

Pre-commercial procurement:

DRIVING INNOVATION TO ENSURE HIGH QUALITY PUBLIC
SERVICES IN EUROPE



European Commission
Information Society and Media

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Foreword

High quality public services are an important feature of the European model. Yet, faced with challenges such as globalisation or demographic ageing, maintaining and improving these public services requires continuous efficiency gains and innovation. For example in health care, new treatment possibilities and rising expectations and growing demands for elderly care are confronted by limits on public spending. It is essential therefore that we more fully exploit research and technology to deliver more cost effective and better quality services.

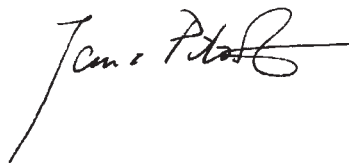
In some cases the technologies needed to make these breakthroughs exist or are close to the market and it is possible for public authorities to immediately procure the products and services required to modernize public services. However in other situations, investment in R&D is needed to assure the development of technological solutions that meet societal needs. Where this is the case, innovation is held back because public authorities remain largely unaware of the role of public procurement for this purpose.

This is why the Commission has published this Communication on 'pre-commercial procurement.' It intends to raise awareness on how R&D services can be procured in a way that applies risk-benefit sharing between procurers and suppliers but that does not constitute State aid. Our aim has been to help public authorities to use research results to obtain better value for money more quickly. It should also boost innovation by shortening the time to market for suppliers. This is particularly important for the competitive position of rapidly changing technology intensive sectors.

The background document (in annex) provides a working example of pre-commercial procurement that is in line with the existing legal framework. It shows how R&D services can be procured in a phased process involving several suppliers, to maintain competition even while solutions are already in the test phase.

The pre-commercial procurement Communication and its associated background paper provide a natural complement to the existing Commission guide on public procurement of commercially available innovative products, works and services in the public sector.

On the basis of this communication, we hope to see an active debate on pre-commercial procurement as an important element in the mix of policy measures to stimulate innovation, as well as innovative ways to meet medium term public spending challenges with the help of pre-commercial procurement.



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COMMISSION OF THE EUROPEAN COMMUNITIES

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**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Pre-commercial Procurement: Driving innovation to ensure
sustainable high quality public services in Europe**

{SEC(2007) 1668}

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Pre-commercial Procurement: Driving innovation to ensure
sustainable high quality public services in Europe**

(Text with EEA relevance)

1. Introduction

The Communication on a "broad based innovation strategy for the EU"¹ highlighted the importance of public procurement in reinforcing the innovation capabilities of the Union whilst improving the quality and efficiency of public services. It also underlined the untapped opportunities in Europe for pre-commercial procurement. In its conclusions on the above Communication², Council invited the Commission to provide guidance on how EU rules on public procurement can be used to stimulate innovation. The European Parliament's resolution of June 2007 on the transposition and implementation of public procurement legislation³ encouraged the wider use of pre-commercial procurement in the EU.

The recently published guide⁴ on the uptake of commercially available innovative products, works and services in the public sector identifies ten elements of good practice to promote the potential of public procurement for stimulating innovation.

This Communication addresses the concept of "pre-commercial procurement" which concerns the Research and Development (R&D) phase before commercialisation. For the purpose of this communication "pre-commercial procurement" is intended to describe an approach to procuring R&D services other than those where "the benefits accrue exclusively to the contracting authority for its use in the conduct of its own affairs, on condition that the service provided is wholly remunerated by the contracting authority^{5,6}" and that does not constitute State aid. More specifically in **pre-commercial procurement**:

- (1) **The scope is R&D services only:** R&D can cover activities such as solution exploration and design, prototyping, up to the original development of a limited volume of first products or services in the form of a test series (see Figure 1). "Original development of a first product or service may include limited production or supply in order to incorporate the results of field testing and to demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards"⁷. R&D does not include commercial development activities such as quantity production, supply to establish commercial viability or to recover R&D costs,

1 COM(2006) 502 final.

2 2769th EU Competitiveness Council conclusions, 4/12/06.

3 EP 2006/2084(INI).

4 SEC(2007) 280.

5 In this case, the public procurement directives do not apply (see Art 16f of 2004/18/EC, Art 24e of 2004/17/EC). These exemptions only apply to public contracts for R&D services, not for R&D supplies or works.

6 Contracts providing more than only services are still considered a public service contract if the value of the services exceeds that of the products covered by the contract.

7 WTO Government Procurement Agreement, article XV.

integration, customisation, incremental adaptations and improvements to existing products or processes.

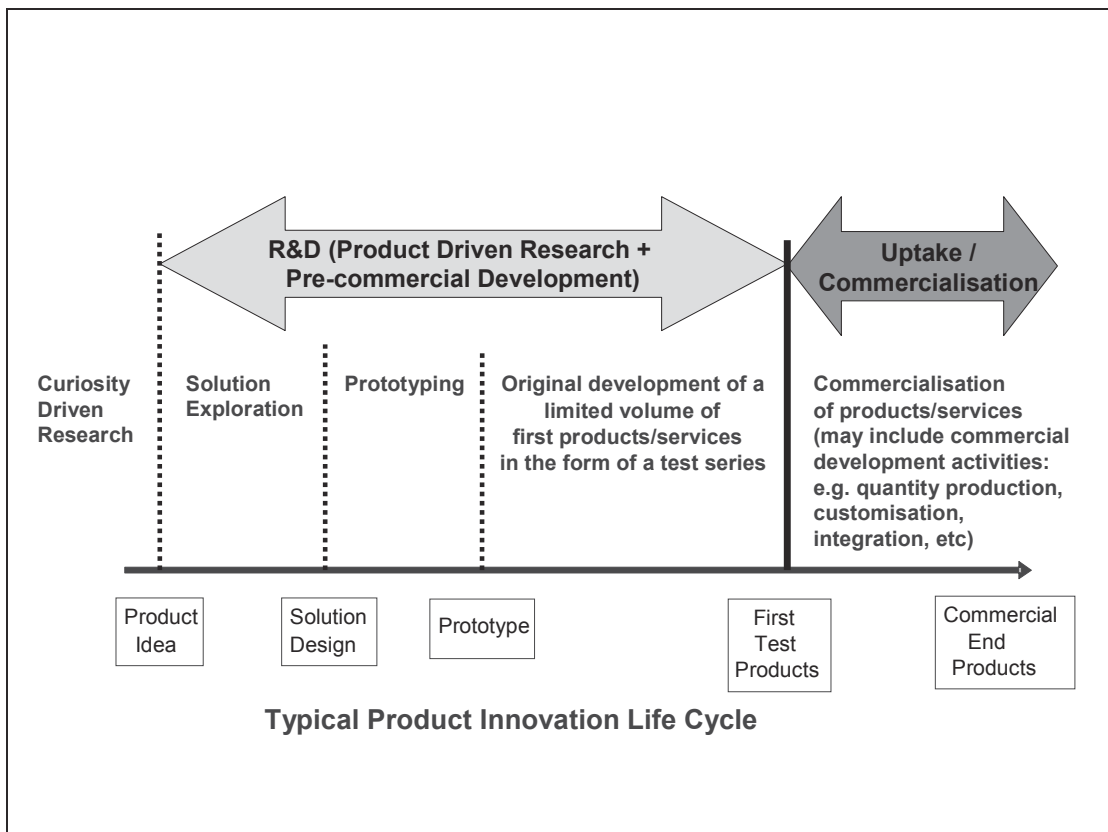


Figure 1: R&D versus commercialisation phase

- (2) **The application of risk-benefit sharing:** In pre-commercial procurement, the public purchaser does not reserve the R&D results exclusively for its own use: Public authorities and industry share risks and benefits of the R&D needed to develop new innovative solutions that outperform those available on the market.
- (3) **A competitive procurement designed to exclude State aid:** Organising the risk-benefit sharing and the entire procurement process in a way that ensures maximum competition, transparency, openness, fairness and pricing at market conditions enables the public purchaser to identify the best possible solutions the market can offer.

The aim of this Communication is to draw the attention of Member States to the existing but underutilised opportunity of pre-commercial procurement. The Annex⁸ provides, by way of example, one possible implementation⁹ in line with the existing legal framework. As there is still little experience in the EU with pre-commercial procurement, the Commission is interested in exploring the extent to which pre-commercial procurement could indeed contribute to more R&D and innovation in the EU and, hence, bring tangible benefits to society and economy. Through this Communication together with the guide⁴ the Commission will have addressed, as requested by the Council, possibilities provided by EU legislation to

⁸ SEC(2007)...

⁹ Providing one implementation example does not preclude that there may be other possible approaches.

stimulate innovation through public procurement, in both R&D and commercialisation phases.

Actions that are taken in pre-commercial procurement cannot preclude competition in the commercialisation phase as there the Public Procurement Directives and Treaty Principles on which they are based fully apply.

2. Addressing Europe's societal challenges through pre-commercial procurement

The public sector in the EU, as elsewhere in the world, is faced with important societal challenges. These include ensuring high quality affordable health care to cope with the impacts of an ageing population, the fight against climate change, improving energy efficiency, ensuring higher quality and better access to education, and more effective dealing with security threats.

Addressing such challenges can require new and better solutions. New equipment will be needed e.g. to perform cutting-edge medical research, undertaking early diagnosis of diseases and finding new treatments, to reduce energy consumption in buildings and public transport, to protect citizens from security threats without intruding on their privacy. Some of the required improvements are so technologically demanding that either no commercially stable solution exists yet on the market, or existing solutions exhibit shortcomings which require new R&D. By developing forward looking procurement strategies that include R&D procurement to develop new solutions that address these challenges, the public sector¹⁰ can have a significant impact on the mid to long term efficiency and effectiveness of public services as well as on the innovation performance and the competitiveness of European industry.

Europe must also do better in terms of innovation performance compared to major competitors¹¹. The aim of the Lisbon strategy for Growth and Jobs is to find solutions not only for the continuing underinvestment in R&D, but also to improve Europe's ability to convert new inventions into new products and jobs. The relatively slower uptake of innovations in the public sector in Europe and the fragmentation of public demand have been highlighted by industry as important issues to be addressed in order to shorten time to market and to improve Europe's attractiveness to investment in innovation and research.

Procuring R&D is commonly used by companies to gain a first-mover advantage. It could be more widely used in the public sector in Europe to improve efficiency and quality of service. This will typically require the public sector to develop strategies for procurement that are not only limited to the purchase of commercially available products and services but that also include the procurement of R&D of new solutions that can outperform those available on the market. This Communication introduces and explains an approach to procuring R&D services.

3. Europe can do better: Strategic R&D procurement to stay in the lead

Public needs have always been an important driver of innovation in many sectors such as telecom, energy, health, transport, security and defence. In a globalised competitive environment, the role of the public sector in benefiting from and driving forward innovations

¹⁰ Public procurement (17 % of EU-25 GDP) represents 35% of EU-25 public expenditure.

¹¹ COM (2006) 589final.

needs to be revisited. This has been done to a large extent in the EU's major trading partners - such as the US and Japan - where the procurement of R&D to address public needs for which no solution exists on the market is used as an important mechanism to stimulate innovation.

Examples of life-changing innovative solutions that emerged from R&D procurements include the Internet Protocol technology, the Global Positioning System, high performance computing, and key innovations in semiconductor technology. More recently, R&D procurements related to concrete societal challenges - such as soil pollution treatment, or Alzheimer disease diagnosis - have enabled US public authorities to create new markets for biotechnology and nanotechnology applications¹⁵.

In the areas of energy and the environment public institutions in US and Japan¹² have significantly reduced the cost of fuel cell stations through R&D procurements. This has facilitated fuel cell powered buses to become a viable energy-efficient public transport option. China's last year's national long-range science and technology plan officially introduced public technology procurement in China as a means to encourage innovation¹³.

The US public sector is spending \$50Bn¹⁴ per year in procurement of R&D, an amount which is 20 times higher than in Europe and represents approximately half of the overall R&D investment gap between the US and Europe. This has often played an important role in improving the quality of public services and in the emergence of globally competitive companies¹⁵.

The difference in R&D procurement expenditure between the US and Europe is mainly due to disparities in defence/space budgets. However, US expenditure of this type is still 4 times higher in non-defence/space public sectors such as health, energy, education, transport and environment. This represents a gap of \$3.4Bn in absolute terms¹⁶. Experts^{12,17} point to untapped innovation opportunities in these non-defence sectors where Europe could take the lead.

There are important regulatory and policy differences in the procurement framework of the EU and other countries. Therefore the above experiences should be analysed in order to identify how lessons learnt could be transferred to the EU context.

4. Exclusive development

Exclusive development means that the public purchaser reserves all the results and benefits of the development (including Intellectual Property Rights or IPRs) exclusively for its own use. The companies that have developed the product/service then cannot reuse them for other potential customers. This will normally be reflected in a higher price.

¹² "Commercialising University Research", paper for ESRC Sustainable Technologies Programme, Chris Hendry.

¹³ Art 22-26 of the Complementary Policy for the 'National Mid and Long Term S&T Development Plan Guideline', Xinhua politics, 2006.

¹⁴ Figures quoted concern the total volume of R&D public procurements, not only those that could be considered pre-commercial procurement.

¹⁵ "US defence R&D spending: an analysis of the impacts", EURAB report, PREST, 2004.

¹⁶ Figures quoted from 'Pre-commercial Procurement: a missing link in the European Innovation cycle', independent expert report, March 2006. In 2004, 15% of the total federal procurement budget (\$49Bn) was spent on R&D procurement: 90,6% by defence/space agencies, 9,4% by non-defence agencies. In 2004, less than 1,5% of the total EU wide tendered procurement budget (€2,5Bn) was spent on R&D procurement: 49% was defence/space related.

¹⁷ 'Public Procurement for research and innovation', independent Wilkinson expert group, 2005.

There are, however, cases where exclusive development can be justified: e.g. when the public purchaser "needs" exclusive rights over projects results (e.g. in defence or security related fields which require secrecy of results) or when the public purchaser "is" the only interested customer (e.g. development of very special customer specific equipment).

According to experts¹⁷ public purchasers in Europe tend to opt for exclusive development. In most cases however, "exclusiveness" of project results is not indispensable for public purchasers¹⁷ as the public purchaser is only one of many potential users of the developed solution. Moreover, public purchasers often overlook the additional costs and efforts¹⁸ needed to reap the benefits of the results. Unless the public purchasers have a mandate and concrete plans to commercially exploit the research results, there is often no reason to bear the high costs and risks of exclusive development.

In such cases exclusive development may hamper innovation. The exclusive assignment of rights to the public purchaser takes away the incentive for companies to invest in further commercialisation. The high price for the exclusive ownership of project results reduces the incentive for the public purchaser to share project results with other potential public purchasers. This can lead to:

- (1) **Market fragmentation:** If different public purchasers in the same sector develop their own solutions to a similar problem without sharing information with each other, a multitude of solutions are developed, which are unlikely to address global markets.
- (2) **Financial barriers to procuring competing developments:** Where a number of technologies and design options could offer a solution, the high cost of exclusive development makes the procurement of competing developments from a number of companies hard to afford. This can lead to locking the public purchasers to one supplier.
- (3) **Missed opportunities for more innovative solutions:** Exclusive development assigns not only all R&D benefits but also all R&D risks to the public purchaser. As a result, public purchasers tend to focus on near to market developments and miss the opportunities offered by the development of more innovative solutions that could potentially bring better value for money for the public sector.

5. Pre-commercial Procurement: Procuring R&D services involving risk-benefit sharing at market conditions

In pre-commercial procurement the public purchaser chooses not to reserve the R&D results exclusively for its own use⁵. As defined in section 1, pre-commercial procurement is an approach to procuring R&D services which involves risk-benefit sharing⁵ and does not constitute State aid¹⁹. More specifically, this approach is based on:

- Risk-benefit sharing according to market conditions
- Competitive development in phases

¹⁸ e.g. costs and liabilities related to securing and preserving IPR rights (e.g. IPR filing / maintenance costs, liability as IPR owner in court litigations and disputes with suppliers).

¹⁹ More implementation details are provided by way of example in Annex (see footnote 8).

- Separation of the R&D phase from deployment of commercial volumes of end-products

The aim is to facilitate cost-effective development of innovative solutions for public services with a broader more global outlook.

5.1 Risk-benefit sharing according to market conditions

In this approach, the public purchaser shares the R&D results with other public authorities and industry through publication and standardisation, as well as through their commercialisation.

To ensure that such an arrangement is beneficial both for the public purchaser and for the companies involved in pre-commercial procurement, R&D risks and benefits are shared between them such that both parties have an incentive to pursue wide commercialisation and take up of the new solutions.

When benefits shared include IPRs, care must be taken that when IPR ownership rights are assigned to companies participating in the pre-commercial procurement, this is done in a way that does not give the companies any form of unfair advantage in possible future procurements and that enables the public purchaser to access a sufficiently large and competitive supply chain. E.g. the public purchaser can require participating companies to license IPRs to third parties under fair and reasonable market conditions. The public purchaser can also demand a free licence to use the R&D results for internal use.

Ensuring that all potential bidders have equal chances to bid also implies that the procurement process, including the IPR arrangements, does not discriminate against any potential supplier, in particular SMEs.

If the risk benefit sharing does not take place under market conditions, and the price paid for the services provided is higher than market price, this will normally be regarded as State aid that will have to be notified to and assessed by the Commission according to Articles 87-88 of the EC Treaty and the State aid Framework for Research, Development and Innovation²⁰.

To ensure that the risk-benefit sharing is done according to market conditions any R&D benefit shared by the public purchaser with a company participating in the pre-commercial procurement should be compensated by the company to the public purchaser at market price. This can be done through, for example, a price reduction compared to exclusive development cost that reflects the market value of the benefits received and the risks assumed by the company²¹.

In the above risk-benefit sharing example both companies and public purchasers benefit from wide commercialisation and take up of the developed solutions. This provides an incentive to both parties to pursue standardisation and publication of R&D results, and can thus help to reduce fragmentation of public demand. The financial compensation which the public purchaser gets for not exclusively reserving all R&D benefits for itself can make it, compared to exclusive development, more affordable to contract a number of developments from competing companies and to procure more upstream R&D.

²⁰ OJ C 323, 30.12.2006

²¹ More info can be found in section 4.3 of the Annex (see footnote 8).

Public purchaser involvement from the early R&D phases is likely to deliver better value for money for the following reasons:

- Assessing the performance of working prototypes and test products in a real operational customer environment enables public purchasers to align product developments according to customer priorities, at a point where it is still possible to influence industry roadmaps and upcoming standards. Enabling better anticipation of demand for new solutions shortens time to market for suppliers, and helps public authorities introduce new solutions faster.
- Earlier engagement in the innovation process enables public authorities to detect at an earlier stage potential policy and regulatory issues that need to be addressed in order to ensure timely introduction of the new solutions into public services and other markets.
- An earlier reality check of industry R&D against concrete public purchasing needs maximizes the effectiveness of the R&D process and optimizes R&D spending.

5.2 Competitive development in phases

Another element to reduce R&D risks and costs involves procuring the R&D in phases stretched over a period of time and ensuring competition between companies to create a range of options (Figure 2).

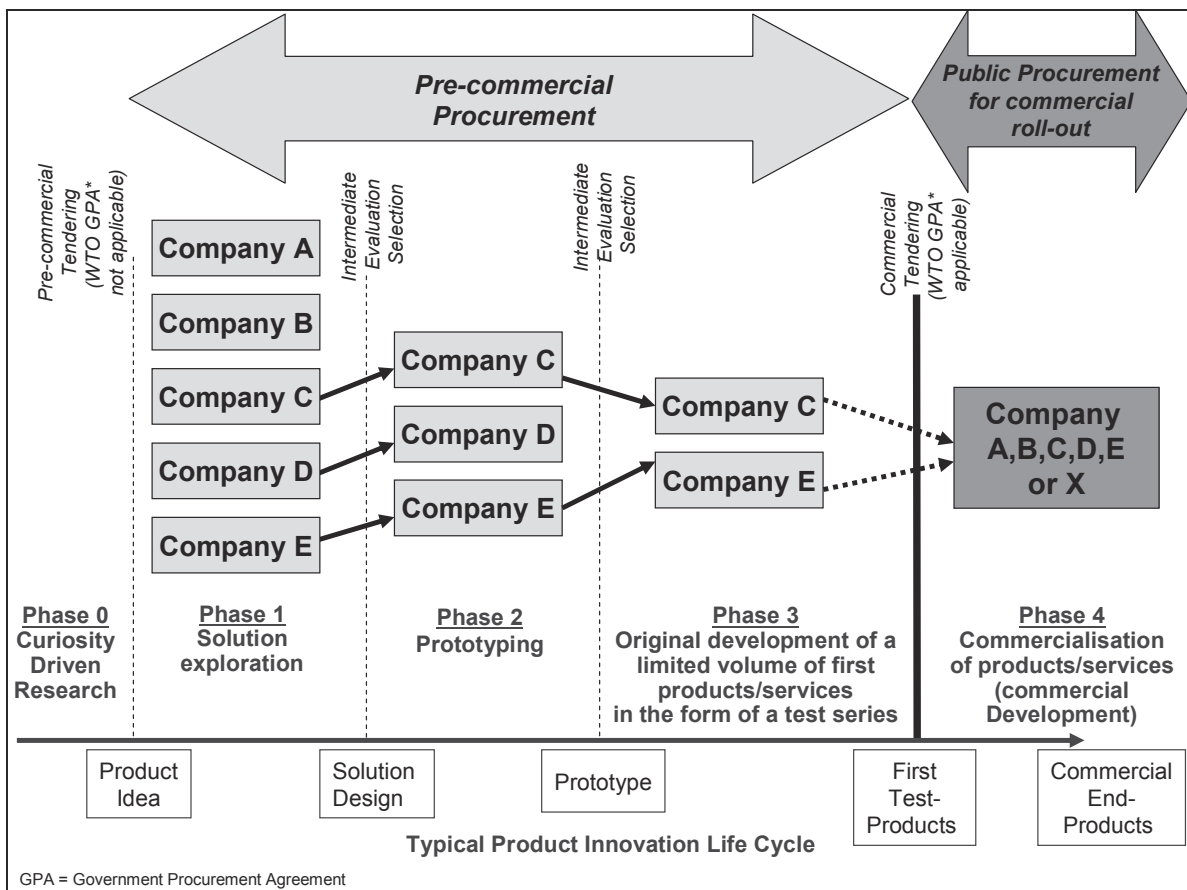


Figure 2: Example illustrating a phased pre-commercial procurement process

This is based on the following principles:

- Challenging the market in an open and transparent way and inviting a number of companies to develop in competition the best possible solutions to address the problem.
- Exploring and comparing pros and cons of alternative solutions. This mutual learning process for public purchasers and companies helps to get firm confirmation both about functional needs and performance requirements on the demand side, and the capabilities and limitations of new technological developments on the supply side.
- Organising the procurement as a stepwise process, including evaluations after each R&D phase, in order to select progressively the best solutions. This enables public purchasers to steer development throughout the process to best fit public sector needs.
- Efforts after each R&D phase to achieve interoperability and product inter-changeability between the alternative solutions under development pave the way for open standards and avoid the risk that early adopters of innovative solutions are penalised with the additional burden of making their solution compliant with standards defined afterwards.
- Retaining at least two participating companies until the last phase to ensure a future competitive market. Maintaining a positive competitive pressure on suppliers enables public purchasers to extract the best solutions the market can offer while avoiding single supplier lock-in.

A company that has been challenged in competitive development is also better prepared to address global markets and to attract external investment, such as venture capital funding, for the exploitation of further market opportunities. This is especially important for SMEs.

In the short term a competitive development process may involve a higher investment compared to procuring a limited R&D test solution from one supplier. In the long run, the quality/price ratio and the success rate of the development process are likely to be higher. Aiming for globally accepted instead of locally tailored solutions, through standardisation and publication of R&D results, is also expected to result in lower cost of commercial end-solutions. R&D costs and risks can be further reduced through bundling of demand with other public purchasers as well as financial incentives from innovation policy agencies to public purchasers. This could comprise funding or risk sharing facilities (see Annex⁸).

5.3 Separation between R&D phase and deployment of commercial volumes of end-products

Due to the inherent risk of failure in R&D, technological success may not always be the case. It is only at the end of the pre-commercial procurement that the public purchaser has comparative test evidence that proves whether the developed solutions truly outperform other solutions available at the same time on the market or not. The fact that a company has done the R&D and developed a working test series can in itself be no guarantee to win a follow-up contract for mass delivery.

Pre-commercial procurement is a preparation exercise which enables public purchasers to filter out technological R&D risks of potential alternative solutions before committing to procuring a large scale commercial roll-out.

Separation from public procurement for commercial roll-out enables pre-commercial procurement to focus on acquiring the knowledge needed to identify the "best" possible solution the market can offer at the time of commercial roll-out, without leading to unilateral State aid to industry.

Separating pre-commercial procurement from the public procurement for commercial roll-out is also compliant with the provisions of the WTO Government Procurement Agreement and applicable bilateral agreements. Except for the EEA and Stabilisation and Association agreements with partner countries of the European Neighbourhood Policy, the EU has no national treatment²² and non-discrimination obligations to other parts of the world for the procurement of R&D services⁶, but it does for supplies²³.

As pre-commercial procurement concerns R&D services, public purchasers can decide case by case on the openness to worldwide offers and on the relevant conditions, taking into account the full potential of the European Research Area²⁴.

6. Conclusions

This Communication addresses the need for more innovation in the public sector and provides an approach to procure R&D services (pre-commercial procurement). It launches a debate on which areas could lend themselves to the approach presented for pre-commercial procurement. This debate should be seen in the wider context of the policy debate on supply and demand driven innovation and lead markets²⁵. Pre-commercial procurement differs from and complements other innovation instruments such as grants, tax incentives, access to finance, joint technology initiatives etc. It could shorten time to market and encourage market acceptance of new technologies when seen as part of a coordinated policy framework including standardisation, regulation and procurement of other innovative goods and services.

Because public spending often operates on a shorter time scale than technological innovation, the debate could first address concrete mid-to-long term public needs that would require the development of new technology solutions. The relevant public authorities and the Commission could then evaluate the potential role of pre-commercial procurement strategies in meeting the relevant policy objectives.

On the basis of this debate, the Commission will consider, in the second half of 2008, to propose a set of actions in relation to pre-commercial procurement in areas of policy priority based on relevant impact assessments. In particular, it will explore the possible need of new platforms for cooperation on pre-commercial procurement.

²² The national treatment obligation implies that Members do not operate discriminatory measures between domestic services or service suppliers and foreign ones.

²³ This obligation does not only concern commercial end-products. R&D supply contracts are also not exempted from the non-discrimination obligation.

²⁴ COM(2007)161, Green paper on ERA.

²⁵ COM(2007)...., A lead markets initiative for Europe.

As a step in this direction, the Commission could also support networking on pre-commercial procurement at European level. It can envisage determining areas of public interest to network on, such as energy efficiency, environmental protection²⁶, health services, security, etc²⁷. These areas could then serve to provide examples of pre-commercial procurement cases in such application areas to raise awareness of the approach and exchange experiences between stakeholders.

²⁶ For info on Green procurement : http://ec.europa.eu/environment/etap/index_en.htm

²⁷ E.g. ministries and agencies in ten Member States have already joined in a European Coordination Action to share experiences on how to best procure development of technologically demanding solutions addressing public needs (www.omc-ptp.eu). The DK and SE initiative to explore joint R&D procurement in e-health (http://www.si-oresund.org/in_english.6) is another example.



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COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Pre-commercial Procurement: Driving innovation to ensure
sustainable high quality public services in Europe**

**Example of a possible approach for procuring R&D services applying risk-benefit
sharing at market conditions, i.e. pre-commercial procurement**

{COM(2007) 799 final}

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COMMISSION STAFF WORKING DOCUMENT

Example of a possible approach for procuring R&D services applying risk-benefit sharing at market conditions, i.e. pre-commercial procurement

(Text with EEA relevance)

The Commission Communication on pre-commercial procurement¹ introduces the concept of pre-commercial procurement as an approach to procuring R&D services other than those where "the benefits accrue exclusively to the contracting authority for its use in the conduct of its own affairs, on condition that the service provided is wholly remunerated by the contracting authority^{2,3}" and that does not constitute State aid. This Commission Staff Working Document describes in a more detail the approach introduced in section 5 of the Communication on pre-commercial procurement¹.

Pre-commercial procurement consists of a procurement of R&D services that involves risk-benefit sharing at market conditions and in which a number of companies develop in competition new solutions for mid- to long term public sector needs. The needs are so technologically demanding and in advance of what the market can offer that either no commercially stable solution exists yet, or existing solutions exhibit shortcomings which require new R&D. By allocating R&D benefits and risks between public purchasers and companies in such a way as to encourage wide commercialisation and take-up of R&D results, more beneficial time to market conditions are created allowing both the public sector to introduce innovations faster and industry to be the first to exploit new lead markets. Leaving a clear separation between the pre-commercial R&D phase and the roll-out of commercial end-products resulting from the R&D enables public purchasers to filter out technological R&D risks before committing to procuring a full-blown innovative solution for large-scale commercial roll-outs.

The approach presented is consistent with the existing legal framework for the public procurement of R&D services as set out in the Public Procurement Directives, the WTO GPA, the Fundamental Treaty Principles, as well as competition law including State aid law. By providing more details on the approach presented in section 5 of the Communication this document does not preclude that there may be other approaches possible in line with the legal framework. The following sections describe chronologically the steps to prepare for the pre-commercial procurement (section 1, 2, 3, 4), to launch and conduct the pre-commercial procurement itself (section 5), as well as the follow-up afterwards (section 6).

¹ COM(2007)799 final - 'Pre-commercial procurement: Driving innovation to ensure sustainable high quality public services in Europe'

² In this case, the public procurement directives do not apply (see Art 16f of 2004/18/EC, Art 24e of 2004/17/EC). These exemptions only apply to public contracts for R&D services, not for R&D supplies or works.

³ Contracts providing more than only services are still considered a public service contract if the value of the services exceeds that of the products covered by the contract.

1. IDENTIFYING CANDIDATE PROJECTS FROM PUBLIC SECTOR NEEDS

In situations where there is a concrete public sector need, but the best way to address it is unclear, public purchasers can organize an initial open dialogue⁴ with the supply side in order to develop a better understanding of the available options. Such a dialogue would clarify market gaps with respect to actual needs.

By facilitating a deeper understanding of ongoing industrial product developments in terms of technological maturity such a dialogue could help public purchasers to distinguish between purchasing needs that require new R&D versus others that concern primarily commercial development.

For purchasing needs that require new research and development to create solutions that are not available on the market, the public purchaser can decide to start a pre-commercial procurement.

2. DECIDING ON THE PRE-COMMERCIAL PROCUREMENT CONTRACT STRUCTURE

Pre-commercial procurement is a procurement of R&D services⁵.

R&D can cover activities up to the original development of a limited volume of first products or services in the form of a test series. "Original development⁶ of a first product or service may include limited production or supply in order to incorporate the results of field testing and to demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards". R&D does not extend to commercial development activities such as quantity production, supply to establish commercial viability or to recover R&D costs, integration, customisation, incremental adaptations and improvements to existing products or processes.

In practice, the approach described is a single framework contract for R&D services managed in phases, each implemented as specific contracts, matching the different stages of development. Splitting up the process in phases reduces the risks of working with as-yet unproven technologies.

⁴ An open dialogue makes it possible to broach the views of the market before starting the tendering process. This would have to be done under the condition that the seeking or accepting of advice does not have the effect of precluding or distorting competition.

⁵ Referred to in Annex II and Annex XVII of respectively directive 2004/18/EC and 2004/17/EC

⁶ WTO Government Procurement Agreement, article XV.

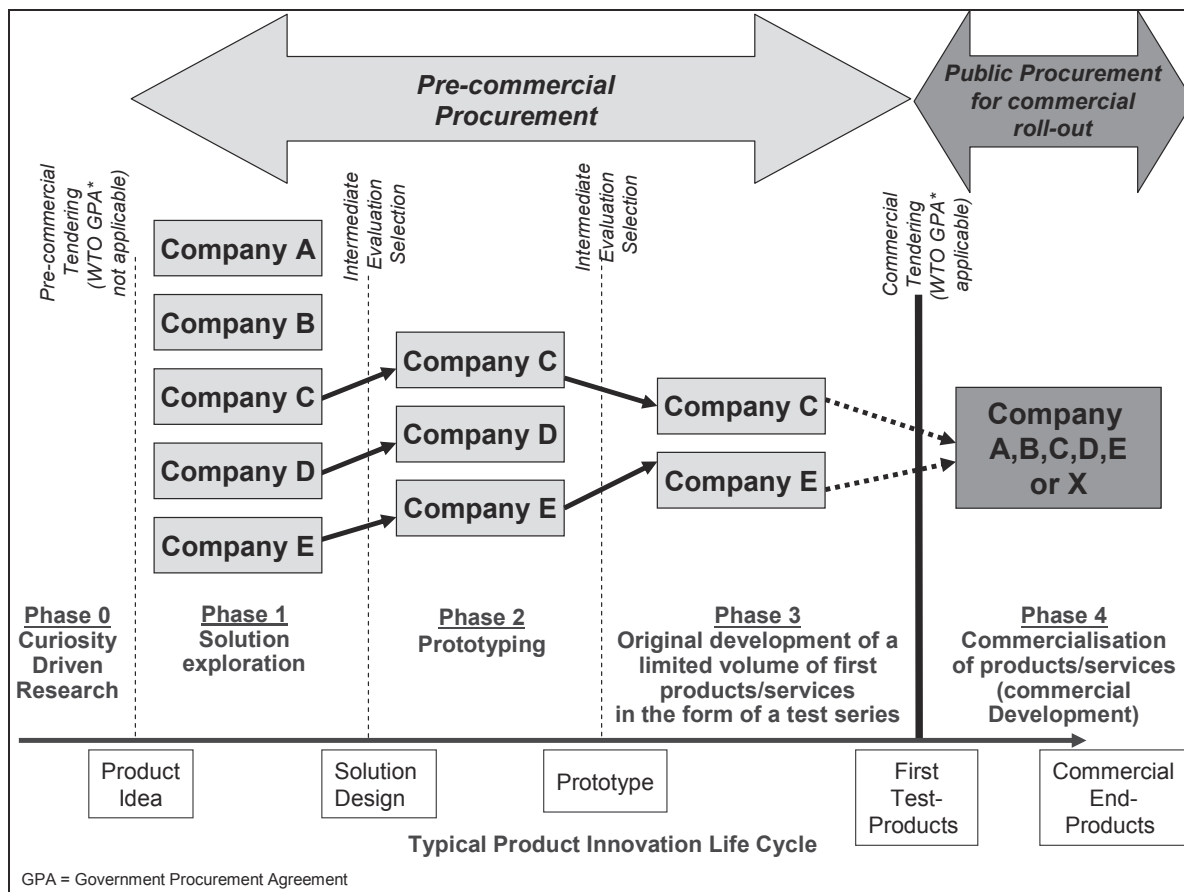


Figure A: Illustration of a phased pre-commercial procurement process

Such phases would typically cover solution exploration, prototyping and original development of a pre-commercial volume of first products in the form of the test series. In this case, the procurement phases can be described as follows:

- 1) Phase 1 (solution exploration phase) aims to verify the technical, economic and organisational feasibility of each company's proposal against the pros and cons of potential alternative solutions. The output of this phase typically includes a technology evaluation, a first solution design, an organisational plan for phase 2 and a costs/benefit evaluation of the proposed solution.
- 2) Phase 2 (prototyping) aims to verify to what extent the main features exhibited by the prototype meet the functional and performance requirements set forward by the public purchaser for the desired solution. The main output of this phase normally includes a prototype specification and demonstration, as well as a plan for limited first product development and testing and an updated cost/benefit evaluation.
- 3) Phase 3 (original development of a first batch of products validated through field tests) aims to verify and compare the performance (interoperability, scalability, etc) of different solutions in real-life operational conditions of the targeted public service. The main output of this phase usually includes a test product specification, a field test and an updated cost/benefit evaluation.

The number of phases can be adapted according to the complexity of the project. For example, each of the three phases above can be split further into sub-phases.

A key characteristic of the approach presented is to solicit multiple companies in competition to come up with alternative solution proposals to address a particular problem of public interest. Intermediate evaluations after the solution design and prototype development stages allow for a progressive selection of companies with the best competing solutions. In the final R&D phase of the pre-commercial procurement project at least two companies remain to ensure a future competitive market with possibilities for multiple vendor sourcing.

The number of companies to start with in the first phase in order for at least two companies to remain in the final R&D phase, can be estimated from the R&D success rate in the particular application field in question. In order to check whether a pre-commercial procurement with the chosen number of suppliers will be worth its investment it is advisable that the public purchaser also makes his own business case, answering the question: "What percentage of the estimated economic value that the innovation can bring to the public authority – in terms of cost saving and/or public service quality improvement - can the public purchaser afford to spend on the development of solutions that are needed to realize this innovation, given the R&D risk of that particular project and the time it takes for the R&D trajectory?"

Pre-commercial procurement is a "public contract other than a public works or supplies contract having as its object the provision of services". The approach presented sets out all the phases in one tender and assumes that the total value of the services over all the phases in question exceeds the value of products covered by the contract. Otherwise the provisions for R&D supply contracts apply⁷.

In cases where the state of the art has already progressed beyond first solution design, the pre-commercial procurement process can start with prototyping or even with first product development up to test series.⁸

3. DECIDING UP FRONT WHETHER OR NOT THE PROJECT SHALL CONTAIN A STATE AID ELEMENT

Article 87 of the Treaty provides that any aid granted by a Member State or through State resources, in any form whatsoever, which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall be incompatible with the common market, in so far as it affects trade between Member States⁹.

In case the pre-commercial procurement approach is applied, it is critical to check whether or not a company participating in the procurement receives an advantage. This will depend on the terms of the contract between the public purchaser and the companies.

As a rule, the relationship between the public purchaser and the company within the pre-commercial procurement should not include an aid element, and this should be excluded through the appropriate design of the contract. Where public authorities buy R&D from companies at market price, there is no advantage and consequently no element of State aid.

⁷ Article 31(2)(a)/40(3)(b) of directives 2004/18/EC respectively 2004/17/EC for R&D supply contracts covers "products manufactured purely for the purpose of research, experimentation, study or development."

⁸ In pre-commercial procurement contracting authorities can thus become the owner of products covered by the contract (e.g. prototypes and first test products developed during the project) if the value of the acquired products does not supersede the value of the R&D services covered by the contract.

⁹ Article 87(1) of the EC Treaty

If a given measure were to be qualified as State aid under the above criteria, the question arises whether such a measure could be considered as compatible with the Common market in accordance with at least one of the provisions of Article 87(2) or (3) of the EC Treaty, or with the specific rules laid down by the Commission in application of the above provisions. For these reasons, before choosing the suitable measure to act, the public authority should clarify whether the measure contains a State aid element. If the answer is yes, then the public authority should follow the rules of the State aid framework for R&D&I¹⁰, select the appropriate aid measure and notify it in the appropriate way to the Commission before granting the aid¹¹ (unless covered by a block-exemption regulation¹²).

The following section illustrates how buying at market price can in principle be ensured in the case of the pre-commercial procurement approach presented where risk-benefit sharing takes place.

4. DEFINING RISK-BENEFIT SHARING CONTRACT ARRANGEMENTS ACCORDING TO MARKET CONDITIONS

In pre-commercial procurement the contracting authority does not assume all the results and benefits of the R&D services performed in the contract exclusively for itself for use in the conduct of its own affairs, but shares them with others.

In this case Article 16 (f) of the public procurement Directive for public authorities (2004/18/EC) and Article 24 (e) of the public procurement Directive for utilities (2004/17/EC) are applicable: "This Directive shall not apply to public service contracts for research and development services other than those where the benefits accrue exclusively to the contracting authority *for its use in the conduct of its own affairs*, on condition that the service provided is wholly remunerated by the contracting authority."

Sharing benefits outside the pre-commercial procurement project

Sharing R&D results and benefits with the public sector and industry outside the pre-commercial procurement project can be done through e.g. (i) Wide publication of the R&D results after completion of the pre-commercial procurement, and/or (ii) Contribution to standards bodies in a way that allows other stakeholders to reproduce the results of the R&D.

¹⁰ Or any successor document.

¹¹ If the appropriate procedures are not followed and public authorities do not properly identify and quantify any State aid element before granting the aid, the supplying company runs the risk of having to repay the aid later. The jurisprudence of the European courts excludes that the benefiting company can invoke the responsibility of the government in order to avoid recovery.

¹² The Commission intends to exempt certain types of aid for R&D&I from the requirement of prior notification by 1.7.2008; one essential requirement of a valid exemption from the need for prior notification is that the aid is clearly identified as State aid. Consequently, it is excluded that Member States can justify an aid element in individual contracts in case of a complaint ex post with the argument that the aid intensity does not exceed the permissible aid level for aid for R&D&I.

Risk-benefit sharing with participating companies

In order to ensure that such an approach of sharing R&D results outside the project is beneficial for the public purchaser and companies participating in the project, R&D risks and benefits are shared between them in such a way that both parties benefit of actively promoting wide commercialisation and take-up of the newly developed solutions.

As explained in more detail below, in order not to disturb competition to exclude elements of State aid, it is essential to ensure that the risk-benefit sharing takes place according to market conditions and that the Treaty principles¹³ are respected throughout the procurement process. To limit the financial risks of the public purchasers and to ensure equal chances for all potential bidders, it is important to fix the contract conditions up front and clearly describe all rights and obligations of both parties in the contract notice. It is also helpful for the public purchaser to work with a price range indication in the contract notice to extract the best offers at market price: this ensures a certain minimum quality level of incoming bids, while still allowing companies to compete on price. Requiring companies to submit fixed price offers has the advantage that companies are responsible to cover at their own expense any additional unforeseen costs in their individual design that they may incur above the fixed price they have committed to in their bid. Thus the public purchaser and company share the financial R&D risks as the planned versus unexpected development costs are covered by the public purchaser respectively by the individual companies.

In exclusive development contracts, in return for bearing all the development risks, the contracting authority obtains exclusive rights to all results and benefits resulting from the development contract, such as the Intellectual Property Rights or IPRs. However, there are disadvantages to this approach when the public purchaser does not need exclusive rights¹⁴: The public purchaser will pay the expensive price of exclusive development; the company is not able to re-assign people involved in the development to other projects (because of the risk of inadvertently breaking IPRs) and is not allowed to re-use the results for other customers. It is clear that such arrangements are not conducive to innovation.

Therefore, when the public purchaser does not require exclusive ownership of all R&D benefits, IPRs is one of the possible areas where both risks (filing/litigation costs and the exploitation responsibilities) and benefits (the rights of use and licensing incomes) can be shared between public purchasers and companies participating in the procurement. It is in both parties' interest to share the IPRs in such a way that promotes wide commercialisation and take-up of the newly developed solutions¹⁵. This could involve public purchasers

¹³ In particular the fundamental Treaty principles on the free movement of goods, the free movement of workers, the freedom to provide services, the freedom of establishment and the free movement of capital, as well as the principles deriving there from, such as the principles of non-discrimination, transparency and equal treatment

¹⁴ Report of the Independent Wilkinson Expert Group lead by DTI, 'Public Procurement for research and innovation: Developing procurement practises favourable to research and innovation', September 2005

¹⁵ Benefits of promoting *wide commercialisation* are that the more additional markets (e.g. private market) beyond the initial public purchaser the IPR protected technologies can be used in, the cheaper product prices become for the public purchaser and the higher the value of the exploitation rights for the companies. Additional benefits of promoting *wide take-up* inside the public authority are that the more potential users for the developed solutions at the public purchaser side, the higher the value of its rights to license free usage. For this reason, projects involving the development of dual-use technologies (project with large market potential both in public and private sector) would be interesting candidates for pre-commercial procurements.

relinquishing all or part of the ownership rights on company generated IPRs¹⁶, thereby allowing companies to make profits from commercialising new products and services resulting from the R&D. In return companies would typically be responsible for making the necessary arrangements for the protection of company generated IPRs resulting from the project and public purchasers would obtain suitable license free usage of the newly developed technologies and solutions. In order to ensure access to a sufficiently large and competitive supply chain the public purchaser would typically also obtain the right to require the participating companies to license out the developed solutions to third party suppliers under fair and reasonable market conditions, and participating companies would typically not be allowed to pass on the IPR ownership without the consent of the public purchaser. A call-back provision could ensure that IPRs from companies that do not succeed to exploit the IPRs themselves within a given period after the project would return back to the public purchaser¹⁷.

There are a number of advantages of such IPR arrangements that leave ownership of company generated IPRs with the companies¹⁸. First, through the license free usage rights, the public purchaser is likely to also require access to some background technology which was not developed under the pre-commercial procurement contract. Such access is most easily secured in a package deal arrangement under which the company owns the contract results. Second, suppliers are usually better placed than the public authority to exploit the results of the contract. Third, the owner of the IPRs needs to secure appropriate protection in order to preserve the contract results for exploitation. This involves costs of filing/maintaining IPRs and litigating IPR disputes in courts. By leaving company generated IPR ownership with the companies participating in the procurement, the public authority avoids taking the risk that the payments necessary to secure protection might not secure an adequate return in exploitation income. Lastly, it also helps to keep expensive customisation at a minimum if the company can consider the project to be an investment in intellectual property, which could be re-applied later as a building block for other projects.

Making sure that risk-benefit sharing contract arrangements are according to market conditions

According to the Community Framework for State aid for Research, Development and Innovation "Public authorities may commission R&D from companies or buy the results of R&D from them. If such R&D is not procured at market price, this will normally involve State aid within the meaning of Article 87 (1) EC Treaty. If, on the other hand, these contracts are awarded according to market conditions, an indication for which may be that a tender procedure in accordance with the applicable directives on public procurement has been carried out, the Commission will in principle exclude the presence of State aid within the meaning of Article 87 (1) EC Treaty."

This section explains how buying at market price can be ensured when sharing of benefits (e.g. related to IPRs) between public purchasers and companies participating in the procurement takes place.

¹⁶ A balanced agreement could be that public purchasers are allocated (and pay for the acquisition and protection of) the ownership of public purchaser generated IPRs, companies the ownership of company generated IPRs, and jointly generated IPRs are jointly owned.

¹⁷ Variations on the IPR arrangements are possible e.g. depending on the situation of the sector.

¹⁸ Refer to recommendation 8.52 and 8.53 of 'The Race to the top: A review of government's science and innovation policies', Lord Sainsbury of Turville, October 2007. Refer for more detail also to Section 3.4, page 17 of 'The Ministry of Defence guide to Intellectual Property', UK MOD, September 2003

For exclusive development projects, where all resulting IPRs are owned by the public purchaser, participating companies should not receive any advantage if the price paid does not exceed the costs of the company plus a reasonable margin. In the pre-commercial procurement approach presented, where IPRs are not fully allocated to the public purchaser, the price paid by the public purchaser for the pre-commercial development must be lower than in the case of exclusive development in order to exclude a State aid element. The price reduction compared to exclusive development cost should reflect the market value of the benefits received and the risks assumed by the participating company¹⁹.

When the distribution of rights and obligations is decided upfront and published in the tender documents, the public purchaser can estimate up front the future economic benefit of IPRs for the companies based on the future potential market for the solutions to be developed, the number of companies in the particular segment etc. This can then be used to set the maximum price for the indicative price range for the tender. When the distribution of rights and obligations of the parties is published upfront in the tender documents, all potential companies have equal chances to bid against the same contractual conditions and prices are thus comparable. Therefore, if the distribution of rights and obligations is published upfront in the tender documents and the tender has been carried out in a competitive²⁰ and transparent way in line with the Treaty principles¹³ which leads to a price according to market conditions, and does not involve any indication of manipulation, then this should normally enable the state to establish the correct (best value for money) price for the R&D service, in which case the presence of State aid can in principle be excluded according to the definition contained in Art. 87 (1) of the Treaty. The pre-commercial procurement approach described is based on one single framework contract for the three phases, in which the distribution of rights and obligations of the parties is published upfront in the tender documents and which does not involve contract renegotiations on rights and obligations, including the allocation of IPRs, taking place after the choice of participating companies.

National or regional authorities in charge of innovation policy or the Community can use financial incentives²¹ to encourage contracting authorities to identify mid to long term challenges that would require new R&D to develop solutions and launch pre-commercial procurement projects to address them. In case financial transfers would be used between public authorities to assemble the necessary money for the pre-commercial procurement, in order to avoid that such transfers between public authorities would constitute State aid care should be taken that they do not result in benefits passed on in a selective way to private undertakings. Therefore Member States must exclude that such incentives are wholly or even partly passed to the companies through higher prices (above market price) paid by the public purchasers.

In case of doubts on State aid issues, Member States should notify the measure to the Commission in order to exclude that the contract contains an element of State aid or to establish that the measure constitutes a compatible State aid.

¹⁹ In case of IPR sharing, the market price of the benefits should reflect the commercialisation opportunities opened up by the IPRs to the company, the associated risks assumed by the company comprise for instance the cost carried by the company for maintaining the IPRs and commercialising the products.

²⁰ With a competitive tender is meant when different companies have been able to make competing offers

²¹ For example, the Dutch ministry of Economic Affairs gives a one-time financial incentive to other government departments engaging in their first pilot R&D procurement project organised in phases with multiple competing suppliers.

5. LAUNCHING, EVALUATING AND CONTRACTING IN A TRANSPARENT, OBJECTIVE, NON-DISCRIMINATORY WAY

Launching

The use of functional specifications, for instance, enables the public purchaser to formulate the object of the pre-commercial procurement tender as a problem to be solved without prescribing a specific solution approach to be followed. The use of competitive tendering²⁰ fosters innovation through competition. The intention to select multiple companies to start the project in parallel should be announced in the contract notice. Tenders are published as widely as potential bidders can be expected to be located, which is in line with the Treaty principles¹³. Public purchasers have to evaluate all offers according to the same objective criteria regardless of the nationality of the bidder.

Making optimal use of the described approach helps the contracting authority to ensure that maximum competition is sought and the fundamental Treaty principles, such as the principle of non-discrimination, as well as the principles derived there from, such as the principle of transparency, are respected. The Main Parties to the WTO Agreement on Government Procurement (GPA), including the EC, have excluded R&D services²² from the scope of the GPA, i.e. both from the national treatment²³ and the non-discrimination obligation. Except for the EEA and Stabilisation and Association Agreements with partner countries of the European Neighbourhood Policy, the EU has no national treatment and non-discrimination obligations vis-à-vis other parts of the world for the procurement of R&D services³, but it does for supplies²⁴.

As pre-commercial procurement concerns R&D services, public purchasers can decide case by case on the openness to worldwide offers and on the relevant conditions, taking into account the full potential of the European Research Area²⁵. This means that the procurement process could be organised so as to stimulate companies to locate a relevant portion of the R&D and operational activities related to the pre-commercial development contract in the European Economic Area or a country having concluded a Stabilisation and Association Agreement. Allowing companies from anywhere in the world to make offers regardless of the geographic location of company head offices or their governance structure would be an open and effective way for Member States to promote the creation of growth and jobs in Europe without excluding non-European firms.

Evaluating and contracting

The following award criteria can be used to award the contracts: 'ability to address the problem posed in the tender', 'technological quality & innovativeness of the proposal', 'added value for society/economy of the proposal'. The 'added value for society/economy' criteria can besides plain cost aspects also take into account the added value the proposal brings with regards to improving public services and the associated benefits for the whole society and economy. The criteria that are chosen must be specified in such a way as to be readily understandable, quantifiable and verifiable.

²² Annex IV of WTO GPA.

²³ The national treatment obligation implies that Members do not operate discriminatory measures between domestic services or service suppliers and foreign ones.

²⁴ This obligation does not only concern commercial end-products. R&D supply contracts are also not exempted from the non-discrimination obligation.

²⁵ COM(2007)161, Green paper on ERA.

The framework contract should preferably contain an agreement on the future procedure for implementing the different phases, including the format of the intermediate evaluations after the solution design and prototype development stages that progressively select companies with the best competing solutions. The intermediate evaluations can make use of the same criteria used for contract award. The tender specifications can become progressively more specific with each phase.

6. FOLLOW-UP PUBLIC PROCUREMENT FOR DEPLOYMENT OF COMMERCIAL VOLUMES OF FINAL END-PRODUCTS

Leaving a clear separation between the pre-commercial R&D phase and the roll-out of commercial end-products resulting from the R&D enables public purchasers to filter out technological R&D risks before committing to procuring a full-blown innovative solution for large-scale commercial roll-outs.

Moreover at the start and during the pre-commercial procurement process the public purchaser should keep in mind that no action in the pre-commercial procurement procedure might preclude competition in the procurement for commercial roll-out when the public procurement Directives are applicable.

European Commission

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