

Large Load Interconnection

Introduction

BC's current approach to cost-allocation for large industrial customers dates from 1991, when the British Columbia Utilities Commission (the "Commission") approved for BC Hydro its Facilities Agreement and Tariff Supplement No. 6 ("TS6"). TS6 is discussed in more detail in the Generation Contribution Policy and Transmission Contribution Policy notes.

Issues

Most of the concerns around large-load interconnection in BC seem to focus on two issues: time and cost allocation.

Time

When new load customers seek interconnection, they often trigger a requirement for reinforcements to the BC Hydro system. These reinforcements are studied, and ultimately built, by the utility. In most jurisdictions, including BC, tariffs govern this process (that is, it is a regulated utility service).

Some, but not all, of these tariffs impose timelines on the utility to complete the studies. For example, BC Hydro's open access transmission tariff (based on the FERC pro forma used widely in the US and Canada for wholesale transmission service) does contain study timelines, but BC Hydro's transmission-voltage load interconnection tariffs, like those of many utilities, do not.

Imposing time limits can have several downsides. First, it can create high costs for the interconnecting customers, other ratepayers, or the utility. Utilities tend to staff their engineering functions for average demands. This is cost effective, but means that responses can slow down in periods of high demand. Requiring utilities to meet deadlines independent of workload can mean excessive staffing levels – and costs – during non-peak times. Outsourcing can help this, but often the private firms are busy at the same time the utilities are.

Where tariffs contain deadlines, there is also the question of enforcement and sanction. This can be problematic, since utilities normally have their staffing levels vetted, at least indirectly in rate setting, by the regulator. It may then be problematic for the regulator to sanction the product of that resourcing level if service delays begin to arise. Of course staffing levels and efficiency are not perfectly correlated, but it is easy to anticipate utility arguments linking the two that would make sanctions difficult to manage.

The other timing consideration is for the actual construction or implementation of system reinforcements. BC Hydro, like most utilities, is not liable for most delays in reaching target in-service dates. Changing this raises the same issues as changing the planning time limits. Overall, it would be very unusual for a utility to bear cost responsibility for delays in service not arising from negligence, and this is generally seen as sound policy.

Cost

A summary of approaches to cost allocation in several jurisdictions can be found in Appendix A of BC Hydro's second stakeholder submission at <http://www.em.gov.bc.ca/EPD/Documents/IEPR%20Submission-BC%20Hydro%202.pdf>. In BC, the question of load interconnection costs differs from most jurisdictions, for two main reasons.

First, BC Hydro's system is large and much of it is radial, meaning that transmission interconnections can require long and expensive new transmission over remote ground. Moreover, the costs are very case specific, depending on exact location and load characteristic. This is very different from load interconnections in the US northeast, for example, which is a heavily looped system and industry is often locating very close to a strong grid.

BC's characteristics mean that a revenue test is almost certainly going to be required, as opposed to a simpler "fixed contribution" or "first point of interconnection" approach. Those simpler tariff approaches are really only useful when all interconnections are about the same cost per unit of size, and not very expensive. Inefficient location decisions and cost cross subsidies would be all but impossible to prevent if simpler structures were applied in BC.

Second, (and notwithstanding BC's relatively high transmission costs) the bulk of cost issues in BC's load interconnections arise from the allocation of new generation costs. In jurisdictions where the differences in the average embedded cost of utility generation and the marginal cost of new generation are small, this is not a major issue. In BC, where the differences are significant, the cost consequences of various allocation options are also significant.

For this reason, the 150 MVA threshold has attracted a great deal of attention. However, the absence of such a threshold in many jurisdictions should not necessarily be seen as an argument that such a threshold (perhaps improved in detail) is not appropriate in BC.

A new 150 MW (fairly close to 150 MVA) customer would use about 1.3 million MW.h of electricity per year if it ran at full capacity through the entire year. If the customer was served by new renewable generation at a cost of \$130 per MW.h and charged the embedded cost of BC power near \$35 per MW.h, then the annual cost to the utility serving it would be over \$120 million per year for generation alone. This single facility would impose a roughly 4 per cent increase in BC Hydro's rates. Viewed the other way, if this hypothetical facility were to have the existing 150 MVA threshold waived, that would be a \$120 million per year benefit to it. However, this cost could be much lower if the utility were in surplus and selling power into the market below its industrial rate.

With costs (or benefits) of that magnitude at stake, normal rate design rules on a "one-size-fits-all" basis are unlikely to apply. Policy judgment will always be brought into play.

Questions

1. Should BC Hydro be subject to, and maintain the additional capacity necessary to meet, shorter transmission timelines, and who should incur those costs?
2. Should a simpler tariff approach be used, even with the risks of the simpler tariff not reflecting actual costs of connection in specific instances?
3. What costs, and in what situations, should be allocated to connecting customers and what should go to the broader industrial ratepayer class?
4. Should customers be offered the option of shorter timelines at a premium price?