**RSSB2755 - T1160 - Decarbonisation and air quality improvement**

Tender Question and Answer Document

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| **Supplier Question 1**The ITT is quite descriptive as to the scope/process for this piece of work. I understand that this allows fair comparison of all the bids and is a very effective way of tendering fairly. However, we believe that we would like to offer an approach that differs a little from that defined in the ITT, but would provide a more effective delivery into the project.Is there someone who is leading this internally at the RSSB that we could have a chat to about an alternative approach and whether it would be considered for the bid? I don’t know whether you will be leading of this is one of your colleagues. |
| **RSSB Answer 1**The submissions received will be evaluated against the criteria and scope defined in the I.T.T., as such tenderers should submit a cost for the work as outlined in the I.T.T.Should a tenderer submit any additional information where the tenderer considers an expanded scope to achieve additional value, tenderers are encouraged to do so as a costed option and this may be reviewed once the formal evaluation and subsequent contract awarded. |
| **Supplier Question 2**Work Package 2.2 suggests a model will be made available from project T1145. Please can you supply the following information:* Which platform supports the model? Excel or others?
* Tailoring the model to the freight sector would involve working only on the inputs or also on the model itself?
* Does it deliver all the outputs required for the impact evaluation (emissions, capital and operation costs)? At which level of disaggregation?
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| **RSSB Answer 2**The model will be developed in Excel and is expected to be a high level impact assessment for the railway as a whole. The outputs will present the Carbon impact (not AQ) of different decisions, along with cost assessments (capital and operational). The model being developed will include freight within the functionality, but has not been specifically tailored to freight, and it will not include all of the elements that would be important for the assessment being made in T1160. As a consequence the adaptation for T1160 will require both adjustments to input data, and to the model itself. The model is expected to be completed in January 2018. A high level specification for the T1145 model has been uploaded to the tender documents area.Please also refer to the PDF document now additionally attached to the Contract Notice on Contracts Finder. |
| **Supplier Question 3**The ITT says each CV should be one page could this be two pages?   |
| **RSSB Answer 3**Our preference is for 1 page CVs. Tenderers submitting 2 page CVs will not be excluded on that basis. |
| **Supplier Question 4**) Regarding WP2.2 and the data that will be provided, can you clarify the dimensions of the economic model from T1145 i.e. * + are all the technologies in scope for T1160 included?
	+ What is its time horizon?
	+ What are the freight technology segments included?
	+ Does it compare the cost & emissions of a single train across technologies, or does it compare the cost of the entire fleet across different fleet composition scenarios?
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| **RSSB Answer 4**The economic model is expected to cover assessments of Electric, Diesel, Hydrogen, Battery, Hybrid and Bi-mode operations. The time horizon is 50 years, with interim assessments being drawn, including 2040. Freight modelling is expected to be relatively light within the model and focussed across the freight fleet as a whole. The comparison is expected to be across collections of journeys, broken into routes. Further detail will be released in the early new year following the delivery of the model template.  |
| **Supplier Question 5**) Regarding WP2.2 and the expected outputs, we understand the expected model should be an improved version of the T1145 model. Can you confirm what dimensions are missing/ are expected to be added? E.g. refined train segmentation, time horizon extension etc. |
| **RSSB Answer 5**The model developed in T1145 has been primarily focussed on the passenger segment. Freight use is considered but has a comparatively coarse analysis. The activity required in T1160 will be to augment the model for the freight sector, undertaking a more detailed level assessment based on the analysis in the first phase of the project. This is expected to include greater consideration of the operational models to facilitate decarbonisation and understanding the impact (positive and negative) from the changes. This is expected to require the inclusion of more data sets (defined by the T1160 project) to facilitate the analysis. The focus on refined segmentation, adjusted operational models, new technology, revised time horizons etc should be considered as options within the proposals, but decided within the delivery of the project. |
| **Supplier Question 6**Section 8.6 of the ITT references the following:  “*The following shall constitute a failure to evidence satisfactory delivery of the requirement(s) of the procurement and will automatically disqualify the Tenderer:*1. *A grade of zero (0) in any of the evaluated technical/quality questions in Section D of Schedule One (a) of Part B of the ITT before the weightings are applied; or*
2. *a grade of one (1) in more than one of the evaluated technical/quality questions in Section D of Schedule One (a) of Part B of the ITT before the weightings are applied”*

However, there does not appear to be a Section D or Schedule One or Part B.  Could you therefore please clarify what is meant?   |
| **RSSB Answer 6****Section D refers to any of the “Award” questions within the I.T.T** |
| **Supplier Question 7**Sections 7 and 8 of the ITT refers to the award criteria.  Could you provide information on where the response to Section 7 should be placed in the bid?  For example, ahead of the bid text (Section 8)?  Can you confirm that the number of pages allowed for bid text provided in Section 7 are in addition to the number of pages allowed for bid text provided in Section 8.  I.e. there is a total of 19 pages plus project costing allowed.  |
| **RSSB Answer 7**RSSB is unable to advise on how a tenderer should or should not structure their tender response.  |
| **RSS Note On Publication of T1145 Results**RSSB will not be able to release the full model prior to the closing of the tender period as the scope is being adjusted to align with the current industry thinking and time frames. However, it is hoped that the information that follows provides additional certainty over what the model includes and delivers. The T1145 model is an economic modelling tool developed in excel and is principally focussed on TOC data. The specific intent of the tool is to be flexible to enable different scenarios to be modelled based on the underlying model. The model is not yet complete, however the structure remains as described in previous communications.  FOC operations would be expected to be able to utilise the same calculations for the outputs, with adjustments being required for adjusted operating patterns and use. The following information is as presented in the current draft version of the tool, it is subject to change as development continues and feedback from stakeholders is received, but can be considered a baseline position for the purposes of bidding for T1160. * Input data (baseline data is included)
	+ Rolling Stock
		- User identifies each class of rolling stock to be used, and relevant characteristics.
		- Table Headings
			* ID
			* Vehicle Class
			* Name
			* RS Category
			* Diesel consumption (litres/km)
			* Electricity consumption (kWh/km
			* Hydrogen consumption (litres/km)
			* Maintenance costs
			* CO2e Emissions (kgCO2e / km)
			* Build/in-service year
	+ Fleets
		- User defines a set of 'fleets' - groups of vehicles to be assigned to routes. A fleet may contain vehicles of more than one class.
		- Table Headings
			* ID
			* Fleet Name
			* RS Category
			* Franchise
			* Total vehicles
			* Number of vehicles (by class)
	+ Segments
		- Electrification status of each track segment, by year.
		- Table Headings
			* Segment ID
			* Segment Identifier
			* Length (km)
			* Currently electrified?
			* Electrification year
			* Segment Electrified Miles
			* Segment Non Electrified Miles
	+ Route Segments
		- User defines a set of routes, made up of a sequence of track segments.
		- Table Headings
			* Route ID
			* Route    Franchise
			* Track segments
	+ Route Fleets
		- Against each route, user assigns one of the fleets defined in the 'Fleets' sheet, for each year.
		- Table Headings
			* ID
			* Route
			* Franchise
	+ Route Journeys
		- Against each route, user specifies the number of vehicle journeys per day, for each year.
		- Table Headings
			* ID
			* Route
			* Franchise
* Output data
	+ Emissions
		- Outputs the total emissions produced by each franchise, each year.
	+ Fuel consumption
		- Outputs fuel of each type consumed by each TOC and each year.
	+ Fuel costs
		- Outputs the cost of fuel of each type consumed by each TOC and each year.
	+ Maintenance costs
		- Outputs the cost of maintenance for each TOC and each year.
	+ Infrastructure costs
		- Outputs the cost of infrastructure development each year.
	+ Total costs
		- Outputs the total and cumulative total cost associated with the scheme for each year
* Modelling assumptions
	+ The model does not account for differences in journey times/lengths at different times of the day.
	+ Changing the fuel type does not affect the services.
	+ Model is agnostic as to whether any demand increase is realised through increases in train length or number of services.
	+ All calculations are in terms of train kilometres rather than passenger kilometres
	+ Assumed no additional fuel type limitations such as lack of electric power sources at a rural location.
	+ The average number of carriages = train miles divided by the vehicle miles.
	+ Electric trains do not 'Disconnect' from the depot
	+ The expected emissions rate of a fleet can be estimated by averaging the emissions rate of all trains within the fleet.
	+ Journey length is considered to have a linear relationship with the emissions rate.
	+ Assume that route geography does not affect train characteristics (such as gradient).
	+ The expected vehicle lifetime is 35-40 years
	+ The Electric Current is assumed to be AC
	+ Segments are considered to be electrified from the beginning of the year for the whole year.
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