

Asset Re-use

DRAFT Paper

Introduction

1. The User Commitment model proposed by National Grid assumes that if all assets are “stranded”, 50% of the risk is shared between generators and 50% is shared with other users.
2. The CAP131 Working Group has requested that National Grid examine whether this assumption is appropriate given the potential for asset re-use. In other words, if assets are re-used, more than 50% will be secured by generators.
3. The paper is divided into two sections. The first examines likely levels of asset re-use using empirical evidence from an E&W generation group. The second section considers the impact of the findings on cost reflectivity.

Asset Re-use

Analysis Background

4. We have undertaken analysis to investigate the average percentage of costs that could be re-usable for a given project. We have considered both re-use at the same location and re-use elsewhere. This analysis has been conducted on a group which comprises 5 generation projects (2500MW) and incorporates 24 separate schemes. The Group was chosen because it has a relatively large amount of construction activity providing a reasonable sample size and there is no reason to believe the type of investment mix of assets is not representative of other groups within GB. These schemes include such works as:
 - a. Reconductoring and hotwiring;
 - b. Breaker head changes;
 - c. Circuit breaker replacement;
 - d. Mechanically Switched Capacitor (MSC) installation;
 - e. Impedence series reactor installation;
 - f. Intertrip installation.
5. It should be noted that the works are carried out on existing substations and do not involve any additional transformers. The total value of the works amounts to about £180m over 2005-06.

Re-Use Elsewhere

6. The type of work associated with the above construction can be broken down into a number of standard cost categories:

a. Civils Costs

This would include engineering works associated with structures, buildings, supports, concrete, access roads, protection houses and fencing. In the above sample, civils costs amounted to 16% of the total costs and are not re-usable elsewhere.

b. Overhead Lines and Cable Costs

- i. Once installed, these assets are not generally regarded as re-usable elsewhere. For instance, if a 400mm 30 year old cable is replaced with a 570mm cable, and that investment was not retrospectively required due to project termination or station closure, there would be little point re-installing the 400mm cable.
- ii. The exception to the above example would be a brand new generator spur which might have some re-use value.
- iii. OHL and cable costs amounted to 21% of total costs, all of which have been assumed to be sunk.

c. Substation Plant Costs

This includes busbar and switchgear equipment which is not re-usable at other locations because of specific design features. These costs amounted to 37% of the total.

d. Transformers

Transformers do not form part of the works in the sample group which is typical of most entry related investment. New transformers are generally re-usable however the value of their re-use must be offset by transportation, storage and maintenance costs and perhaps more importantly, the invalidation of warranties associated with the original installation.

e. Reactive Plant Costs

MSCs and SVCs are typically fully re-usable at other locations, however the same issues in relation to transportation, storage and maintenance would also apply to these assets. In the sample group these assets represented 14% of project costs.

f. Engineering Costs

This includes developers' costs and amounts to about 7% of total costs (not re-usable).

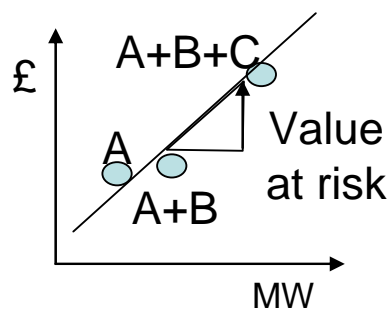
g. Protection

This includes things like control systems to operate protection equipment and amounts to 5% of total costs (not re-usable).

- The findings from the above analysis indicate that only new transformers and reactive plant can generally be regarded as re-usable at other locations and the value of this re-use potential is likely to be in the order of about 14% of project costs for entry.

Re-Use at the Same Location

- It is also true that assets constructed at a particular site which are not moveable could be used at some point in the future. The diagram below illustrates that in a scenario where 3 projects, A, B and C all have connection dates in 3 years, to accommodate all three projects, a circuit will require reconductoring. This work would begin straight away and if any project subsequently terminates this investment would have been unnecessary.



- Given the uncertainty in the timescales over which those assets may become useful, National Grid would argue it is very difficult to derive a generic rebate for this circumstance.

Implications of Re-use for Cost Reflectivity

- The User Commitment proposals assume that in the event of project termination or unannounced TEC reduction, none of the assets can be re-used and the average value of the costs of those assets will be drawn down.
- The analysis above finds that on average, a small fraction of total project costs might have the potential to be re-used, and that it would therefore be appropriate to factor in that re-use generically into the generic user commitment.
- The case could be made that the cost-reflective generic $X=12.8$ should be reduced by 14% to $X=11$.