

## Feasibility study for the Design and Implementation of Demand-side Innovation Policy Instruments in Estonia

### **Case Study on the demand-side elements of the Danish innovation policy mix, the *Market Development Fund* and the *Building Regulation***

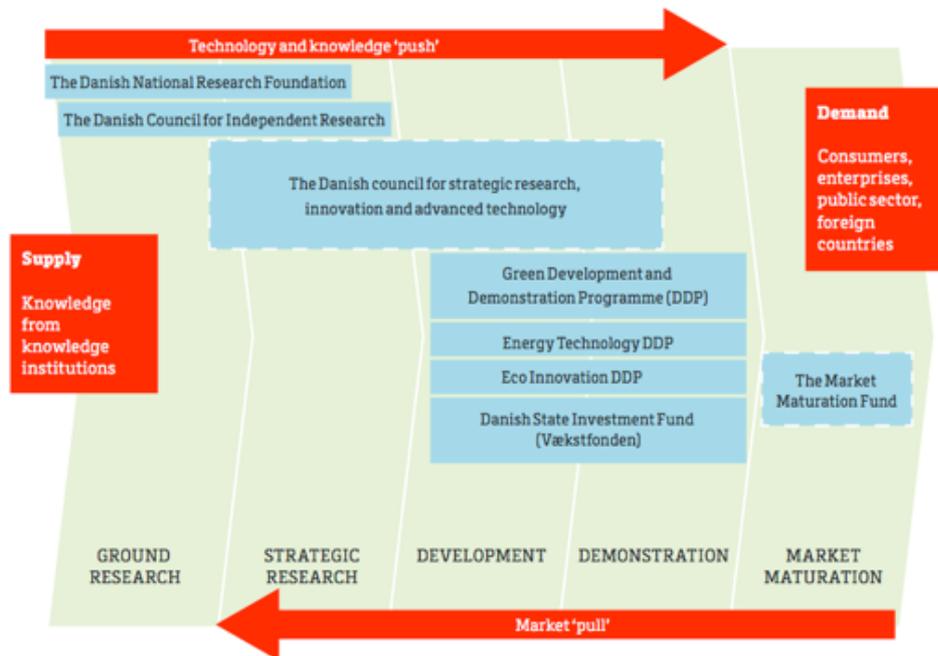
#### **1. The Danish Market Development Fund and its policy context**

The Market Development Fund helps on the one hand enterprises to connect with the customers on the market, and on the other hand it targets public-sector institutions and support them in obtaining innovative solutions. It is a continuation of a former policy measure called the Business Innovation Fund.

The Fund is a combination of **user-centred innovation** (market demand), **procurement** and **pre-commercial public procurement** (public demand) measures. Its particularity is its close-to-market orientation. It seeks to assist Danish enterprises in overcoming the barriers encountered in the market development phase, e.g. by providing co-funding for the testing and adaptation of an enterprise's innovative prototypes on-site for prospective customers or by providing a guarantee to give reassurance to the buyers of innovative new products. Approx. €18m is allocated for the Fund each year from 2013 up till 2015.

The Market Development Fund has filled a previous gap in the research and innovation system, notably the market introduction stage and the side of the so-called market pull (please see Figure 1). As the Danish innovation strategy stipulates the "government will support innovation in enterprises through strong framework conditions, intelligent demand, a strong knowledge base, and a well-educated workforce. Regulations in specific thematic areas such as energy, environment, and safety provide a business framework condition that can influence innovative behaviour. Although there is no specific programme on 'intelligent regulations' in Denmark, there have been some efforts to strengthen the considerations with regard to innovation before the introduction or revision of regulations and certain regulations such as the building and energy regulations have been assessed in terms of their impact on innovation (see further the second part of the Danish case).

Figure 1 Danish research and innovation policy mix



Source: Danish national innovation strategy, 2012

At the demand-side it complements other initiatives such as the MindLab, a cross-governmental innovation unit that has the aim to involve citizens and businesses in developing new solutions for the public sector. The Market Development Fund is also organising wider partnerships. For instance the partnership for health and medical innovation is led by a steering committee composed of representatives from the Market Development Fund, regional authorities and the Ministry of Health.

## 2. Rationale

The aim of the Market Development Fund is to promote growth, employment and export, particularly for small and medium-sized enterprises in areas where Denmark has particular strength and potential. Favored areas include green technology, new materials, health and welfare solutions, design and other creative professions; however, the measure does not have a specific sectoral focus when selecting the projects. The goal is to support all innovations that can create jobs whatever sources this can come from. Market development entails activities, which help to open up markets for enterprises' innovative products and services.

## 3. Design

The Market Development Fund is the successor of the User-driven Innovation Programme (2006-2009) and the Business Innovation Fund (2009-2013) that was launched upon the initiative of an independent Board of Directors composed of representatives from Danish companies. Listening to the voice of businesses, the aim was to fill the gap of the Danish R&I system that provided several funding opportunities to support research and innovation, but did not support the very last stage of market introduction. This last stage is when the proto-type and the proof of concept are ready, but the proof of customers, proof of business is yet missing.

Figure 2 Timeline of Danish measures related to user-driven innovation



Originally the Business Innovation Fund financed both innovation projects (from idea to the proto type) and so called market maturation projects (from the proto type to the market). It addressed **two thematic fields**: green innovation and health. The Market Development Fund, however, is only continued the strand on market maturation and public procurement as the other stages are already covered by other measures. This also meant an effort to make the policy mix more transparent and easier to understand for businesses and other innovation actors and was part of the objective set in the 2012 national innovation strategy to simplify the system. Moreover, the budget for the Market Development Fund comes from different sources as the Business Innovation Fund. The State Aid rules also allow for financing projects at this stage. It has to be also noted that prior to the Business Innovation Fund, Denmark implemented a ‘user-driven innovation’ programme between 2007 and 2010, where the experiences and practices of the programme were integrated into the Business Innovation Fund and later into the Market Development Fund.

The Danish Ministry of Economic and Business Affairs funds the Market Development Fund. The Business Innovation Fund was launched by the former Danish Enterprise and Construction Authority. Today, it is the new Danish Business Authority responsible for the implementation of the Market Development Fund.

An independent, professional board of directors has been set up for the Fund, comprising a chairman and seven members appointed by the Minister of Business and Growth. The board of directors holds the decision-making power of the Fund and decides on the application of the funds based on a guiding limit, which is approved by Parliament on an annual basis. The Fund is administered by the secretariat of the Danish Business Authority.

#### 4. Implementation

The Market Development Fund has 3 strands that are implementing its objectives:

- ‘faster to market’ strand
- ‘public procurement’ strand
- business partnerships.

It has to be noted that there is no real separation between demand and supply side activities, but the demand and supply elements are combined in each step.

The **‘faster to market’** strand refers to the ‘market maturation fund’ that has the objective to finance projects that directly test new products and services on the customers. It is obligatory to involve a client directly to the project. Companies can apply for funding to test and adapt their product or service in a realistic environment or a prospective customer’s site and to adapt the prototype/concept to strengthen the solution’s commercial potential.

The total project budget must be at least 3m Danish kroner and the projects should be implemented in maximum 3 years.

The co-financing depends on the size and type of the applications:

- Small businesses can get up to 60%;
- Mid sized businesses can get up 50%;
- Large companies can get up to 40%;

- Public institutions can get up to 50%.

There are five award criteria notably:

- Novelty of the project;
- Market and business model;
- Qualifications and relevant cooperation;
- Growth and employment effects;
- Additionality of the project.

Another part of this strand is the **guarantees**, where firms are assisted by a guarantee to mitigate buyers' uncertainty about investing in new technology, thereby boosting a solution's commercial market prospects. The guarantee applies to the unique situation where the product's innovative aspect does not function as expected and as in the contract and based on the product specification in the sales agreement. Your application must describe the substance of this innovative aspect. The buyer has a 20% own risk, which means that if the buyer chooses to redeem the guarantee, the maximum refund will be 80% of the purchase price.

The '**public procurement**' element aims to make it easier for public-sector institutions to obtain innovative new solutions. By specifying requirements in new ways, the public sector can help to target enterprise innovation, so enterprises develop better solutions that may even cost less. An innovative purchase could involve buying familiar products but combined with innovative new services, to reduce operating costs and provide better service for citizens at the same time. Or it could be to demand brand-new solutions not yet available on the market or which require the public-sector partner to enter into public-private development cooperation.

Public-sector players like municipal and regional governments can receive funding to cover expenses relating to the phases leading up the actual purchase of innovative solutions, e.g. internal hours and external costs.

Two phases are supported:

**Phase 1:** in-depth needs analysis across disciplinary boundaries and user groups, identifying needs, engaging in market dialogue, selecting the type of public procedure; and

**Phase 2:** the actual drafting and implementation of public procedures, drafting of the functional requirements, deciding on the form of innovation procurement (pre-commercial procurement of a development activity, but not a real solution ) or another form of public-private development cooperation.

The Market Development Fund does not finance the public purchase itself.

The '**business partnerships**' strand is a small part that creates platform to discuss topics such as in the area of design and creative digital production. This is an attempt to strengthen commercial competences in this area.

Partnerships exist in the area of health, clean-tech, welfare technology, climate adaptation and they involve regional authorities and the relevant ministries along these themes.

## 5. Monitoring, evaluation and impact

The Market Development Fund is a recent measure and has not yet been evaluated. Nevertheless it is a continuation of the Business Innovation Fund and the User-driven Innovation Programme that went through an evaluation and the impact and results of these initiatives are better understood.

The 'User-driven Innovation Programme's midterm progress was evaluated in 2009 by DAMVAD a research-based consultancy with the purpose to explore the preliminary effects and find out whether the programme meets its objectives. The Danish Programme for User-driven Innovation<sup>1</sup> was launched in 2007 and ran till 2010 with the objective to helping companies and public sector institutions integrate customer experiences in their product development processes, to facilitating access to skills and competencies in the assessment of user needs, and to fostering the use of user surveys. The programme has been administered by the Danish Enterprise and Construction Authority and had a €13.5m budget per year.

Applicants from both the private and public sector took part, including educational institutions, cultural institutions, and knowledge institutions. To obtain grants from the programme, projects had to examine user needs in new ways. This included, for instance, the development and testing of new methods and tools, building competencies, training, networking, or knowledge dissemination.

Themes were selected from year to year and were related to areas with particular business competencies, for instance environment and energy technology, construction, health, design, and foodstuffs; cross-sectoral issues relating to societal problems with promising market potential, for example healthy and energy saving construction, or fighting obesity and welfare areas.

The evaluation of this programme covered 48 projects that received a grant in 2007 and 2008. Private actors represented 66%, public service (including public administration, education, elderly and care, and hospital sector) represented 18% and knowledge institutions (including universities, university colleges and approved technological services) accounted for 16% of project participants.

**The analysis found** that 74% of the companies developed or were expected to develop innovative products centred around user demand. Approximately two-thirds of the project participants would not have initiated similar activities without the support of the programme. Positive correlation was found between the use of certain methods for user-driven innovation and innovation impact of the projects. In industry a positive association was found between the identification of non-recognised user needs and innovation. The evaluation concluded that the participation contributed to a strengthened relationship with users. Projects were much more interdisciplinary than other programmes, as measured by the width of the actors involved in projects and the areas they represent.

However, the evaluation also showed that project participants continued to experience **a number of barriers** to user-driven innovation, particularly lack of knowledge of users' unrecognised needs, and lack of internal focus and resources for user-driven innovation. It was highlighted that it is not straight forward that uncovering user needs leads to innovation. Innovation from users takes time and requires the involvement of top management in firms.

In 2009, the User-driven Innovation Programme had been integrated into the Business Innovation Fund with the objective to promote growth, employment and export. The new Fund prioritised two areas notably green growth and welfare. Different to the Market Development Fund, besides the market maturation (user-driven) projects, it also supported general innovation projects.

The Business Innovation Fund had a mid-term review in 2012 carried out by Deloitte. **The key findings** were that the Fund met the original goals and supported firms to overcome critical barriers (Deloitte, 2012). The Fund supported 80 innovation and market maturation projects with approx. DKK340m. The projects resulted in increased sales and exports and they helped companies overcome critical barriers in access to capital or customer confidence in new products.

Currently, the Market Development Fund has a monitoring system.

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<sup>1</sup> [http://www.w2l.dk/file/17694/insight\\_into\\_user\\_driven\\_innovation.pdf](http://www.w2l.dk/file/17694/insight_into_user_driven_innovation.pdf)

Two key indicators are monitored:

- new jobs created,
- growth in exports.

The project owners have to report about their progress approx. in each 6 months and will have to report also 5 years after having finished the project. They have to report if the original figures are lower or higher and how they change.

The projects run 2-3 years, soon the first results will be visible and the programme can be evaluated.

The Danish Business Authority maintains a database about the projects, their key performance indicators and progress.

## 6. Future plans

There are not yet future plans, these measures are relatively new and first they have to be implemented in order to see how they could be better adapted later on. The Danish Business Authority also launched a survey among 5000 companies investigating the actual market barriers and to get more inspiration how the measure could be improved.

## 7. Lessons learned

It is usually harder for service companies than technological companies to apply to the fund, although this should be changed. It is one advice that could be paid more attention to in Estonia.

A lesson is that innovative companies are usually strong in technical capabilities, but less advanced in terms of commercial and marketing skills. An assistance to raise these skills accompanied by the measure would be beneficial.

Fostering innovation public procurement among municipalities is harder than one thinks. There are lots of traditional mindsets and old practices that are not easy to change. The change management aspect should not be underestimated and should be carefully planned.

There are related initiatives launched for instance at the regional level there is the OPI Lab, the Open Private Innovation Lab that offers assistance about procurement. The Danish Competition and Consumers Authority runs programmes as well related to procurement.

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### 1. The Buildings directive and its policy context

Denmark has introduced performance-based requirements in the ‘Building regulations’ in 2004. The objective was to promote the development of new types of buildings by providing for more flexibility in the design and layout of a new building without compromising on safety. The new requirements of a **‘smarter’ regulation** meant basically creating demand for more innovative solutions.

The buildings directive was linked to innovation policy, however, there were no specific linkages established with any other policy measures.

### 2. Rationale

The rationale behind the using ‘smart regulation’ in building regulations was that this can become an important engine for innovation.

Regulation is usually based on a delicate political balance between several important considerations and can therefore rarely be revised simply to promote private sector innovation. On the other hand, if there is broad support and a political willingness to obtain certain societal transformation, new regulation is possible.

**The idea of smart regulation** is to use private innovation to obtain a faster and more radical transformation of a certain area of political interest and at the same time stimulate private innovation and wealth. Smart regulation can be used when governments collaborate broadly with industry and non-government organisations to formulate a new regulation, and when regulation is formed to encourage a certain innovative behaviour.

### 3. Implementation

FORA (2011) made an analysis of the impact of these regulations on innovation based on interviews with companies. The interview questions focused on the overall effects of the new regulations and if there have been new products and services developed as a result. It analysed several of the new features of the regulations.

Figure 3 Effects of the regulatory acts on innovation activities of firms

	Product- or process innovation	Access to new international markets	Access to the construction industry for established companies from other sectors	New multidisciplinary collaborations
Performance based fire requirements	X	X	X	X
The Energy Performance of new buildings - Windows	X	X	X	X
The Energy Performance of new buildings - lighting	X	X		
The Energy Performance of new buildings - ventilation	X	X		
Accessibility	X			
Biomass boilers	X			
ISO 9001 – Quality Management Systems	X			

Source: FORA, 2011

The analysis of FORA demonstrated that recent regulation in the construction sector had indeed addressed societal challenges while at the same time it had positively affected innovation. A wide range of companies introduced new products, materials and processes or improved existing products as a result of new regulations.

New products were introduced to the market that were innovative or were an improved solution, a new product design or using new materials such as for example sprinklers, overpressure in staircases, new fire escalators, fire ventilation etc.

New buildings and houses were designed that would not have been possible under the previous regulation regime, moreover these solutions proved to be on demand internationally as well resulting in additional exports. The study also found a cross-sectoral impact of the regulation meaning that it also opened up new markets for companies from other sectors such as design, business consultants etc.

#### 4. **Lessons learned**

- The impact of regulations on innovation should be analysed and monitored.
- Regulation can be used smartly to stimulate innovation that authorities have to be aware of.
- Smart regulation can be trickier as one thinks given its long-term character and the uncertainty in terms of market and technology development (FORA, 2011).

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Øster J., Napier G. and Hvidberg M. (2011). How intelligent regulation can become an active element in Danish innovation policy - Based on cases from the Danish construction sector. FORA. Danish Enterprise and Construction Authority

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