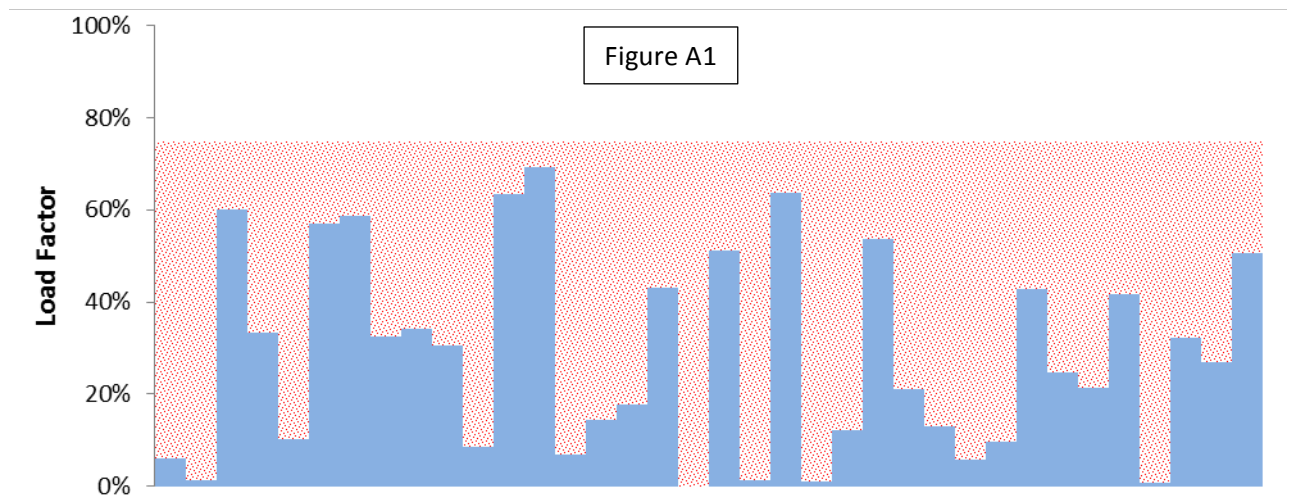


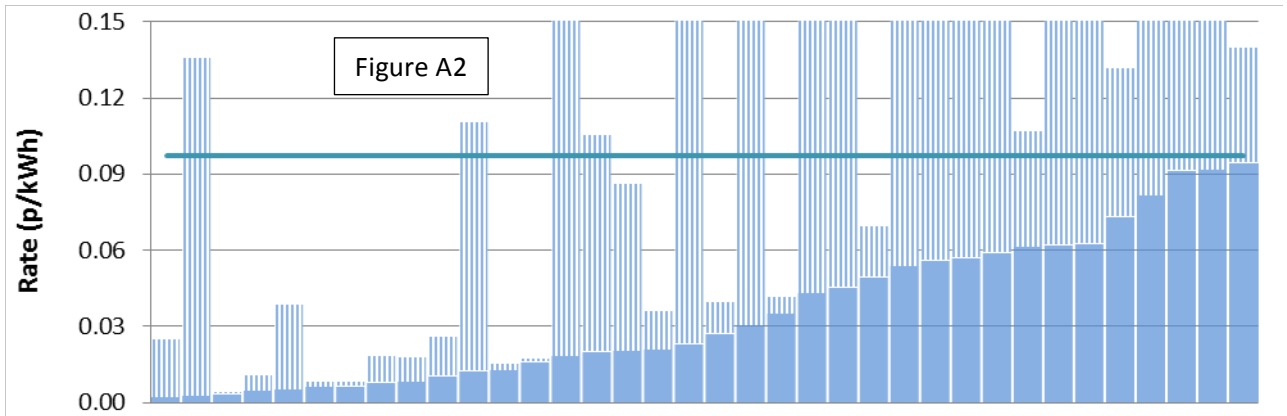
Inefficient Bypass of the NTS Load Factor Considerations

This paper develops the material on inefficient bypass provided by Kinsale Energy to the NTSCMF ahead of the meetings of 2 August and 23 August (copies attached for convenience). The loss to non shorthaul users from the availability of the shorthaul service was determined in the 23 August paper to be about £125 million and this paper quantifies the extent to which this loss might be reduced if shorthaul rates were adjusted to reflect actual load factors. The effect of using current pipeline costs in addition to actual load factors is also quantified.

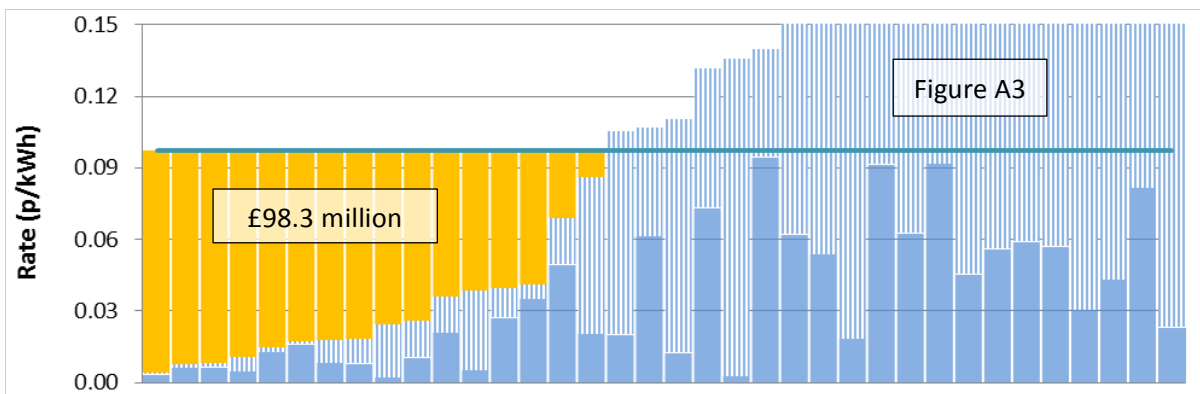
The shorthaul formula was derived from the cost of laying and operating hypothetical bypass pipelines (annuitized over a ten year project life using a 10% project discount rate) and dividing this “annual cost” by the annual quantity (calculated as the pipeline capacity multiplied by a 75% load factor). Figure A1 is a plot of the load factor of each of the 36 sites from Table 1 of the 2 August paper. The load factors were calculated by dividing the historical flows to the site by the obligated capacity for each site. For convenience, the load factors are plotted against a background reflecting the 75% load factor used in the derivation of the shorthaul formulae. National Grid NTS previously advised that the average load factor of shorthauled gas is about 20% but figure A1 shows that the load factor varies considerably between sites.



Since the shorthaul tariff is calculated by dividing the annual cost by the annual quantity, it stands to reason that the annual cost will only be collected if a quantity equal to 75% of the MNEPOR is flowed to the site. Hence, since the load factor of all of the 36 sites is less than the 75% assumed in the derivation of the shorthaul formula, the amount collected by way of shorthaul commodity charges at every site will be less than the “expected shorthaul revenue”. In Figure A2, the shorthaul rate for each site was multiplied by the assumed 75% load factor and divided by the actual site load factor. The solid bars represent the current shorthaul rates for each site and the combined solid and striped bars represent the adjusted shorthaul rates. In many cases, the adjusted shorthaul rate necessary to ensure the recovery of the “expected shorthaul revenue” is several times greater than the standard commodity charge but, for clarity, the upper value shown is limited to 0.15p/kWh.



In Figure A3, the adjusted shorthaul rates for each site are sorted and presented in order of increasing aggregate cost. This shows that adjusting a site's shorthaul rate to reflect a more realistic load factor will reduce to 16 the number of sites likely to avail of the shorthaul service and will reduce the loss to non-shorthaul users to £98.3 million.



The 1997 shorthaul formula was used to calculate the shorthaul rates for Figure A3 whereas the 2015 shorthaul formula was used for Figure A4. This shows that the number of sites likely to avail of shorthaul is reduced to 12 and the loss to non-shorthaul users is reduced to £62.4 million. Importantly, since the combined tariffs presented in Figure A4 reflect the full cost of constructing bypass pipelines to the 12 sites, the imposition of the higher standard tariff may lead to the construction of bypass pipelines to at least some of these sites. Arguably, the £62.4 million should not be viewed as a loss to the non-shorthaul shippers but instead the £27.7 million paid by the shorthaulers should be viewed as a benefit to the system and as justifying the retention of a modified but more self-limited form of shorthaul arrangement.

