

Towards a Common Strategic Framework for EU Research and Innovation Funding

ESB Response to European Commission Green Paper

Introduction

Electricity Supply Board (ESB) welcomes the opportunity to respond to the Green Paper on research and innovation funding. The timing of its publication, during the period of EU-wide discussions on the next EU Multiannual Financial Framework (MFF) and the latter period of discussions on the priorities for Framework Programme 8 (FP8), will allow for consistency in decisions and stimuli for increased innovation across the EU over the medium term.

Innovation, rather than speculation, is essential for sustainable economic growth and recovery across the EU. The EU will fall further behind the fast developing economies of Asia and the USA unless real measures to enhance research, demonstration and innovation are implemented as soon as possible.

There are many “grand challenges” facing the European Union including energy security, climate change and sustainable mobility. These challenges can act as a stimulus for innovation and sustainable growth and it will be important that a set of effective measures to maximise the innovation opportunity that these challenges provide is adopted across the EU.

In this response ESB suggests a number of initiatives that it believes will boost innovation, lead to increased employment opportunities and sustainable growth across the EU.

Near-Term Wins for Europe

ESB agrees that Europe requires to increase the intensity of research, development and demonstration from the level of 2% EU-GDP, as measured for 2009, to a level in excess of 3% in order to keep pace with other global economies. While ESB considers it unlikely that member states will agree to an increase in direct EU-Budget funding beyond today's 1% contribution of each member state's GDP, other pan-EU financing measures will require to be implemented in order to achieve MFF requirements. In addition, fresh thinking on how to encourage private sector funding of research and development is required (see ESB proposals in this document) in order to increase the overall level of RD&I expenditure at least to the equivalent level in other jurisdictions.

For the post 2013 MFF, agreement on the allocation and sub-allocation of EU-Budget will support the required increased funding of research, development and demonstration. For the remaining years of the current financial framework (2011-2013), increased focus on ways to secure Venture Capital funding should be sought, for example through:

- Following practices employed in non-EU jurisdictions;
- Leveraging public procurement policy (see later); and
- Developing innovative financial instruments similar to the Risk Sharing Finance Facility (RSFF) or the Europe 2020 Project Bond initiative;

At present there are multiple funds and supporting financial mechanisms available to support research across Europe. The rules surrounding their applicability and governing their award and subsequent administration are significantly different and complex. As these are ‘public monies’, it is necessary that there is a sufficient level of control over their administration. However, complexities in understanding their applicability, level of administration involved, cost and time overheads and effort spent securing funding or finance for research, demonstration and commercialisation through them, are potentially limiting their appeal and the degree to which some businesses that could make best use (e.g. SME), are availing of them.

In the interests of improving awareness of and easing access to EU-wide funding and finance, ESB suggests that:

- **Consolidation** of funds and financial instruments under a small number of themes, directly associated with the ‘grand challenges’ under EU 2020 targets should occur;
- **Consistency** in the administration procedures across the enduring funds and financial instruments, and between those institutes with responsibility for their management should be implemented;
- Outreach initiatives, to **communicate** in good time with those stakeholders and industry sectors best positioned to leverage available funding and complementary finance to deliver innovative solutions to the “grand challenges”, should be significantly expanded;

Each of the “grand challenges” will require many innovative solutions in order to declare a successful conclusion. In many sectors, the innovation cycle can be shorter than the timeframe necessary to construct a consortium, make a formal submission for funding, subsequent award decision to be made, the consortium legal agreements to be finalised and funds transfer to occur. All businesses with innovative ideas require swift access to funding in order to complete applied research, product development and commercialisation.

In furtherance of timely access to funding and finance, ESB suggests:

- The introduction of a set of ‘**pre-qualification**’ criteria for businesses to enable “fast-track” access to funding within predefined (tiered) financial levels. These criteria could, for example, be based on previous successful history in award of funding or track-record in product or service innovation;
- For businesses that don’t readily ‘pre-qualify’ based on chosen criteria, **Member States** could be required to **vouch** for the credentials of the funding applicant through **matching any funding** provided from Europe;

- An **increase** in the level of **up-front funding** provided, in order to reduce the delays in the business advancing its research, demonstration or commercialisation work-plans, which could otherwise arise should it be required to secure initial capital from other sources;

For innovators at the leading edge of technology and services there is a race to market. While EU funding adds credibility to that area of technology or service advancement, these innovators have limited bandwidth for EC administration and due diligence timescales. Innovative companies face many hurdles to get their products or services to commercial stage, even in instances where the innovation involves reapplication of technologies or services from other sectors. Funding or finance which is accompanied by significant overheads in terms of timeframe and administration will not favourably align with innovation cycles.

Medium-Term Wins for Europe

The EU 2020 targets and associated “grand challenges” provide a significant focus for research, demonstration and innovation for the coming years. In order to deliver on the 2020 targets, significant technological and service innovations are required in the medium term.

While ESB believes that ‘break-through’ advances should continually be sought in the areas of science and technology, the ever approaching 2020 horizon requires focused concentration on solutions to energy security, climate change and sustainable mobility which are now central planks of European and Member State policies, and reflected in National Renewable Energy Action Plans etc.

The effective and efficient allocation of funding and finance in pursuit of innovative solutions to these challenges will be critical. Across Europe, different capabilities and strengths have evolved over recent years, to the extent that certain regions now have advantages over others in terms of innovation potential for particular technologies and services, e.g. Renewable Heating Incentive in UK. ESB believes that scarce EU-funding should be focused on and in those specialist areas rather than a “scattergun” funding allocation approach aimed at keeping everybody happy which may not deliver optimum results.

ESB makes the following suggestions as a means for the EU to maximise the return on funding and finance in the areas of research, development and innovation. These suggestions are supplemented by reference to Energy, which is the sector within which ESB operates and is most familiar.

Demonstration and Innovation Hubs

ESB suggests that the establishment of Demonstration and Innovation Hubs would be a very **effective way to develop the critical mass of industry and research organisation collaboration that would encourage Venture Capital focus and investment**, thereby providing the necessary conditions for technology and service innovation. ESB believes that the allocation of funding to small, medium or large

scale collaborations (in terms of number of members) will enable innovation at different points in the overall supply chain.

ESB suggests that Ireland in conjunction with Northern Ireland has a significant number of advantages that make it an ideal Demonstration and Innovation Hub for Energy and Sustainable Mobility, including:

- Ireland's energy policy requires that over 40% of its electricity production comes from renewable sources. This target will be achieved primarily by wind generation (37%) with the balance made up by biomass, hydro and ocean technologies. Northern Ireland has set a very similar target;
- Ireland has commenced the roll-out of electric vehicle (EV) charging infrastructure to support a 10% penetration of electric vehicles by 2020. Northern Ireland is similarly proceeding with EV infrastructure roll-out;
- The fact that each country has a distinct currency (Euro in Ireland and GB Pound in Northern Ireland) affords the opportunity for developing and trialling EV charge point management and payment systems that incorporate currency transactions, a key issue for wider EV integration between EU countries and their non-EU neighbours;
- There is a single owner of the electricity transmission and distribution systems in Ireland and Northern Ireland, thereby allowing the process of standardisation, design, procurement and implementation of technology to be more streamlined than would otherwise be the case involving multiple asset owners;
- The distribution system implemented in Ireland has been ranked third place internationally under the Smart Grid maturity model. This grid will become ever increasingly smart from a technical perspective as ongoing research and demonstration initiatives on wind integration, carbon abatement and electric vehicle integration are further advanced;
- Many of the largest ICT multinational companies, (e.g. IBM, HP, and Intel) which are all committed to Ireland, are each interested in solutions to the EU 2020 challenges;
- Strong collaboration by universities on research themes over the last number of years, which was recognised in designating Dublin as City of Science for 2012, provides a critical mass of research providers in the Energy and Sustainable Mobility areas;
- English is the primary business language in Ireland which allows ease of interaction and knowledge sharing across other Member States; and
- Ireland is outward looking and has an open philosophy to growth coupled with a track record of functioning effectively as a small state in a complex world;

Private sector investors will prioritise their investments in the most advantageous areas. The advantages above, coupled with state policies that mandate that the Energy and Sustainable Mobility targets must be met, will be conducive for initial private sector investment in innovative technologies and services in these areas. However, for sustainable growth in these technologies and services, prioritisation of Demonstration and Innovation Hubs for simplified and fast access to funding, in particular for demonstration and commercialisation would be beneficial to maintain forward momentum.

Other EU wide initiatives such as definition of technical and commercial outcomes (i.e. smart parameters) for grand challenges being addressed in these hubs, coupled with guaranteed routes to market for supporting technologies, could have the potential to further focus and drive innovation.

Financial Prizes & Public Procurement Contracts

Public procurement across the EU accounts for approximately 17% of EU-GDP. ESB believes that there is potential to leverage the scale of public procurement expenditure as a means to incentivise innovation.

ESB believes that as part of EU-wide procurement, that companies in Demonstration and Innovation Hubs could be **incentivised to collaborate and develop innovative solutions or services to achieve pre-defined (by EC) technical requirements and pre-defined commercial pricing parameters** (i.e. “smart” parameters) for products and services that would contribute to delivery of the EU 2020 “grand challenges”.

This approach could be used as a route to market for innovative solutions and services with the use of complementary financial “prizes” for achievement of these smart parameters / technical breakthroughs as additional incentive in prioritised areas. While financial “prizes” on their own can act as a spark for disruptive technology development, the more sustainable benefit for the innovator or its investors, is the market leader value that follows the publicity surrounding announcement of awards. ESB believes that **linking ‘prizes’ with public procurement contracts could be a smart way to encourage private venture capital investment** into those businesses best positioned within Demonstration and Innovation Hubs to achieve the pre-defined technical or service advancements. ESB also believes that a clear focus and drive will also lead to many additional spin-off products and services across the whole supply chain, during the innovation and commercialisation cycle.

Longer Term Wins for Europe

In the longer term, ESB believes that innovation can be enhanced by an increased focus on entrepreneurship and innovation skills throughout the education chain. By increasing exposure of students in second level education (for example during the transition year programme in Ireland’s secondary schools) to the innovation cycle where practiced successfully by large scale industry and SME businesses, an **innovation dynamic could be awoken in students**.

For third level education, **financial supports** should be provided to both the business community and academia **to encourage collaborative education programmes incorporating industry / business exposure**. Businesses could identify those areas where future innovation is required and continually liaise with third level education bodies to ensure alignment of curriculum and teaching practices necessary to provide the desired ‘entry’ levels to industry / business sectors etc. In this way, third level graduates may be better positioned as entrepreneurs and innovators following graduation.

EU Member States are no longer just competing with other Member States for inward investment, retention of academic and industry / business expertise and entrepreneurial capability. Member States are now competing with USA, Asia, Russia and countries in South America. As such, at a minimum, the education systems and business communities across Europe must work together to incorporate a level of entrepreneurial and innovative “creativity” in their third-level science, technology and engineering curriculums at least on a par with these other countries. Thereafter, they must be positioned to work together so as to retain, further encourage and develop this intellectual capacity and capability rather than losing it to other non-EU jurisdictions that might put a higher value on it.

ESB believes that the suggestions above will provide longer term foundations for innovation and sustainable economic growth across the EU.

Summary

ESB suggests the following as ways for EU to make better use of the available funds for Research and Innovation to achieve the EU “grand challenges” and thereby support smart sustainable economic growth:

- Increase EU funding of research, demonstration and innovation;
- Learn from experiences of other non-EU countries in securing private sector investment;
- Substantially consolidate existing funding and financial instruments, apply a consistent set of rules in their implementation and expand communication and access to research and demonstration outcomes;
- Introduce pre-qualification criteria and greater up-front funding to align EU administration and decision making timeframes with the innovation cycle;
- Designate a number of Demonstration and Innovation Hubs across the EU for particular technologies and services, recognising the existing advantages that these areas have for innovation;
- Streamline funding and finance towards achievement of technical advancement or service innovation within these hubs;
- Incentivise collaboration in hubs to develop innovative solutions that will achieve pre-defined technical requirements and commercial pricing parameters;
- Link financial ‘prizes’ for achievement of these ‘smart parameters’ with public procurement contracts as a means to stimulate private venture capital investment;
- Enhance second level education curriculums through exposure to industry and business innovation successes;
- Increase entrepreneurial skills and innovative resourcefulness in third-level education curriculums to a level on par with other innovative jurisdictions; and
- Provide financial supports to encourage collaborative education programmes between industry / business and academia;