Partial Fleet Metering

DRAFT: 30 June 2016

1.   Proposed additions to the Traction Electricity Rules

Definitions to be added to paragraph 1:

"Derived Rate" shall mean:

(a)   for PFM Year 1, the rate calculated in accordance with paragraph [x.13]; and

(b)   for PFM Year 2 and subsequent PFM Years, the rate calculated in accordance with paragraph [x.14] or (in the case of a PFM Data Threshold Failure), determined in accordance with paragraph [x.17];

"Initial Opt-in Notice" has the meaning ascribed to it in paragraph [x.1];

"Initial PFM Rate" means, in respect of a particular Metered Train Operator, the first PFM Rate to take effect in respect of any of its PFM Fleets;

"Opt-in Notice" has the meaning ascribed to it in paragraph [x.1];

"Partial Fleet Metering" means the method of calculating the element of the Traction Electricity Charge relating to Unmetered Vehicles in a PFM Fleet using PFM Rates;

"PFM Data Threshold" has the meaning ascribed to it in paragraph [x.4(A)];

"PFM Data Threshold Failure" has the meaning ascribed to it in paragraph [x.16];

"PFM Effective Date" shall have the meaning ascribed to it in paragraph [x.8(A)];

"PFM Financial Spreadsheet" means the financial spreadsheet model for calculating the PFM Rate, as published on Network Rail's website from time to time;

"PFM Fleet" means a fleet of electric multiple units of the same vehicle type operating on the same Train Service Code, comprised partially of Metered Trains;

"PFM Qualification Threshold" has the meaning ascribed to it in paragraph [x.4(B)];

"PFM Rate" means a modelled traction electricity consumption rate (in kWh per electrified Train Mile) for Unmetered Vehicles within a PFM Fleet applicable for 13 Periods, calculated in accordance with paragraphs [x.12 to x.18] of these Traction Electricity Rules;

"PFM Rates List" means the document entitled the "PFM Rates List" published by Network Rail on its website and specifying PFM Rates, as updated from time to time in accordance with these Traction Electricity Rules;

"PFM Year" means, in respect of the PFM Rate for a particular PFM Fleet, each period of 13 (thirteen) consecutive Periods from the PFM Effective Date;

"**PFM Year 1**" means the first PFM Year following the PFM Effective Date, "**PFM Year 2**" means the second PFM Year following the PFM Effective Date and so on;

"**PFM Year 0**" means the period of 13 (thirteen) consecutive Periods up to and including the date on which the PFM Qualification Threshold was met;

"**Previous PFM Year**" means:

(a) for the purpose of calculating the first PFM Rate to apply in respect of a particular PFM Fleet following the issue of an Opt-in Notice, PFM Year 0; and

(b) for the purpose of calculating the PFM Rate to apply in respect of any other PFM Year, the immediately previous PFM Year;

"**Unmetered Vehicles**" means vehicles in a PFM Fleet which are not Metered Trains;

"**Percentage Loading Factor**" means the relevant factor that represents the relationship between electricity consumption and the number of electric multiple units in a train, applied to modelled consumption rates as applicable, as set out in the table in Appendix 6 of these Traction Electricity Rules;

Proposed additional paragraph to be added (paragraph numbering to be confirmed but paragraph [x] is proposed to be inserted into paragraph 14 of the Traction Electricity Rules):

"[x]. **Partial Fleet Metering**

Opting-in to Partial Fleet Metering

[x.1] A Metered Train Operator who operates a PFM Fleet may opt-in to Partial Fleet Metering in respect of such PFM Fleet at any time during a Relevant Year by giving written notice to Network Rail in accordance with paragraphs [x.1 to x.3] ("**Opt-in Notice**"). The first such notice issued by a Metered Train Operator shall be the "**Initial Opt-in Notice**" for that Metered Train Operator.

[x.2] The Opt-in Notice shall contain:

(A) a list of the PFM Fleet(s) in respect of which the Metered Train Operator reasonably considers that the PFM Qualification Threshold will be met, specifying in each case the relevant vehicle type and Train Service Code; and

(B) the date on which the Metered Train Operator reasonably considers that the PFM Qualification Threshold will be met for each PFM Fleet specified.

[x.3] The Opt-in Notice shall be provided to Network Rail no less than 90 (ninety) days prior to the date on which the Metered Train Operator reasonably considers that the PFM Qualification Threshold will be met for each relevant PFM Fleet specified in the Opt-in Notice, unless agreed otherwise with Network Rail.

PFM Data Threshold and PFM Qualification Threshold

[x.4] In respect of a particular PFM Fleet:

(A) the **PFM Data Threshold** shall be met in respect of a particular Period where the Metered Train Operator has provided to Network Rail metered Electricity Data for that PFM Fleet in respect of Journeys on no less than 20% of the total electrified Train Miles for that Period; and

(B)   the **PFM Qualification Threshold** shall be met where the PFM Data Threshold has been met for 13 (thirteen) consecutive Periods.

For the purpose of this paragraph [x.4], "metered Electricity Data" means Electricity Data from the Metered Trains in the relevant PFM Fleet which has been provided to Network Rail in accordance with these Traction Electricity Rules.

[x.5]   Metered Train Operators that opt-in to Partial Fleet Metering shall use reasonable endeavours to ensure that, in respect of the PFM Fleet(s) specified in the Opt-in Notice, those trains that are selected to be metered are representative of the PFM Fleet as a whole (including in respect of the usage of Regenerative Braking Systems).

Calculation and agreement or determination of PFM Rates

[x.6]   Following the receipt of an Opt-in Notice and once the PFM Qualification Threshold has been met in respect of the PFM Fleet(s) specified in the Opt-in Notice, Network Rail shall calculate the proposed PFM Rate for PFM Year 1 for each PFM Fleet specified in the Opt-in Notice in accordance with paragraphs [x.12] to [x.18].

[x.7]   Following the calculation by Network Rail of the proposed PFM Rate in respect of a particular PFM Fleet and PFM Year, Network Rail shall promptly notify the Metered Train Operator in writing of the proposed PFM Rate for the Metered Train Operator to agree or dispute as follows:

(A) If the Metered Train Operator disputes Network Rail's calculation of the proposed PFM Rate, then, within 28 (twenty eight) days of that notification, the Metered Train Operator shall refer the matter to ORR for determination, failing which it shall be deemed to agree to Network Rail's calculation.

(B) If the Metered Train Operator agrees (or is deemed to agree) with Network Rail's calculation of the proposed PFM Rate, Network Rail shall promptly request ORR's consent to the proposed PFM Rate (and shall provide a copy of its request to the Metered Train Operator). ORR may then give its consent, withhold its consent or determine the PFM Rate as it considers appropriate.

In either case (whether the referral to ORR is for consent or determination), the parties shall, within such timescales as ORR may reasonably specify, furnish ORR with such information and evidence as ORR shall reasonably require. Such information and evidence may include details of PFM Fleets operated by the Metered Train Operator which meet the Qualification Threshold but in respect of which the Metered Train Operator has not issued an Opt-in Notice. If a party fails to furnish such information and evidence within the specified timescale, ORR shall be entitled to withhold its consent, or, as the case may be, determine the matter without that information and evidence and the party in default shall have no grounds for complaint in that respect.

PFM Effective Date (respecting the year-end reconciliation provisions)

[x.8]   Once ORR has consented to or determined the PFM Rate in respect of a particular PFM Fleet and PFM Year, and provided that the Metered Train Operator's track access contract includes provision for PFM Rates to apply, such PFM Rate shall apply for 13 (thirteen) consecutive Periods from the date specified by ORR in its consent or determination, and Network Rail shall update the PFM Rates List accordingly within 28 (twenty-eight) days of such consent or determination. Provided always that it shall not

be a date falling prior to the start of the Relevant Year in which ORR consented to or determined such PFM Rate, and unless ORR specifies otherwise, the date shall be:

(A)   in the case of the Initial PFM Rate for a particular Metered Train Operator, the first day of the Period immediately following the Period in which the PFM Qualification Threshold was met following the issue of the Initial Opt-in Notice, unless such day would fall in January, February or March, in which case the date shall be the following 1 April (the date determined in accordance with this paragraph being the "**PFM Effective Date**"); and

(B)   in the case of annual revisions to an existing PFM Rate and any new PFM Rates for a particular Metered Train Operator, the relevant anniversary of the PFM Effective Date applicable to such Metered Train Operator.

[x.9]   Each PFM Rate shall be revised annually in accordance with paragraph [x.10].

[x.10]   Following the end of each PFM Year, Network Rail shall promptly calculate the proposed revised PFM Rate for the relevant PFM Fleet in accordance with paragraphs [x.12] to [x.18]. Following such calculation, the revised PFM Rate shall be agreed or determined in accordance with paragraphs [x.7] to [x.8].

No reversion to modelled rate

[x.11]   Following the PFM Effective Date in respect of a particular PFM Fleet, PFM Rates shall apply in respect of such PFM Fleet unless and until all Unmetered Vehicles in such PFM Fleet become Metered Trains (at which point the PFM Fleet shall cease to be a PFM Fleet).

PFM Rate calculation methodology - general

[x.12]   Each PFM Rate shall be calculated using the PFM Financial Spreadsheet, in accordance with the methodology set out in paragraphs [x.13] to [x.16]. In the event of any conflict or inconsistency between the PFM Financial Spreadsheet and these Traction Electricity Rules, these Traction Electricity Rules shall take precedence.

Creation of a kWh 'per Train Mile' Derived Rate

PFM Year 1

[x.13]   A derived electricity consumption rate shall be calculated for PFM Year 1 by summing the relevant consumption data from PFM Year 0 and then converting it into the relevant format for modelled usage (kWh per Train Mile) using the formula set out below:

Derived Rate$_{iT1}$ $= \dfrac{K_{i0}}{M_{i0}} \bullet \dfrac{1}{(MU_{1_{i0}} + MU_{2_{i0}} + \cdots + MU_{n_{i0}})}$

where, in respect of a particular PFM Fleet:

Derived Rate$_{i1}$ means the derived electricity consumption rate in kWh / Train Mile, for train category I and for one electric multiple unit in PFM Year 1;

K_{i0} means the sum of the relevant consumption data for train category i in PFM Year 0 calculated using the formula below:

K_{i0} $=$ Σ $[P_{i0} \bullet (1+\lambda_{gi0}) - RGB_{i0}] \bullet N_{v0}$

Where

Σ   means the summation across PFM Year 0 as appropriate;

P_{i0} (the relevant metered data in kWh) means, for train category i and in PFM Year 0, the sum of Data Records (in kWh) for Journey Consumption Data that is Metered Data including Infill Values;

λ_{gi0} means the Network Rail Distribution System Loss Factor for train category i and in Geographic Area g as set out in Appendix 3 of these Traction Electricity Rules as applicable in PFM Year 0;

RGB_{i0} (the relevant regenerative braking data in kWh) means for train category i and in PFM Year 0, the sum of Data Records (in kWh) for Regenerative Braking Data that is Metered Data including Infill Values;

N_{v0} means the Non-Journey adjustment factor for PFM Year 0 and train category i calculated using the formula below:

$$N_{v0} = \frac{\Sigma T_{v0}}{\Sigma V_{v0}}$$

Where

Σ   means the summation across PFM Year 0;

T_{v0} means the relevant metered data, calculated using the formula below;

$$T_{v0} = \Sigma \ [(P_{vJ0} \bullet (1+ \lambda_{gvT0}) - RGB_{vJ0}) + (P_{vN0} \bullet (1+ \lambda_{gvT0}) - RGB_{vN0})]$$

Where

Σ   means the summation across PFM Year 0 and relevant Train Service Codes as appropriate;

P_{vJ0} means the sum of Data Records (in kWh) for Journey Consumption Data that is Metered Data, including Infill Values, for vehicle class V;

λ_{gv0} means the Network Rail Distribution System Loss Factor for vehicle class V and in Geographic Area g as set out in Appendix 3 of these Traction Electricity Rules as applicable in PFM Year 0;

RGB_{vJ0} means for vehicle class V, the sum of Data Records (in kWh) for Regenerative Braking Data that is Journey Consumption Data and is Metered

Data including Infill Values;

P_{vN0} means the sum of Data Records (in kWh) for Non-Journey Consumption Data that is Metered Data including Infill Values, for vehicle class V;

RGB_{vN0} means for vehicle class V, the sum of Data Records (in kWh) for Regenerative Braking Data that is Non-Journey Consumption Data and is Metered Data including Infill Values;

V_{v0} means the relevant metered data, calculated using the formula below;

$$V_{v0} = \Sigma \; [(P_{vJ0} \bullet (1 + \lambda_{gvT0}) - RGB_{vJ0})]$$

Where

Σ means the summation across PFM Year 0 and relevant Train Service Codes as appropriate;

P_{vJ0} means the sum of Data Records (in kWh) for Journey Consumption Data that is Metered Data, including Infill Values, for vehicle class V;

λ_{gv0} means the Network Rail Distribution System Loss Factor for vehicle class V and in Geographic Area g as set out in Appendix 3 of these Traction Electricity Rules as applicable in PFM Year 0; and

RGB_{vJ0} means for vehicle class V, the sum of Data Records (in kWh) for Regenerative Braking Data that is Journey Consumption Data and is Metered Data including Infill Values;

M_{i0} means the total electrified Train Miles by Metered Trains for train category i in PFM Year 0; and

$MU_{x_{i0}}$ means the Percentage Loading Factor for MU_{x_i} multiplied by the total metered Train Miles by MU_{x_i} and divided by the total metered Train Miles of the PFM Fleet for train category i in PFM Year 0 (where x is a positive number which denotes the number of electric multiple units), as set out in the formula below:

$$MU_{x_{i0}} = PLF_{x_{i0}} \bullet \frac{M_{x_{i0}}}{M_{i0}}$$

Where

$PLF_{x_{i0}}$ means the relevant Percentage Loading Factor in PFM Year 0 as set out in Appendix 6 of these Traction Electricity Rules;

$M_{x_{i0}}$ means the total electrified Train Miles by Metered Trains consisting of x number of electric multiple units for train category i in PFM Year 0; and

M_{i0} means the total electrified Train Miles by Metered Trains for train category i in PFM Year 0.

PFM Year 2 and subsequent PFM Years

[x.14]   A derived electricity consumption rate shall be calculated for PFM Year 2 and each subsequent PFM Year (relevant PFM Year y) by summing the relevant consumption data from PFM Year y-1 and then converting it into the relevant format for modelled usage (kWh per Train Mile) using the formula set out below:

Derived Rate$_{iy}$ $$= \frac{K_{iy-1}}{M_{iy-1}} \bullet \frac{1}{(MU_{1_{iy-1}} + MU_{2_{iy-1}} + \cdots + MU_{n_{iy-1}})}$$

where, in respect of a particular PFM Fleet:

Derived Rate$_{iy}$ means the derived electricity consumption rate in kWh / Train Mile, for train category i and for one electric multiple unit in PFM Year y;

K_{iy-1} means the sum of the relevant consumption data for train category i in PFM Year y-1 calculated using the formula below:

K_{iy-1} = Σ [$P_{iy-1} \bullet (1+\lambda_{giy-1}) - RGB_{iy-1}$] $\bullet N_{vy-1}$

Where

Σ means the summation across PFM Year y-1 as appropriate;

P_{iy-1} (the relevant metered data in kWh) means, for train category i and in PFM Year y-1, the sum of Data Records (in kWh) for Journey Consumption Data that is Metered Data including Infill Values;

λ_{giy-1} means the Network Rail Distribution System Loss Factor for train category i and in Geographic Area g as set out in Appendix 3 of these Traction Electricity Rules as applicable in PFM Year y-1;

RGB_{iy-1} (the relevant regenerative braking data in kWh) means for train category i and in PFM Year y-1, the sum of Data Records (in kWh) for Regenerative Braking Data that is Metered Data including Infill Values;

N_{vy-1} means the Non-Journey adjustment factor for PFM Year y-1 and train category i calculated using the formula below:

N_{vy-1} = $\dfrac{\Sigma T_{vy-1}}{\Sigma V_{vy-1}}$

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Where

Σ means the summation across PFM Year y-1;

T_{vy-1} means the relevant metered data, calculated using the formula below;

$T_{vy-1} = \Sigma \; [(P_{vJy-1} \bullet (1+ \lambda_{gvy-1}) - RGB_{vJy-1}) + (P_{vNy-1} \bullet (1+ \lambda_{gvy-1}) - RGB_{vNy-1})]$

Where

Σ means the summation across PFM Year y-1 and relevant Train Service Codes as appropriate;

P_{vJy-1} means the sum of Data Records (in kWh) for Journey Consumption Data that is Metered Data, including Infill Values, for vehicle class V;

λ_{gvy-1} means the Network Rail Distribution System Loss Factor for vehicle class V and in Geographic Area g as set out in Appendix 3 of these Traction Electricity Rules as applicable in PFM Year y-1;

RGB_{vJy-1} means for vehicle class V, the sum of Data Records (in kWh) for Regenerative Braking Data that is Journey Consumption Data and is Metered Data including Infill Values;

P_{vNy-1} means the sum of Data Records (in kWh) for Non-Journey Consumption Data that is Metered Data including Infill Values, for vehicle class V;

RGB_{vNy-1} means for vehicle class V, the sum of Data Records (in kWh) for Regenerative Braking Data that is Non-Journey Consumption Data and is Metered Data including Infill Values;

V_{vy-1} means the relevant metered data, calculated using the formula below;

$V_{vy-1} \quad = \Sigma \; [(P_{vJy-1} \bullet (1+ \lambda_{gvy-1}) - RGB_{vJy-1})]$

Where

Σ means the summation across PFM Year y-1 and relevant Train Service Codes as appropriate;

P_{vJy-1} means the sum of Data Records (in kWh) for Journey Consumption Data that is Metered Data, including Infill Values, for vehicle class V;

λ_{gvTy-1} means the Network Rail Distribution System Loss Factor for vehicle class V and in Geographic Area

g as set out in Appendix 3 of these Traction Electricity Rules as applicable in PFM Year y-1; and

RGB_{vJy-1} means for vehicle class V, the sum of Data Records (in kWh) for Regenerative Braking Data that is Journey Consumption Data and is Metered Data including Infill Values;

M_{iy-1} means the total electrified Train Miles by Metered Trains for train category i in PFM Year y-1; and

$MU_{x_{iy-1}}$ means the Percentage Loading Factor for MU_{x_i} multiplied by the total metered Train Miles by MU_{x_i} and divided by the total metered Train Miles of the PFM Fleet for train category i in PFM Year y-1 (where x is a positive number which denotes the number of electric multiple units), as set out in the formula below:

$$MU_{x_{iy-1}} \quad = \text{PLF}_{x_{iy-1}} \bullet \frac{M_{x_{iy-1}}}{M_{iy-1}}$$

Where

$\text{PLF}_{x_{iy-1}}$ means the relevant Percentage Loading Factor in PFM Year y-1 as set out in Appendix 6 of these Traction Electricity Rules;

$M_{x_{iy-1}}$ means the total electrified Train Miles by Metered Trains consisting of x number of electric multiple units for train category i in PFM Year y-1; and

M_{iy-1} means the total electrified Train Miles by Metered Trains for train category i in PFM Year y-1.

Failure to meet PFM Data Threshold – use of PFM Substitute Data

[x.15] Subject to paragraphs [x.16 and x.17], for the purpose of calculating the Derived Rate for PFM Year y, if the PFM Data Threshold was not met in any Period in PFM Year y-1, the data for such Period shall be substituted with the full set of data from the same Period in the Previous PFM Year (PFM Year y-2) to calculate the value of K_{iTy-1}. If the PFM Data Threshold was not met in the Previous PFM Year, data from PFM Year y-3 shall be used (and so on).

Sustained failure to meet PFM Data Threshold

[x.16] Where the PFM Data Threshold is not met for a particular PFM Fleet:

(A)   for 3 (three) consecutive Periods in a PFM Year; or

(B)   for 4 (four) non-consecutive Periods in a PFM Year,

this shall be a "**PFM Data Threshold Failure**" in respect of such PFM Fleet.

[x.17] If there was a PFM Data Threshold Failure for a particular PFM Fleet in PFM Year y-1 then the Derived Rate due to be calculated for such PFM Fleet for PFM Year y shall be equal to the higher of:

(A) the most recently established PFM Rate for such PFM Fleet; and

(B) the modelled consumption rate applicable for vehicles of the same type and same Train Service Code as those in such PFM Fleet, as shown in the Traction Electricity Modelled Consumption Rates List. Where the Metered Train Operator operates a Regenerative Braking System, such modelled consumption rate shall be reduced by the Regenerative Braking Discount determined in accordance with paragraph [15.1(B)].

Application of weighting structure to produce PFM Rate

[x.18] A weighting structure shall be applied to the Derived Rates to create the PFM Rate for the relevant PFM Year, as follows.

where, in respect of a particular PFM Fleet:

PFM Rate$_y$ means the PFM Rate for PFM Year y.

N$_y$ means the Derived Rate for PFM Year y.

PFM Year 1 (y = 1)

$$\text{PFM Rate}_1 = N_1$$

PFM Year 2 (y = 2)

$$\text{PFM Rate}_2 = \frac{2N_2}{3} + \frac{N_1}{3}$$

PFM Year 3 (y = 3)

$$\text{PFM Rate}_3 = \frac{N_3}{2} + \frac{N_2}{3} + \frac{N_1}{6}$$

PFM Year 4 and subsequent PFM Years

$$\text{PFM Rate}_y = \frac{N_y}{2} + \frac{N_{y-1}}{3} + \frac{N_{y-2}}{6}$$

Additional PFM Fleets

[x.19] A Metered Train Operator who has issued an Initial Opt-in Notice may issue further Opt-in Notices in respect of additional PFM Fleets at any time in any Relevant Year.

[x.20] Notwithstanding the date on which a Metered Train Operator issues any further Opt-in Notice in respect of additional PFM Fleets, the PFM Rates in respect of such additional PFM Fleets shall be calculated at the same time as all other PFM Rates are calculated or revised for that Metered Train Operator in accordance with paragraph [x.10] and the PFM Rates for such additional PFM Fleets shall take effect in accordance with paragraph [x.8(B)].

PFM information

[x.21] Network Rail shall maintain and publish on its website details of Metered Train Operators who have opted-in to Partial Fleet Metering, including in respect of each such Metered Train Operator:

(A) PFM Rates for the current PFM Year and all previous PFM Years;

(B) details of the ESTAs in which PFM Rates are applied;

(C) details of whether the PFM Data Threshold has been met in each Period for each PFM Rate; and

(D) details of the anniversary of the PFM Effective Date.

[x.22] Network Rail shall maintain on its website the PFM Financial Spreadsheet along with an example of how it works, using notional data.

Updates to PFM Rates and the PFM Rates List

[x.23] PFM Rates shall be calculated and updated, and the PFM Rates List updated by Network Rail, in accordance with these Traction Electricity Rules.

[x.24] Following ORR's consent or determination of any PFM Rate in accordance with these Traction Electricity Rules, Network Rail shall within 28 (twenty-eight) days of such consent or determination issue any adjusting invoice or credit note to the Train Operator.

[x.25] Network Rail shall be entitled to delete redundant entries in the PFM Rates List and make amendments to reflect Train Operator name changes.

2. **Additional amendments to the Traction Electricity Rules (TERs)**

2.1 We propose that the current structure of the TERs is amended in order to incorporate the provisions dealing with Partial Fleet Metering and to create a more logical flow to the provisions.

2.2 Suggested structure:

2.2.1 provisions relating to metering (ie. current paragraphs 1 – 7, 10, and 13 – 17);

2.2.2 provisions relating to partial fleet metering (addition of the new provisions set out in paragraphs [x.1] to [x.22] of this document);

2.2.3 provisions relevant to calculation of regenerative braking (current paragraph 8), amended to clarify that the regenerative braking discount does not apply to PFM Rates (because the rate is calculated net of regenerative braking);

2.2.4 general provisions (current paragraphs 9 and 11-12);

2.2.5 wash-up provisions and provisions relating to procurement and actual cost of traction electricity (current paragraphs 18 -20);

2.2.6 Dispute resolution (current paragraph 21).

2.3 The explanatory note on the front cover would also be updated.

2.4 ORR has indicated that it would be content in principle with a re-structuring along these lines. The numbering of the wash-up paragraph (18) would need to remain unchanged as it is referred to in the track access contracts.

2.5 In order to incorporate the PFM drafting, a small number of consequential changes are required to existing drafting of the TERs, including:

2.5.1 amendments to the definition of "Ci" in the wash-up formula in paragraph 18.2;

2.5.2 amendments to the definition of "train category i";

2.5.3 the inclusion of an obligation on Network Rail to retain metered data for 7 years (reflecting footnote 7 of the PFM Policy Document dated April 2015); and

2.5.4 inclusion of a new Appendix 6 to incorporate the table setting out the Percentage Loading Factors.

See amendments marked-up on the draft circulated in conjunction with this paper.

2.6 The definition of "Office of Rail Regulation" in paragraph 1 should be changed to:

"**Office of Rail and Road**" has the meaning ascribed to it in Section 15 of the Railways and Transport Safety Act 2003, and "ORR" shall be construed accordingly;"

3. Proposed amendments to Schedule 7 of the Track Access Contract to provide for billing using PFM Rates (assumes paragraph 4 of Schedule 7 is in Model Clauses format)

[DRAFT]

Proposed amendments to paragraph 1 (additional wording double underlined):

"**PFM Rate**" has the meaning ascribed to it in the Traction Electricity Rules;

"**PFM Rates List**" has the meaning ascribed to it in paragraph 1 of the Traction Electricity Rules;

"**train category i**" means train category i as identified in the relevant section of the Traction Electricity Modelled Consumption Rates List or PFM Rates List, being either:

    (a)   where there is no PFM Rate for a particular passenger vehicle type operating on a particular Train Service Code:

        (i)   where there is a modelled consumption rate for a particular passenger vehicle type operating on a particular Train Service Code, the relevant category set out in the table entitled "Passenger Traction Electricity Modelled Consumption Rates for CP5"; or

        (ii)   in respect of any other passenger vehicle type not referred to in paragraph (a)(i), the relevant category set out in the table entitled "Generic Traction Electricity Modelled Consumption Rates for CP5"; or

    (b)   where there is a PFM Rate for a particular passenger vehicle type operating on a particular Train Service Code, the relevant category set out in the PFM Rates List;

Proposed amendments to paragraph 4.1.2 (additional wording double underlined)

"Calculation of modelled consumption (including using PFM Rates)

4.1.2 E_{tmo} is derived from the following formula:

$$E_{tmo} = \Sigma\ E_{tmog}$$

where:

Σ means the summation across all Geographic Areas g, as appropriate;

E_{tmog} is derived from the following formula:

$$E_{tmog} = \Sigma\ C_i \bullet EF_{gjt} \bullet UE_{igjt}$$

where:

Σ means the summation across all relevant train categories i

(determined in accordance with paragraph 4.1.1 above) and tariff bands j, as appropriate;

C_i means the modelled consumption rate <u>or PFM Rate, as appropriate</u>:

(a) in kWh per electrified Train Mile in relation to passenger electric multiple units (using the rate for the relevant number of units); and

(b) in kWh per electrified kgtm in relation to locomotive-hauled units and all freight traffic,

for train category i shown in the Traction Electricity Modelled Consumption Rates List taking into account any Regenerative Braking Discount applied in accordance with the Traction Electricity Rules <u>or, if a PFM Rate applies in accordance with the Traction Electricity Rules, the PFM Rates List</u>;

EF_{gjt} means the charge for traction current (in pence per kWh) consumed by railway vehicles operated by or on behalf of the Train Operator in Geographic Area g, in tariff band j and in Relevant Year t as agreed or determined pursuant to paragraph 19 of the Traction Electricity Rules; and

UE_{igjt} means the actual volume of usage (in electrified Vehicle Miles in relation to passenger electric multiple units or electrified kgtm in relation to locomotive-hauled units and all freight traffic), if any, of trains operated by or on behalf of the Train Operator in train category i, in Geographic Area g, in tariff band j and in Relevant Year t, pursuant to this contract."

Proposed amendments to paragraph 10.1(c) (additional wording double underlined):

"10.1(c) Any invoice issued by Network Rail under <u>either</u> paragraph <u>[x.24] or</u> 18.5 of the Traction Electricity Rules (relating to modelled and actual rates of electricity consumption) shall be payable by the Train Operator within 21 (twenty-one) days of the relevant invoice date."