PR18: Electric Current for Traction (EC4T) – Final impact assessment on keeping the loss incentive mechanism

June 2017

This impact assessment supports conclusions following our December 2016 consultation 'Improving incentives on Network Rail and train operators: A consultation on changes to charges and contractual incentives' (henceforth referred to as the 'consultation').

Policy	Charges - Electric current for traction (EC4T)
Policy area	EC4T loss incentive mechanism
Background	The loss incentive mechanism (referred to henceforth as the "mechanism") was introduced in PR13 to incentivise Network Rail to minimise transmission losses and manage the financial risk to modelled operators that the DSLF (Distribution System Loss Factor) is incorrect. The DSLF is the uplift that is charged on metered services to reflect transmission losses associated with those services. At the end of the year, there is a discrepancy between the volumes of electricity consumed and the volumes of electricity supplied into the system. This may be due to a) errors in modelled rates and b) errors in the DSLF. For each billing area (ESTA), the end of year volume reconciliation shares this difference between modelled operators and Network Rail. During the volume reconciliation process, the so-called EC4T loss incentive mechanism allocates to Network Rail a proportion of the difference to reflect the proportion of costs for which it has control through efficient management of transmission losses. The mechanism protects modelled operators from errors in the DSLF, while allowing metered operators reduced financial risk by being outside the volume reconciliation.
Which of the PR18 outcomes does this	Outcome: The network is better used Description of outcome: Network Rail and operators find ways to improve network use

charge/incentive deliver against?	
Problem under consideration with the current charge/incentive Incentive properties may be weak in the short-term: interventions aimed at reducing transmission losses are expensive and may not generate a positive business case for Network Rail to undertake the required investment, especially in the short-term. Operators (and Network Rail) confirmed that the mechanism has only had a moderate influence on their decision to adopt on-train metering. The mechanism has had the unintended consequence of moving a small amount of money from operators to Network Rail.	
What is the scale of the issue & who is impacted? This issue affects both Network Rail and modelled operators. Because the current modelled consumption rates as well as the uplifts charged to metered operators are too high, Network Rail ends up billing operators for more power than it bought from EDF. Consequently, during the end of year volume wash-up, Network Rail has to pay back to operators participating in the wash-up. In the process, Network Rail receives a lower volume than it would receive if the mechanism did not exist. This translates into Network Rail retaining an unearned amount of money each year (i.e. £2.7m in 14/15 and £2.0m in 2015/16). This is a consequence of inaccuracies in estimating the modelled consumption rates and metered operators' uplift due to the currently too high distribution system loss factor (DSLF). After the mechanism was introduced, Network Rail undertook a study to assess how it can reduce transmission losses and to review and improve the methodology for EC4T transmission loss calculations. Although Network Rail has concluded that the most effective interventions are very expensive and the benefits may not justify the investment, Network Rail has also come up with a few initiatives that it believes could help improve energy consumption and losses. It is important that these efforts continue.	
Options to be considered	
Option 0: Do nothing	• This option is to keep the current loss incentive mechanism
Option 1: Abolish the mechanism, so that the volume wash-up is shared in proportion to modelled consumption	• Under this option, modelled operators and Network Rail would participate in the year-end volume wash-up. Abolishing the mechanism means that no additional volume would be allocated to Network Rail
Option 2: Abolish the mechanism but have a wash-up that is allocated in proportion to consumption, both metered and modelled.	• Under this option, the year-end wash up would involve modelled operators, metered operators as well as Network Rail
Option 3: Abolish the mechanism and use the level of metering to	• Under this option, the wash-up may involve both metered and modelled operators only in ESTAs

determine who participates in the wash-up	with high levels of metering (more than 50% metered for instance). In those ESTAs that are less than 50% metered the wash-up would involve modelled operators and Network Rail as in option 1 above
Assessment of options	
Assessment of option 1 (Abolish the mechanism, so that the volume wash-up is shared in proportion to modelled consumption)	• In geographic billing areas ('ESTAs') with high proportions of metered consumption, this option would result on occasion in volume reconciliation for modelled services being disproportionate to the electricity consumed. It is not clear that this is a tenable arrangement. • Efficient management of transmission losses is a benefit to the whole industry. Abolishing the mechanism removes the incentive to do this. • The effect of this incentive may take a number of years to materialise. We are encouraged that Network Rail has undertaken studies to find better ways to efficiently manage transmission losses. These include initiatives to better use the network and to review the methodologies used to calculate the DSLF. These efforts have to be encouraged to ensure the EC4T charge reflects the cost. Abolishing the mechanism may send a wrong signal to Network Rail who may decide to abandon them. • This would solve the issue of the money transferred to Network Rail as the balance will be shared among operators only. Note that the DSLF is being recalibrated in CP6, and hence, in the absence of this option, this issue would be alleviated to some degree.
Assessment of option 2 (Abolish the mechanism but have a wash-up that is allocated in proportion to consumption, both metered and modelled)	• The impacts are the same as option 1 except that: o it would not result in disproportionate bills to modelled operators; but o it would reduce metered operators' incentives to meter because they would not be exempt from the year-end financial risk associated with the volume wash-up.
Assessment of option 3 (Abolish the mechanism and use the level of metering to determine who participates in the wash-up)	• The impacts are the same as option 2 except that: o the reduction in incentives to meter would be less; and o it would be difficult to administer (a similar arrangement was in place on a temporary basis in CP4, and was managed manually).

Recommendation	• To keep the current arrangements i.e. the volume reconciliation involving the loss incentive mechanism
Next Steps • To improve the accuracy of the DSLF for each ESTA as part of the PR18 recalibration.	

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