricity consumed by all trains with electric traction of a RU for the respective period (month) of interruption of the traffic.

2.4. Costs for electricity consumed under a changed scheme.¬

Costs for allocated electricity under the changed scheme means a multiplication of the unit costs of the consumed electricity, unit cost rate of electricity and the extra gross ton kilometers realized with electricity traction.

$$Р^{ке}_{пс} = Ц^{ке} * С^{ел} * БРТКМ^{ел}_{пс}, \text{(BG)}$$

where:

$Р^{ке}_{пс}$ – costs for consumed electricity under a changed scheme

$Ц^{ке}$ - unit cost of consumed electricity

$С^{ел}$ - unit cost rate of electricity

$БРТКМ^{ел}_{пс}$ - gross ton kilometers realized with electric traction according to the changed scheme

2.4.1. Unit cost of consumed electricity

The unit cost of consumed electricity is determined as a quotient between the cost of the invoice (invoices) for consumed electricity of a RU from all trains for the period of interruption of the traffic and quantity of electricity consumed by all trains of the same RU for the same period of and it is determined according to the following formula:

$$Ц^{ке} = \frac{СФ^{ке}}{КЕ}, \text{(BGN/MWh)}$$

where:

$СФ^{ке}$ - total cost of the invoice (s) for consumed electricity of the respective RU for the relative period of disconnection.

$КЕ$ - quantity of electricity consumed by the respective RU for the period of traffic interruption (MWh). To be determined according to the data provided by the electricity distribution company of SE NRIC.

The calculated unit cost is an average unit cost of consumed electricity of all trains with electric traction of a RU for the respective period.

2.4.2. Unit cost rate of electricity - $С^{ел}$

It is determined according to item 2.3.2.

2.5. Costs for diesel fuel

Costs for diesel fuel are the multiplication of unit cost per a liter diesel fuel and the sum of the multiplications between the technical standard rate of diesel fuel and realized gross ton kilometers of diesel traction according to a changed scheme for each series of diesel locomotives

$$Р_{пс}^{дг}=Ц^{дг} * С_{т}^{дг} * БРТКМ_{пс}^{дг} , (BG)$$

where:

$Р_{пс}^{дг}$ – costs for consumed diesel fuel according to a changed scheme

$Ц^{дг}$ - unit cost per litter of diesel fuel

$С_{т}^{дг}$ - technical standard of consumption of diesel fuel per a locomotive of „x“series

$БРТКМ_{пс}^{дт}$ - gross ton kilometers realized with diesel traction according to the changed scheme

2.5.1. Unit cost of diesel fuel.

$Ц^{дг}$ - as unit cost of diesel fuel the exchange cots of Lukoil Bulgaria EOOD averaged for the interruption period is considered.

2.5.2. Technical standard of consumption of diesel fuel

For calculation of the actual quantity of diesel fuel the technical standard for consumption of diesel fuel in operation is taken into consideration, which is determined as an amount of several values as follows:

$$С_{т}^{дг} = С_{нт}^{дг} + С_{нпот}^{дг} + С_{нпр}^{дг} + С_{нвм}^{дг} ,(l)$$

where:

$С_{т}^{дг}$ – technical standard (l)

$С_{н}^{дг}$ – fuel consumption rate for traction needs (l)

$С_{нпот}^{дг}$ – fuel consumption rate for departure (l)

$С_{нпр}^{дг}$ – fuel consumption rate for staying (l)

$С_{нвм}^{дг}$ – fuel consumption rate for train shunting (l)

Calculated technical standard is valid only for the investigated or identical rail section.

3. Calculated costs of the railway undertaking made under the approved train traffic scheme.

$$Р_{ус} = Р_{ус}^{рвлп} + Р_{ус}^{рвпп} + Р_{ус}^{ре} + Р_{ус}^{ке} + Р_{ус}^{дг} , (BGN)$$

where:

$Р_{ус}^{рвлп}$ – calculated work hour costs of the locomotive crew

$Р_{ус}^{рвпп}$ – calculated work hour costs of the train crew

$Р_{ус}^{ре}$ - calculated costs for distributed electricity

$Р_{ус}^{ке}$ - calculated costs for consumed electricity

$P_{ус}^{дг}$ - calculated costs for diesel fuel

For the calculation of the costs under the approved scheme the steps under item 2 of item II of the methodology for RU compensation shall be applied

4. Procedure for bringing claims to SE NRIC for payment of compensation to the RU.

4.1. Until the end of the month following the reporting month with overheads incurred by RU subject to compensation by SE NRIC according to the present methodology the respective RU shall submit an official written request to SE NRIC for payment of the due compensations.

4.2. The request shall be provides as calculations in compliance with the steps of the present methodology and it should be accompanied with detailed calculations for the respective claimed trains provided on an electronic data storage device (CD, e-mail), together with all formulas and logical dependencies, if they have been used for the calculations until fulfillment of the condition under item 4.3.

4.3. Calculation of the compensations is made under an algorithm specified between the RUs and SE NRIC.

4.4. Within two months after submission of the official written request by the respective RU (the date set out in the SE NRIC reference number shall be effective). SE NRIC shall make the needed inspections and if no remarks will be made by SE NRIC, the latter shall elaborate and provide to the respective RU a bilateral protocol specifying the cost of the due compensation.

4.5. In case of remarks or disagreement by SE NRIC consultations shall be made by representatives of the parties. For execution of each consultation a protocol shall be prepared and signed.

4.6. According to the bilaterally signed protocol under item 4.4. Some actions will be undertaken by the management of the parties to clarify the order, manner and terms of payment of the due compensations and an agreement will be signed as well.

4.7. Claims for compensations for cases subject to compensation by Se NRIC occurred before signing of the methodology and **not submitted** before signing of the methodology shall be considered according to the order and manner described in the present item 4 and the term under item 4.1. Is until 31 October 2018.

4.8. Claims for compensations for cases subject to compensation by SE NRIC occurred before signing of the methodology and **submitted** before signing of the methodology, shall be examined according to the order and manner described in the present methodology and the term under item 4.4. is until 31 October 2018.

The present methodology shall be also applied in view of the RU registered as such ones after its effective date and after conclusion with the Infrastructure Manager of a Contract for access and use of the railway infrastructure.

The Methodology shall be published in the Network Statement.

The Methodology might be changed with the agreement of all parties.

The present methodology is signed in 16 copies, one for each party, consisting of 10 pages and it becomes effective from the date of its signing (date of signatures to be specified) by all RUs and by the Infrastructure Manager as well.

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