

## **The Freedom Association's submission to the Balance of Competences review:**

### **Research and Development**

#### **Introduction**

The Freedom Association was founded on 31 July 1975 and is a non-partisan, centre-right, libertarian pressure group. TFA believes in the freedom of the individual in all aspects of life, including economic, to the greatest extent possible. As such, the Association seeks to challenge all erosion of civil liberties and campaigns in support of individual liberty, free market economics and freedom of expression.

Consistent with this vision is freedom of scientific research from the constraints of state interference and a fear that scientific research will be diverted to malign ends by the state, as has happened under extreme-left wing and extreme-right wing regimes <sup>1 2</sup>. The benefits of scientific research are for the service of society and, more particularly, individual well-being, not to serve the anonymous self-seeking state.

#### **Context**

**The European Commission for the first time talked in terms of a crisis in innovation as well as research and development when they presented their Europe 2020 programme and the innovation imperative as a way forward beyond the present economic crisis. But is the European Union the best means to deliver results in response to this imperative?**

A truly innovative society is distinct from other nations, as an innovation which occurs in all societies simultaneously is not an innovation at all but a development. An innovation as it diffuses loses its character as an innovation. Innovation to be real, therefore has to be a perpetual process and cannot survive for very long institutionally if it is tied to dead or unresponsive or distant structures of support. Innovation is the antithesis of societal convergence seen in globalisation <sup>3</sup>.

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<sup>11.</sup> Popovsky, M (1980) *Science in Chains : the Crisis of Science and Scientists in the Soviet Union Today* (translated from the Russian by Paul Falla) Harvill Press, London

<sup>2</sup> Proctor, R (1988) *Racial Hygiene, Medicine under the Nazis*, Harvard University Press, Massachusetts

<sup>3</sup> Porter, M (1990) *The Competitive Advantage of Nations* Macmillan, London. This is the classic work on national prosperity- this is a book whose lessons have to be learnt by each succeeding generations and whose lessons become diluted when the goal shifts from national prosperity to enhancing European competitiveness more generally. European competitiveness will ultimately be only sustainably enhanced when each European nation is competitively stronger in their own right.

Historically high levels of taxation and regulation are enemies of innovation and the progressive development of society. High taxation and regulation generate perpetual cycles of boom and bust, business confidence depending not on fundamental economic factors but on ongoing growth in government expenditure which has to be periodically curtailed. However, in one sense, if recession is not conducive to innovation when there is limited government and private money to invest in research, in another sense it is promoted, as innovation is for many companies the only way to overcome the crisis.

High levels of taxation reduce even further money available for investment in research and development. Greater levels of venture capital are created when businesses keep being created which have a final sale value, releasing money for future investment and minimising dependence on debt. Taxation on capital is an enemy of research and development.

The high levels of regulatory control exercised by government limit innovation. Available product ranges are determined by legislation. When novel products are produced, they can hardly be described as innovative, as they have been developed in response to a change in legislation. New products only fit in the limited space permitted to them by legislation. This also has a baleful effect on true competition as company product ranges converge and the only way they can compete is by making the services associated with the product more attractively or efficiently delivered.

A better regulation agenda if it means more precise legislative definitions, more rigorously enforced, is an enemy of innovation. Deregulation to maximise the number of products and services available can do as much if not more for innovation than directive scientific and research policies. Regulation can have unintended consequences for innovation- when the REACH chemical policy was introduced registration costs <sup>4</sup>, despite volume banding, fell disproportionately on the speciality chemicals, where all the innovation within the sector takes places but whose turnovers for each chemical are smaller in comparison to the registration costs. This was all for a programme in which even Commission officials conceded privately that no lives were saved but a great deal of data was collected.

## **Funding flows**

European expenditure on research and development from 2013 will be provided under the Horizon 2020 programme for which an indicative budget has been set of 77.6 billion- the breakdown of areas can be found in the footnote <sup>5</sup>. The new programme is replacing the previous FP7 programme, the Competitiveness and Innovation programme as well as incorporating the previously separately funded European Institute of Innovation and Technology. This does not however rule out an underlying duplication of funding programmes remaining, despite the Commission declared aim of minimising duplication of research programmes. This is in contrast to their own impact assessment of the European Research Area <sup>6</sup>, in which they praise the virtues of competition. Indeed, competition is a

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<sup>4</sup> [Reach Registration Costs](#), European Commission website, accessed 30.06.2013

<sup>5</sup> [Horizon 2020 Budget](#), European Commission website, accessed 30.06.2013

<sup>6</sup> SWD(2012) 212 final [Impact assessment accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A Reinforced European Research Area Partnership for Excellence](#), published

vital dynamic in obtaining positive and timely results from research groups. We would not, of course, support duplicate funding of like-for-like research which consumes limited resources-identikit research programmes are unlikely to lead to breakthroughs in any case.

This also can be compared to the approximately gross €15 billion contribution which the UK makes to the EU budget from a total UK budget of €862 billion and a total projected EU budget for 2014 onwards of €146 billion. The UK therefore would be making a total contribution to the Horizon 2020 programme of approximately €7.6 billion. How much of this can really be called RTD and/or innovation research depends on a subjective view of the breakdown in the Horizon2020 budget.

This compares to the breakdown of science funding in the UK- figures given in billion pounds- for 2011, last available year from the Office of National Statistics <sup>7</sup>.

R&D funding in the UK	27.05
Constant prices (2011 prices)	
Of which	
Government	3.14
Research Councils	2.785
Higher Education Funding Councils	2.45
Business Enterprise	12.616
Higher Education	0.31
Abroad	4.799
Private Non-Profit	1.263

In this the last year of the FP7 programme, the UK received €7 billion <sup>8</sup> of research funding- this is almost a net balance in contrast to the net donation that the UK makes to the EU budget.

## Pure science

The value of pure science is much debated, seen by some as increasingly expensive with diminishing returns and, by others, as a great adventure as the secrets of the universe are progressively unlocked, with spin-offs in practical science and spin-ins due to the technology demands of the programmes. Such expenses can clearly only be borne in multinational programmes but one has to question the role of intermediary bodies, the European Commission itself and then the European Research Council. Money transfers through three or four layers of bureaucracy inevitably leads to financial waste and inappropriate allocation, which takes no account of the will of the donor. The long-established CERN project indeed has a very small contribution from the European Union for operations but the EU makes a significant contribution to specific projects. <sup>9</sup>

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17.07.2012

<sup>7</sup> [\*Office of National Statistics, Statistical Bulletin\*](#), published 13 March 2013

<sup>8</sup> Hale T (22.11.2012) [\*Research power is vital for our future competitiveness – the EU budget must reflect this\*](#) Universities UK Blog

<sup>9</sup> [\*FP7 Projects\*](#), CERN website, accessed 4/6/2013

A cogent argument can also be made for private sector funding of pure science and indeed that the availability of government finance pushes out such funding <sup>10</sup>.

## Results-driven science

On the borderline between pure and applied science, there is a grey area. The degree to which scientists should have control over determining their own projects and the degree to which they can be set targets has long been open to dispute, especially since the much-vaunted "the white heat of the technological revolution" in which scientists, while free of wartime requirements were encouraged to participate in by the state.

The European Communication on simplifying the implementation of the research framework programmes <sup>11</sup> sought a move from a results-based to a cost-based funding. This has the advantage of reducing micro-management of the European Commission's programmes, which itself has inherent bureaucratic costs but in another sense restricts the freedom of the researchers and pre-judges the outcomes.

Product development is an inherently risky process which mirrors well the more general risk taking in business. It is a process of attrition- many products ideas often result in only a few products. Even good products can have resources diverted away from them in favour of an excellent product, as there is an opportunity cost. Time to market can be crucial. Products do not necessarily have to be first but the timing of entry on the market must be wherever possible unconstrained and precisely judged. Brilliant product research can be eviscerated by poor product launching.

Markets exist around and funding is needed at all stages of the product development process. This funding needs to be proportionate and targeted. There is the famous innovation valley of death which is notorious for killing off new product ideas <sup>12</sup>. The inherent distance of the European funding process from the product development process means that inappropriate levels (both sufficient and more than sufficient) of funding is applied and in the wrong places and at the wrong time. Worse, programmes are designed to fit funding and not vice-versa. Also inherent in the European system are time delays in financing which national systems, closer to the research fields, are in a better position to reduce and even eliminate.

A very positive European programme in the market context is the Risk Sharing Finance Facility jointly funded with €1 billion each by the European Investment Bank and the European

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<sup>10</sup> Kealey T (1997) *End Government Science Funding* Cato Institute

<sup>11</sup> COM (2010) 187 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions [Simplifying the implementation of the research framework programmes](#) published 29.04.2010

<sup>12</sup> Roth D (21.01.2010) [Addressing the Innovation "Valley of Death:." It's the Products. Stupid!](#) Xconomy website, accessed 26.04.2013

Union, although we would question the need for the EU intermediation of the money from the national governments to the banks. The scheme offers a way of evaluating and then sharing the burden of risk- there is the caveat that removal of risk can send confused signals to the marketplace. If used properly however, the scheme can lead to an enhanced marketplace and the British government should examine the possibilities for expansion in scale and scope as was discussed in a report of a group of independent experts in 2010.<sup>13</sup>

## Picking winners

Another consequence of the results-driven science is that it empowers the European Commission to “pick winners”. Examples of this approach are the Key Enabling Technologies (KETs), the European Innovation Partnerships of the Innovation Union (the first was on Healthy Ageing, a good example of how innovation and science is used to obtain increasing European leverage in areas which were previously dealt with at national level and the Knowledge and Innovation Communities of the European Institute of Innovation and Technology. The European Commission inevitably steps over the line, not just setting framework conditions but also determining programmes in great detail. The UK government should be able to set its own degree of intervention in scientific research or even better to minimise it, but European policy prevents this.

Bureaucratic inertia means that while science develops rapidly, programmes and their priorities can have a long after-life unresponsive to the broader policy issues. There is clearly an over-commitment and vested interest in programmes relating to global warming given recent scientific developments in the field.

Joint Technology Initiatives not only determine research but they also direct the corporate strategy of the companies involved. This can clearly be seen in the Clean Skies JTI<sup>14</sup>. Many companies would prefer lower levels of taxation to the Private-Public partnerships of the Joint Technology Initiatives.

Putative market failure is often quoted to justify such intervention at the European level<sup>15</sup> but product and service attrition and creative destruction are inherent in the process. Indeed market failure, far from being a blight, is part of the learning process, as the researchers identify the reasons for failure, to better understand the grounds for success.

## Unreal markets

Science and research are not really promoted by unreal concepts such as the knowledge economy or the green economy. While the knowledge triangle- research, education, business is fundamental, knowledge as such does not create value added, nor enhance final value. Academics have a vested interest in the knowledge economy, as environmentalists do

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<sup>13</sup> [\*Mid-Term Evaluation of the Risk-Sharing Financial Facility \(RSFF\)\*](#), Final draft of the Group of Independent Experts, published 31.07.2013

<sup>14</sup> [\*Consultation on the preparation of the Clean Sky Joint Technology Initiative under Horizon 2020\*](#) European Commission website, accessed 30.07.2013

<sup>15</sup> For instance, in the field of recycling, [\*Lead market initiative recycling\*](#), accessed 30.07.2013

in the green economy <sup>16</sup>. The green movement put forward the idea at the time of the introduction of the chemical policy, REACH that many jobs would be created in the testing houses that would have to be established to meet the requirements. The reality would be a diversion of scientific talent from the real necessity of developing new products for the global marketplace in which safety testing is, of course, included, but in a subsidiary role.

## Intellectual property

The UK has a large, historic and continually developing intellectual property base. Companies are often not even aware of unused intellectual property in their possession and more awareness is needed of this problem. The European Union programmes often act as a means of access to British intellectual property that could have been put to better use if control had been maintained over it.<sup>17</sup>

## Public procurement

There is evidence, however, that ownership of intellectual property does not correlate with profitability of companies, and therefore the availability of the cash reserves for future investment less dependent on debt finance. Rather it correlates with the flexibility of companies in solving the problems presented to them by clients.<sup>18</sup> This is particularly the case when it comes to public procurement at national and European level. This has been considered in depth by the House of Lords Science and Technology Committee.<sup>19</sup>

While The Freedom Association always will have a preferential option for private solutions, awareness is necessary of the potential for innovative capacity for public procurement. Access of European companies to public procurement in the UK potentially can damage the innovative capacity of British companies who would have otherwise won the work, but equally well the degree to which winning European public contracts has generated innovation in UK

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<sup>16</sup> Taylor J & Van Doren P (2011) [\*The Green Jobs Myth\*](#) Forbes Magazine

<sup>17</sup> For evidence concerning this section please see: Ellis J (2012) [Perception of IP as a corporate profit centre on the wane, says IPO industry survey](#) Intellectual Asset Management 13.09.2012

There is also a proof at Louvain la Neuve who has looked at patent portfolios and profitability.

But also Neuhäusler P, Frietsch R, Schubert T and Blind K [Patents and the financial performance of firms– An analysis based on stock market data](#) Fraunhofer ISI Discussion Papers Innovation Systems and Policy Analysis No. 28 Karlsruhe, February 2011

[Understanding public procurement of innovation](#)- Manchester Business School project- see also the bibliography

<sup>18</sup> See presentation by David Connell, Project Leader, Senior Research Fellow, Centre for Business Research (CBR), University of Cambridge to the Financial Instruments in COSME and Horizon 2020 Workshop, Brussels 11 April 2012, A EU US-Style Public Procurement SBIR Programme.

<sup>19</sup> House of Lords Science and Technology Committee [First Report Public procurement as a tool to stimulate innovation](#) published 20.05.2011



companies needs to be further studied, as does the degree of impact of mutual cooperation in seeking public tenders. This is part of the wider debate of the degree to which the UK would be excluded from the Single Market if the relationship with the EU was either renegotiated or ended.

## **Indicators and targets**

Indicators are in a constant state of development. The launch of the Europe 2020 process saw a new impetus to refine indicators as a result of the revised strategic goals of the European Commission. Central to these were targets for innovation and also research and development given the central focus that was given to these matters in the document. There is even the search for a meaningful indicator for innovation, which encapsulates all other twenty four indicators<sup>20</sup>. Consistent databases therefore do not exist over a long-enough long period to enable determination of success or otherwise of programmes, still less to influence public policy decision making. They are, like evidence on the effectiveness of pharmaceuticals, collected after the event.

Targets themselves can be questioned, such as the 3 percent of GDP spend on research and development which is one of the five targets of the Europe 2020 programme.<sup>21</sup> A level of spend can mean nothing if the spend is inappropriate, irrelevant or simply misdirected. See also the above comments on intellectual property.

This also shows that there is a potential for research objectives to be lost in the wider social and economic aspirations of the European Union, although, of course, they can never be completely abstracted from them.

Targets and indicators are no substitute for the market place when it comes to the allocation of resources for research and development. The decisions are taken out of the hands of the scientific elites and politicians and taken by the market. The market does not always get it right first time, but within the discipline of the market are corrective mechanisms which are not active in a state driven science sector.

Similarly, there is no real comparison that can be made between the success or otherwise of UK research and development if the UK remains a member of the EU, if she leaves or has a redefined relationship. The imperative to come to a decision, for other more fundamental reasons, such as the moral case for sovereignty or growing European wide economic governance or the ongoing development of financial sector policies with a direct impact on the City of London, mitigates against gathering in a short timescale such technical and economic data on innovation and science which could allow such decisions to be taken.

## **Standardisation**

The elaborate structures of European standardisation are another example of “picking winners”. There is good evidence that market driven formation of standards always (almost by definition) picks the correct winner and does so more quickly than interminable discussions

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<sup>20</sup> [European Innovation Scoreboard](#), European Commission website, accessed 30.06.2013

<sup>21</sup> [Europe 2020 targets](#), European Commission website, accessed 30.06.2013

in committees driven by vested interest.<sup>22</sup>

## Public accountability

The scientific input into the new system for delegated and implementing acts is not subject to democratic scrutiny, as was the case in the old comitology system. Some of the judgements are political and not science-based. This is especially critical in cases requiring risk assessment<sup>23</sup>. Generally, we are concerned about the plans to Europeanise Parliamentary Technology Assessment (PTA) as this potentially will further remove power from the UK Parliament<sup>24</sup>. The PTA whether at European or UK level has been historically phrased in terms of technological risks, without necessarily seeing benefits. This risk-adverse approach to technology by politicians could be enshrined from the European level downwards.

## Internationalisation

Both Switzerland and Norway are active participants in the European research cooperation, especially via the COST programme. In the event of a new UK relationship with the EU developing structures for such cooperation would surely develop, not necessarily involving the intermediation of the EU.

COST itself ensures that the EU has a certain openness to international scientific life, but is it also the case that given the UK's great tradition for science and research, we could take much greater advantage of this magnet for international cooperation outside the European Union as our national priorities could be much more responsive to international interests.

## The Fifth Freedom

The Freedom Association of its very nature supports the so-called fifth freedom, the free movement of knowledge, which the associated freedom of movement of scientists and researchers. However, we are concerned that the EU discriminates in favour of EU citizens, which goes against the concept of science as a universal and international discipline. It is not clear that the EU as such is needed a guarantee of this freedom<sup>25</sup> which should be natural to all freedom-loving, democratic governments.

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<sup>22</sup> See Cargill C (2011) [Why Standardization Efforts Fail](#) Journal of Electronic Publishing, Volume 14, Issue 1, Summer 2011

Mainelli M (2006) [Standards Markets: The free market response to regulation](#) Lecture given on 16 October 2006 in Barnard's Inn Hall, Gresham College

<sup>23</sup> Christiansen T & Polak J (2009) [Comitology between Political Decision-Making and Technocratic Governance: Regulating GMOs in the European Union](#) EIPA

<sup>24</sup> [Technology across Borders Exploring perspectives for pan-European Parliamentary Technology Assessment](#) European Parliament Directorate General for Internal Policies Directorate G Impact Assessment Science and Technology Options Assessment, published March 2013

<sup>25</sup> Martens H & Zuleeg F (2008) [Why the Internal Market Needs a Fifth Freedom](#) Euractiv



## **Conclusion**

A vibrant science-based industry to meet the challenges of the modern world needs more than anything low taxation, availability of finance and deregulation rather than direction from the European level. The European Union has a vested interest in high taxation to increase their budgets and to enhance their role in allocation of resources, promotes in legislation the Basel III guidelines for banks which cuts off financing, especially to SMEs and also exists to regulate. In doing so, it co-opts and draws in the scientific community who would be better occupied researching and developing tomorrow's epoch making products and services today.