Review of Pre-commercial Procurement Approaches and Effects on Innovation

This report is a review of the literature on government procurement of R&D services that seek to stimulate innovation. Government procurement of R&D services that attempt to stimulate innovation is an activity that has been termed "pre-commercial procurement" (or PCP) and this term will be used here in this report to refer to this family of policy approaches to the stimulation of innovation. PCP is not the purchase of innovation, what the European Union terms procurement of innovation or (PPI). The purchase of innovation (PPI) is not covered by this report but has been dealt with by other reports in this series, especially that by Edler (2013). Procurement of innovation both in Europe and outside it is undertaken to procure goods that are on the market (or very close to it) using procedures that comply with the Government Procurement Agreement of the WTA. This report does not consider PPI but looks at PCP. This report examines the rationales of PCP, its context - in demand side approaches to innovation - its operation, and its impact. The report is in four main parts: a) looks at how pre-commercial procurement can be defined; b) looks and why policy makers are attempting to use and promote PCP; c) then the forms affecting implementation are considered, paying close attention to the legal rules that define its application; d) evidence of impact is then considered; e) section five provides some brief observations. Annexes contain various reference materials including a bibliographic review of publications, and at a glance list of evaluations and then the references. The justifications advanced for PCP approaches are the following: externalities are generated from R&D support of the kind used by PCP although IPRs can be shared; market failures of information may be reduced; the testing of innovations reduces the risks for public sector; increase in the quality of the public services is likely to be more likely with this approach than with traditional procurement; government develops technologies with a public good ultimately for private purchase where private markets don't yet exist; government procurement of technologies (ultimately from a PCP) may lead to wider private adoption; PCP approaches may in certain cases give greater access to small firms; they may also give greater access to minorities; firms taking part in PCPs may experience capability development; new employment and new firms are created by innovation activities; a major policy goal of increasing European innovation and economic growth and social cohesion, achieved with higher levels of research and development. It is possible to see that within the evaluations that have been carried out, there is a strong focus upon economic impacts on the firms and sectors supported and a set of case studies showing examples of new technologies delivered. However, there is a significant gap in the evaluation literature both published and grey / non-peer reviewed of the following legitimate comparisons which are subject to either non or negligible attention: a) how well does pre-commercial procurement compare with existing forms of procurement in realizing the objectives of government; b) how does pre-commercial procurement compare with other forms of business support to firms such as R&D programmes, or taxation schemes. This is not surprising in the case of countries outside the US as the approach is very new. But it is surprising that more systematic evaluations have not taken place for the US. Evaluation of the SBIR programme (of the United States of America) has led to increasing awareness of the role of the design of pre-commercial procurements. As programme designers have varied these aspects over time and in practice, programme managers have used the discretion inherent in the US scheme on a case by case basis. Overall, the US SBIR has tried to reduce proposal review time (funding gaps) at both Stage I and Stage II, Wessner reports that the US SBIR has adopted a target of reducing the Stage II gap from 11.5 to 6 months and the Stage I from 6.5 to 4 months (Committee for Capitalizing on Science Technology and Innovation 2007, page 217.). Impact of the US scheme is based on achieving a delicate balance, enough competition to secure innovation, and collaboration, but not too much competition that would deter entry. Enough time to deliver a solution against an organisation priority, but not so little time as to make innovation impracticable within the time allowed. The role of how much risk the government itself should take is an important issue raised recently (Link and Scott 2010). Recent evaluations suggest that evaluators at the early stages of the development of their programmes are acutely aware of the need to encourage participation both on the part of firms who take part in the competitions and on the part of client / user government departments for whom pre-commercial procurement is a new policy tool they have been encouraged to operate by their respective pre-commercial procurement promoting departments, usually the ministry of innovation / industry. The issue of proposal resubmission (at Stage I and Stage II) has

been considered in the case of US SBIR as proposal re-submission has an effect on the engagement of firms in the programme, its reputation, and upon the capacity of the programme to gather and then support good ideas. Parts of the US Programme have some recycling of proposals whereby agency staff examine proposals rejected by one call and feed these into subsequent ones. Such activities require significant numbers of commercially and technically qualified within agencies / government departments. PCP implementation within the European context currently faces a number of important and difficult choices although not all the choices are mutually exclusive. Those choices include the following: what is to be the locus of PCP and PPI decision making? What general approach is to be taken? what third party relationships (to conduct the procurement) are to be found? is agency involvement (a relationship to operate and manage) to be sought? will co-funding of a procurement be sought? what legal rules will be followed? who will contract? What level is best to work at and can multi-level schemes regional, national or local be effective? Evaluation of PCP is challenging because pre-commercial procurement activities are a diverse set of activities and do not constitute a single model of intervention. For example, the US programme varies to a significant degree across government departments in terms of the technology area (not surprisingly) addressed and in terms of the management teams that operate the programme (as the programme is embedded within departments) and in terms of the rules that are applied. Over time there have been changes also to the operation of the programme, and, while the US does not have any official Stage III funding instrument as part of the programme, there are a range of instruments available that constitute follow-on funding which are not comparable to those in other countries where pre-commercial procurement is operating. Furthermore, within the European case, there is the 16f option for pre-commercial procurement that could be compared with the existing national schemes and there are additional measures, separately negotiated, such as the Energy Technologies Institute. Related to the third point in this section is the problem that within the European Union there are as yet few schemes operating for a long enough period that would allow comparison against each other and against the US model (even if this was a plausible evaluation strategy which is doubtful, given the variety of purposes to which pre-commercial procurement schemes have been and can be put)
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